

Hazardous Substances Safety Data Sheets Vehicle

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Safety Data Sheet



Hazardous, Dangerous Goods

1. MATERIAL AND SUPPLY COMPANY IDENTIFICATION

Product name: SELLEYS ARALDITE 5 MINUTE EPOXY ADHESIVE
- PART A

Synonyms

Selleys Araldite 5 Min 8mL
Selleys Araldite 5 Min 14mL
Selleys Araldite 5 Min 24mL
Selleys Araldite 5 Min 24mL
Selleys Araldite 5 Min 35mL
Selleys Araldite 5 Min 200mL
Selleys Araldite 5 Min 200mL

Product Code

100020
100028
100019
NP600019-UNIT
100018
NP600017-UNIT
100017

Bar Code

9300697107619
9300697124630
9300697106391
9300697106391
9300697101402
9300697100412
9300697100412

Recommended use: Two pack adhesive for bonding rigid plastics, glass, metal, china and wood.

Supplier: Selleys, a division of DuluxGroup (New Zealand) Pty Ltd

Company No.: 55 133 404 118 / Co. 2355191

Street Address: 150 Hutt Park Road
Lower Hutt
New Zealand

Telephone: 0800 735 539

Emergency Telephone number: Australia – 1800 220 770; New Zealand – 0800 220 770

2. HAZARDS IDENTIFICATION

This material is hazardous according to criteria of EPA New Zealand.

EPA Group Standard: HSR002670 - Surface Coatings and Colourants (Subsidiary Hazard) Group Standard 2020



Signal Word

Warning

Hazard Classifications

Skin Corrosion/Irritation - Category 2

Serious Eye Damage/Irritation - Category 2

Sensitisation - Skin - Category 1

Long term hazards to the Aquatic Environment - Category 2

Hazard Statements

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H411 Toxic to aquatic life with long lasting effects.

Product Name: SELLEYS ARALDITE 5 MINUTE EPOXY
ADHESIVE - PART A

Reference No: SELNZ7EN000092

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Prevention Precautionary Statements

- P102 Keep out of reach of children.
P103 Read carefully and follow all instructions.
P261 Avoid breathing dust, fume, gas, mist, vapours or spray..
P264 Wash hands, face and all exposed skin thoroughly after handling.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing including eye/face protection and suitable respirator.

Response Precautionary Statements

- P101 If medical advice is needed, have product container or label at hand.
P302+P352 IF ON SKIN: Wash with plenty of water and soap.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.
P362 Take off contaminated clothing.
P363 Wash contaminated clothing before reuse.
P391 Collect spillage.

Storage Precautionary Statement

Not allocated

Disposal Precautionary Statement

- P501 Dispose of contents/container in accordance with local, regional, national and international regulations.

DANGEROUS GOOD CLASSIFICATION

Classified as Dangerous Goods by the criteria of the "Australian Code for the Transport of Dangerous Goods by Road & Rail" and the "New Zealand NZS5433: Transport of Dangerous Goods on Land".

Dangerous Goods Class: 9

3. COMPOSITION INFORMATION

CHEMICAL ENTITY	CAS NO	PROPORTION
Oxirane, 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis- Ingredients determined to be non-hazardous or below reporting limits	1675-54-3	>60 % (w/w) Balance
		100%

4. FIRST AID MEASURES

If poisoning occurs, contact a doctor or Poisons Information Centre (Phone Australia 131 126, New Zealand 0800 764 766).

Inhalation: Remove victim from exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. Seek medical advice if effects persist.

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Skin Contact: Effects may be delayed. If skin or hair contact occurs, immediately remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre or a Doctor; or for 15 minutes and transport to Doctor or Hospital.

Eye contact: If in eyes, hold eyelids apart and flush the eyes continuously with running water. Continue flushing until advised to stop by the Poisons Information Centre or a Doctor; or for at least 15 minutes and transport to Doctor or Hospital.

Ingestion: Rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water to drink. Never give anything by the mouth to an unconscious patient. If vomiting occurs give further water. Seek medical advice.

PPE for First Aiders: Wear safety shoes, overalls, gloves, safety glasses. Available information suggests that gloves made from nitrile rubber should be suitable for intermittent contact. However, due to variations in glove construction and local conditions, the user should make a final assessment. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

Notes to physician: Treat symptomatically. Effects may be delayed.

5. FIRE FIGHTING MEASURES

Hazchem Code: •3Z

Suitable extinguishing media: If material is involved in a fire use alcohol resistant foam or dry agent (carbon dioxide, dry chemical powder).

Specific hazards: Combustible material.

Fire fighting further advice: On burning or decomposing may emit toxic fumes. Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to vapour or products of combustion or decomposition.

6. ACCIDENTAL RELEASE MEASURES

SMALL SPILLS

Wear protective equipment to prevent skin and eye contamination. Avoid inhalation of vapours or dust. Wipe up with absorbent (clean rag or paper towels). Collect and seal in properly labelled containers or drums for disposal.

LARGE SPILLS

Clear area of all unprotected personnel. Slippery when spilt. Avoid accidents, clean up immediately. Wear protective equipment to prevent skin and eye contamination and the inhalation of vapours. Work up wind or increase ventilation. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material). Collect and seal in properly labelled containers or drums for disposal. If contamination of crops, sewers or waterways has occurred advise local emergency services.

Dangerous Goods - Initial Emergency Response Guide No: 47

7. HANDLING AND STORAGE

Handling: Avoid eye contact and skin contact. Avoid inhalation of vapour, mist or aerosols.

Product Name: SELLEYS ARALEDITE 5 MINUTE EPOXY
ADHESIVE - PART A

Reference No: SELNZ7EN000092

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Storage: Store in a cool, dry, well-ventilated place and out of direct sunlight. Store away from foodstuffs. Store away from incompatible materials described in Section 10. Store away from sources of heat and/or ignition. Keep container standing upright. Keep containers closed when not in use - check regularly for leaks.

This material is classified as a Class 9 Miscellaneous Dangerous Good as per the criteria of the "New Zealand NZS5433: Transport of Dangerous Goods on Land" and/or the "Australian Code for the Transport of Dangerous Goods by Road & Rail" and must be stored in accordance with the relevant regulations.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

National occupational exposure limits: No value assigned for this specific material by WorkSafe New Zealand.

Biological Limit Values: As per the WorkSafe New Zealand the ingredients in this material do not have a Biological Limit Allocated.

Engineering Measures: Natural ventilation should be adequate under normal use conditions..

Personal Protection Equipment: SAFETY SHOES, OVERALLS, GLOVES, SAFETY GLASSES.

Wear safety shoes, overalls, gloves, safety glasses. Available information suggests that gloves made from nitrile rubber should be suitable for intermittent contact. However, due to variations in glove construction and local conditions, the user should make a final assessment. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

Hygiene measures: Keep away from food, drink and animal feeding stuffs. When using do not eat, drink or smoke. Wash hands prior to eating, drinking or smoking. Avoid contact with clothing. Avoid eye contact and skin contact. Avoid inhalation of vapour, mist or aerosols. Ensure that eyewash stations and safety showers are close to the workstation location.

9. PHYSICAL AND CHEMICAL PROPERTIES

Form:	Liquid
Colour:	Clear
Odour:	N Av
Solubility:	Insoluble in water
Specific Gravity:	1.1 - 1.18
Relative Vapour Density (air=1):	>1
Vapour Pressure (20 °C):	N Av
Flash Point (°C):	>200
Flammability Limits (%):	N App
Autoignition Temperature (°C):	N Av
Melting Point/Range (°C):	N Av
Boiling Point/Range (°C):	>200
pH:	N App
Viscosity:	>21 mm ² /s @ 40 °C
Total VOC (g/Litre):	N Av

(Typical values only - consult specification sheet)
N Av = Not available, N App = Not applicable

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10. STABILITY AND REACTIVITY

Chemical stability: This material is thermally stable when stored and used as directed.

Conditions to avoid: Elevated temperatures and sources of ignition.

Incompatible materials: Oxidising agents.

Hazardous decomposition products: Oxides of carbon and nitrogen, smoke and other toxic fumes.

Hazardous reactions: No known hazardous reactions.

11. TOXICOLOGICAL INFORMATION

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

Acute Effects

Inhalation: Material may be an irritant to mucous membranes and respiratory tract.

Skin contact: Contact with skin will result in irritation. A skin sensitiser. Repeated or prolonged skin contact may lead to allergic contact dermatitis.

Ingestion: Swallowing can result in nausea, vomiting and irritation of the gastrointestinal tract.

Eye contact: An eye irritant.

Acute toxicity

Inhalation: This material has been classified as not hazardous for acute inhalation exposure. Acute toxicity estimate (based on ingredients): $LC_{50} > 20.0$ mg/L for vapours or $LC_{50} > 5.0$ mg/L for dust and mist.

Skin contact: This material has been classified as not hazardous for acute dermal exposure. Acute toxicity estimate (based on ingredients): $LD_{50} > 2,000$ mg/Kg bw

Ingestion: This material has been classified as not hazardous for acute ingestion exposure. Acute toxicity estimate (based on ingredients): $LD_{50} > 2,000$ mg/Kg bw

Corrosion/Irritancy: Eye: this material has been classified as a Category 2 Hazard (reversible effects to eyes). Skin: this material has been classified as a Category 2 Hazard (reversible effects to skin).

Sensitisation: Inhalation: this material has been classified as not a respiratory sensitiser. Skin: this material has been classified as a Category 1 Hazard (skin sensitiser).

Aspiration hazard: This material has been classified as not an aspiration hazard.

Specific target organ toxicity (single exposure): This material has been classified as not a specific hazard to target organs by a single exposure.

Chronic Toxicity

Mutagenicity: This material has been classified as non-hazardous.

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Carcinogenicity: This material has been classified as non-hazardous.

Reproductive toxicity (including via lactation): This material has been classified as non-hazardous.

Specific target organ toxicity (repeat exposure): This material has been classified as non-hazardous.

12. ECOLOGICAL INFORMATION

Avoid contaminating waterways.

Acute aquatic hazard: This material has been classified as not hazardous for acute aquatic exposure. Acute toxicity estimate (based on ingredients): > 100 mg/L

Chronic aquatic hazard: This material has been classified as a Category Chronic 2 Hazard. Non-rapidly or rapidly degradable substance for which there are adequate chronic toxicity data available OR in the absence of chronic toxicity data, Acute toxicity estimate (based on ingredients): 1 - 10 mg/L, where the substance is not rapidly degradable and/or $BCF \geq 500$ and/or $\log K_{ow} \geq 4$.

Ecotoxicity in the soil environment: This material has been classified as non-hazardous.

Ecotoxicity to terrestrial vertebrates: This material has been classified as non-hazardous.

Ecotoxicity to terrestrial invertebrates: This material has been classified as non-hazardous.

Ecotoxicity: No information available.

Persistence and degradability: No information available.

Bioaccumulative potential: No information available.

Mobility: No information available.

13. DISPOSAL CONSIDERATIONS

Persons conducting disposal, recycling or reclamation activities should ensure that appropriate personal protection equipment is used, see "Section 8. Exposure Controls and Personal Protection" of this SDS.

If possible material and its container should be recycled. If material or container cannot be recycled, dispose in accordance with local, regional, national and international Regulations.

14. TRANSPORT INFORMATION

ROAD AND RAIL TRANSPORT

Classified as Dangerous Goods by the criteria of the "Australian Code for the Transport of Dangerous Goods by Road & Rail" and the "New Zealand NZS5433: Transport of Dangerous Goods on Land".



Safety Data Sheet



UN No: 3082
Dangerous Goods Class: 9
Packing Group: III
Hazchem Code: •3Z
Emergency Response Guide No: 47
Limited Quantities 5 L

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S. (EPOXY RESIN)

Segregation Dangerous Goods: Not to be loaded with explosives (Class 1). Note 1: Materials that are fire risks are incompatible with oxidising agents (Class 5.1) or organic peroxides (Class 5.2). Exemptions may apply.

MARINE TRANSPORT

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea. This material is classified as a Marine Pollutant (P) according to the International Maritime Dangerous Goods Code.



UN No: 3082
Dangerous Goods Class: 9
Packing Group: III

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S. (EPOXY RESIN)

AIR TRANSPORT

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.



UN No: 3082
Dangerous Goods Class: 9
Packing Group: III

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S. (EPOXY RESIN)

15. REGULATORY INFORMATION

This material is not subject to the following international agreements:

Montreal Protocol (Ozone depleting substances)
The Stockholm Convention (Persistent Organic Pollutants)
The Rotterdam Convention (Prior Informed Consent)

Product Name: SELLEYS ARALEDITE 5 MINUTE EPOXY
ADHESIVE - PART A

Reference No: SELNZ7EN000092

Issued: 25 July 2021

Version: 6.0

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Basel Convention (Hazardous Waste)

International Convention for the Prevention of Pollution from Ships (MARPOL)

This material/constituent(s) is covered by the following requirements:

All components of this product are listed on or exempt from the New Zealand Inventory of Chemical (NZIoC).

AIICS Status: Formulations where all components AIIC listed.

EPA Group Standard: HSR002670 - Surface Coatings and Colourants (Subsidiary Hazard) Group Standard 2020

16. OTHER INFORMATION

Reason for issue: Revised

This Safety Data Sheet has been prepared by Chemical Data Services Pty Ltd (chemdata.com.au) on behalf of its client.

Safety Data Sheets are updated frequently. Please ensure that you have a current copy.

This SDS summarises at the date of issue our best knowledge of the health and safety hazard information of the product, and in particular how to safely handle and use the product in the workplace. Since the company cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, review this SDS in the context of how the user intends to handle and use the product in the workplace.

If clarification or further information is needed to ensure that an appropriate assessment can be made, the user should contact this company.

Our responsibility for product as sold is subject to our standard terms and conditions, a copy of which is sent to our customers and is also available upon request.



Trusted Aerosol Performance

SAFETY DATA SHEET

Section 1 – IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: Blue Lube
Product Code: 7377 & 7379 & 7370
Uses: Cable pulling lubricant, water based.
Restrictions on Use: None identified
Company: Chemz Ltd
Address: 80 Rangitane Place
Whakatu, Hastings
Telephone: +64 6 877 9690
Email: info@chemz.co.nz
Emergency Number 24 hr: 0800 764 766 (0800 POISON) NZ National Poison Centre

Section 2 – HAZARDS IDENTIFICATION

Classification of the product

Not classified as a hazardous substance according to the Hazardous Substance (Minimum Degrees of Hazard) Regulations NZ.
Not classified as a dangerous goods for transport purposes.

HSNO Classifications: Not classified
GHS Classifications: Not classified
Signal Words: Not applicable
Hazard Statements: Not applicable
Safety Phrases: Lubricant is electrically conductive when applied. Dry from conductors before energising circuit.

Section 3 – COMPOSITION INFORMATION ON INGREDIENTS

Hazardous Ingredients	CAS No.	Proportion, % m/m
Ingredients determined to not be hazardous	-	100 %

Section 4 – FIRST AID MEASURES

If medical advice is needed, have product container or label at hand.

If exposed or if you feel unwell: Call a POISON CENTRE or doctor.

Eye contact: IF IN EYES: Flush with plenty of water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation occurs: Get medical advice.

Inhalation: Not expected to occur by this route. If experiencing respiratory symptoms: Get medical advice.

Ingestion: Product is non-toxic. Rinse mouth with water. Give water to drink. Do NOT induce vomiting. Seek medical assistance if feeling unwell.

Skin contact: IF ON SKIN: Wash with plenty of soap and water. Direct contact may cause irritation in sensitive individuals. If skin irritation occurs: Get medical advice.



Trusted Aerosol Performance

SAFETY DATA SHEET

Section 5 – FIRE-FIGHTING MEASURES

Specific hazards:	Not combustible. Packaging may burn if involved in a fire.
Further advice:	On burning, packaging may emit toxic fumes including those of carbon monoxide and carbon dioxide. Fire fighters to wear self-contained breathing apparatus if risk of exposure to products of combustion.
Extinguishing media:	For small fires, use dry chemical, carbon dioxide, water spray or foam. For large fires, use water spray. Extinguishing waters are not likely to affect the aquatic environment.
Hazchem Code:	Not applicable.

Section 6 – ACCIDENTAL RELEASE MEASURES

Minor spills:	Lubricant is extremely slippery. Clean up all spills immediately. It should be washed from floors.
Major spills:	Collect and seal in properly labeled containers for disposal. Wash area down with excess water. Washings are not likely to affect the environment.

Section 7 – HANDLING AND STORAGE

Handling Precautions:	Read product label before use. Keep out of reach of children. Wash hands with soap and water after handling.
Storage:	Store in a well ventilated, cool, dry place and out of direct sunlight.

Section 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits:	No value assigned for product. Exposure standards for constituents (NZ WES);		
	Material	TWA, mg/m³	STEL, mg/m³
	-	-	-
Additional Information:	Lubricant is electrically conductive when applied. Dry from conductors before energising circuit. Lubricant is extremely slippery if spilled.		
Engineering Controls:	No controls required.		
Protective Equipment:	None required in normal use. Gloves may be worn. Wash hands before eating, drinking and smoking.		

Section 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Clear, blue viscous water based gel.
pH:	7.0 - 9.0
Viscosity, cP:	> 30,000
Solubility:	Soluble in water.
Boiling Point, °C:	100
Specific Gravity:	About 1.0
Vapour Density:	Not applicable
Vapour Pressure, kPa:	Not applicable
Melting Point, °C:	Not applicable
Flash Point, °C:	Not applicable
Explosion Limit, % v/v:	Not applicable
Autoignition Temp, °C:	Not applicable



Trusted Aerosol Performance

SAFETY DATA SHEET

Section 10 – STABILITY AND REACTIVITY

Stability: Stable under normal conditions of use. Not reactive. Avoid oxidisers.

Section 11 – TOXICOLOGICAL INFORMATION

Data and interpretation: Not considered to be toxic. No adverse health effects expected.

Basis for Assessment: Information given is based on product testing, and/or similar products, and/or components.

Acute Oral Toxicity: Not toxic: LD₅₀ of mixture calculated to be > 5000 mg/kg, Rat.

Acute Dermal Toxicity: Not toxic: LD₅₀ of mixture calculated to be > 5000 mg/kg, Rabbit.

Acute Inhalation Toxicity: Not toxic: LC₅₀ of mixture calculated to be > 20 mg/L, Rat.

Skin Irritation: Not expected to be irritating. Direct contact may cause irritation in sensitive individuals.

Eye Irritation: Not expected to be irritating.

Respiratory Irritation: Not expected to be irritating.

Sensitisation: Not expected to be a sensitiser.

Mutagenicity: Not expected to be mutagenic.

Carcinogenicity: Not expected to be carcinogenic.

Reproductive toxicity: Not expected to be a human reproductive or developmental toxicant.

Reproductive toxicity effects via lactation: Product not expected to have toxic human reproductive or developmental effects on or via lactation.

Specific Target Organ Toxicity: Harmful to human target organs or systems (Repeated or prolonged exposure)

Repeated Dose Toxicity: Not expected to be toxic.

Additional Information: None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as being carcinogens.

Section 12 – ECOTOXICITY INFORMATION

Ecotoxicity: Product is not expected to be harmful to aquatic organisms or the environment.

Persistence/degradability: Expected to be biodegradable.

Bioaccumulation: Will not bioaccumulate.

Section 13 – DISPOSAL CONSIDERATIONS

Material Disposal: Product wastes are not ecotoxic. May be flushed into the sewer with plenty of water to dilute.

Container Disposal: Recycle empty container if possible or dispose of in landfill in accordance with applicable regulations.

Section 14 – TRANSPORT INFORMATION

Transport: Not classified as a Dangerous Good for transport purposes. Not regulated under IMDG or IATA.

Proper Shipping Name: Not applicable

UN Number: Not applicable

Dangerous Goods Class: Not applicable

Transport Labels Required: None

Subsidiary Risk: Not applicable

Packing Group: Not applicable



Trusted Aerosol Performance

SAFETY DATA SHEET

Marine Pollutant: No

EMS Number Not applicable

DG Segregation: This product is not classified as a Dangerous Goods.

Section 15 – REGULATORY INFORMATION

Inventory Listing: All components of this product are listed on the New Zealand Inventory of Chemicals (NZIoC). This substance is to be managed using the conditions specified in an applicable Group Standard.

Classification: This product is not classified as hazardous according to the criteria of EPA NZ.

EPA Approval Number: Not applicable.

EPA Hsno Controls: Not applicable. Refer to www.epa.govt.nz for information on Controls.

Section 16 – OTHER INFORMATION

NFPA Ratings Health 0 Fire 0 Reactivity 0

Additional information Health Effects from Exposure: It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations	CAS	Chemical Abstract Service number
	EMS	Emergency Response Procedures for Ships Carrying Dangerous Goods
	EPA	Environmental Protection Agency (New Zealand)
	GHS	Globally Harmonized System
	IARC	International Agency for Research on Cancer
	IATA	International Air Transport Association
	IMDG	International Maritime Dangerous Goods
	LC ₅₀	Lethal Concentration, 50% / Median Lethal Concentration
	LD ₅₀	Lethal Dose, 50% / Median Lethal Dose
	LEL	Lower Explosion Limit
	mg/m ³	Milligrams per Cubic Metre
	NZIoC	New Zealand Inventory of Chemicals
	N.O.S.	Not otherwise specified
	OEL	Occupational Exposure Limit
	PEL	Permissible Exposure Limit
	STEL	Short-Term Exposure Limit
	STOT-RE	Specific target organ toxicity (repeated exposure)
	STOT-SE	Specific target organ toxicity (single exposure)
	TLV	Threshold Limit Value
	TWA	Time Weighted Average
	UEL	Upper Explosion Limit

This SDS summarises our best knowledge of the health and safety hazard information. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. Since we cannot control the conditions under which the product may be used, each user must review this SDS in the context of how the user intends to use the product.

End of sds.



Brakleen Aerosol

CRC Industries (CRC Industries New Zealand)

Chemwatch: 4546-61

Version No: 10.1

Safety Data Sheet according to the Health and Safety at Work (Hazardous Substances) Regulations 2017

Chemwatch Hazard Alert Code: 3

Issue Date: 10/12/2021

Print Date: 22/03/2023

S.GHS.NZL.EN

SECTION 1 Identification of the substance / mixture and of the company / undertaking

Product Identifier

Product name	Brakleen Aerosol
Chemical Name	Not Applicable
Synonyms	1752470 - Race Series Brakleen 600g; 5089, 1010490 Brakleen 600g
Proper shipping name	AEROSOLS
Chemical formula	Not Applicable
Other means of identification	Not Available

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Degreasing brake parts. The use of a quantity of material in an unventilated or confined space may result in increased exposure and an irritating atmosphere developing. Before starting consider control of exposure by mechanical ventilation. Application is by spray atomisation from a hand held aerosol pack
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Details of the manufacturer or supplier of the safety data sheet

Registered company name	CRC Industries (CRC Industries New Zealand)
Address	10 Highbrook Drive East Tamaki Auckland New Zealand
Telephone	+64 9 272 2700
Fax	+64 9 274 9696
Website	www.crc.co.nz
Email	customerservices@crc.co.nz

Emergency telephone number

Association / Organisation	CRC Industries (CRC Industries New Zealand)	CHEMWATCH EMERGENCY RESPONSE (24/7)
Emergency telephone numbers	NZ Poisons Centre 0800 POISON (0800 764 766)	+64 800 700 112
Other emergency telephone numbers	111 (NZ Emergency Services)	+61 3 9573 3188

Once connected and if the message is not in your preferred language then please dial 01

SECTION 2 Hazards identification

Classification of the substance or mixture

Classification [1]	Aerosols Category 1, Acute Toxicity (Oral) Category 4, Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2, Carcinogenicity Category 2, Specific Target Organ Toxicity - Single Exposure Category 2, Specific Target Organ Toxicity - Repeated Exposure Category 2, Hazardous to the Aquatic Environment Acute Hazard Category 1, Hazardous to the Aquatic Environment Long-Term Hazard Category 1, Hazardous to Soil Organisms, Hazardous to Terrestrial Vertebrates
Legend:	1. Classified by Chemwatch; 2. Classification drawn from CCID EPA NZ; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI
Determined by Chemwatch using GHS/HSNO criteria	2.1.2A, 6.1D (oral), 6.3A, 6.4A, 6.7B, 6.9B, 9.1A, 9.2C, 9.3B

Label elements

Hazard pictogram(s)	   
Signal word	Danger

Hazard statement(s)

H222+H229	Extremely flammable aerosol. Pressurized container: may burst if heated.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H351	Suspected of causing cancer.
H371	May cause damage to organs.
H373	May cause damage to organs through prolonged or repeated exposure.
H410	Very toxic to aquatic life with long lasting effects.
H423	Hazardous to soil organisms.
H432	Hazardous to terrestrial vertebrates.

Precautionary statement(s) Prevention

P201	Obtain special instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211	Do not spray on an open flame or other ignition source.
P251	Do not pierce or burn, even after use.

Precautionary statement(s) Response

P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P311	IF exposed or concerned: Call a POISON CENTER/doctor/physician/first aider.
P314	Get medical advice/attention if you feel unwell.
P337+P313	If eye irritation persists: Get medical advice/attention.

Precautionary statement(s) Storage

P405	Store locked up.
P410+P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.
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SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
127-18-4	20-40	<u>perchloroethylene</u>
75-09-2	5-20	<u>methylene chloride</u>
142-82-5	20-40	<u>heptane</u>
124-38-9	1-9	<u>carbon dioxide</u>
Not Available		NOTE: Manufacturer has supplied full ingredient
Not Available		information to allow CHEMWATCH assessment.

Legend: 1. Classified by Chemwatch; 2. Classification drawn from CCID EPA NZ; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 4. Classification drawn from C&L; * EU IOELVs available

SECTION 4 First aid measures

Description of first aid measures

Eye Contact	If aerosols come in contact with the eyes: ▶ Immediately hold the eyelids apart and flush the eye continuously for at least 15 minutes with fresh running water. ▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▶ Transport to hospital or doctor without delay. ▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If solids or aerosol mists are deposited upon the skin: ▶ Flush skin and hair with running water (and soap if available). ▶ Remove any adhering solids with industrial skin cleansing cream. ▶ DO NOT use solvents. ▶ Seek medical attention in the event of irritation.
Inhalation	If aerosols, fumes or combustion products are inhaled: ▶ Remove to fresh air. ▶ Lay patient down. Keep warm and rested. ▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▶ If breathing is shallow or has stopped, ensure clear airway and apply resuscitation, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▶ Transport to hospital, or doctor.
Ingestion	▶ Avoid giving milk or oils. ▶ Avoid giving alcohol. Not considered a normal route of entry. If poisoning occurs, contact a doctor or Poisons Information Centre.

Indication of any immediate medical attention and special treatment needed

For acute or short term repeated exposures to petroleum distillates or related hydrocarbons:

- ▶ Primary threat to life, from pure petroleum distillate ingestion and/or inhalation, is respiratory failure.
- ▶ Patients should be quickly evaluated for signs of respiratory distress (e.g. cyanosis, tachypnoea, intercostal retraction, obtundation) and given oxygen. Patients with inadequate tidal volumes or poor arterial blood gases (pO₂ 50 mm Hg) should be intubated.
- ▶ Arrhythmias complicate some hydrocarbon ingestion and/or inhalation and electrocardiographic evidence of myocardial injury has been reported; intravenous lines and cardiac monitors should be established in obviously symptomatic patients. The lungs excrete inhaled solvents, so that hyperventilation improves clearance.
- ▶ A chest x-ray should be taken immediately after stabilisation of breathing and circulation to document aspiration and detect the presence of pneumothorax.
- ▶ Epinephrine (adrenalin) is not recommended for treatment of bronchospasm because of potential myocardial sensitisation to catecholamines. Inhaled cardioselective bronchodilators (e.g. Alupent, Salbutamol) are the preferred agents, with aminophylline a second choice.
- ▶ Lavage is indicated in patients who require decontamination; ensure use of cuffed endotracheal tube in adult patients. [Ellenhorn and Barceloux: Medical Toxicology]

for intoxication due to Freons/ Halons;

A: Emergency and Supportive Measures

- ▶ Maintain an open airway and assist ventilation if necessary
- ▶ Treat coma and arrhythmias if they occur. Avoid (adrenaline) epinephrine or other sympathomimetic amines that may precipitate ventricular arrhythmias. Tachyarrhythmias caused by increased myocardial sensitisation may be treated with propranolol, 1-2 mg IV or esmolol 25-100 microgm/kg/min IV.
- ▶ Monitor the ECG for 4-6 hours

B: Specific drugs and antidotes:

- ▶ There is no specific antidote

C: Decontamination

- ▶ Inhalation; remove victim from exposure, and give supplemental oxygen if available.
- ▶ Ingestion; (a) Prehospital: Administer activated charcoal, if available. **DO NOT** induce vomiting because of rapid absorption and the risk of abrupt onset CNS depression. (b) Hospital: Administer activated charcoal, although the efficacy of charcoal is unknown. Perform gastric lavage only if the ingestion was very large and recent (less than 30 minutes)

D: Enhanced elimination:

- ▶ There is no documented efficacy for diuresis, haemodialysis, haemoperfusion, or repeat-dose charcoal.

POISONING and DRUG OVERDOSE, Californian Poison Control System Ed. Kent R Olson; 3rd Edition

- ▶ Do not administer sympathomimetic drugs unless absolutely necessary as material may increase myocardial irritability.
- ▶ No specific antidote.
- ▶ Because rapid absorption may occur through lungs if aspirated and cause systematic effects, the decision of whether to induce vomiting or not should be made by an attending physician.
- ▶ If lavage is performed, suggest endotracheal and/or esophageal control.
- ▶ Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach.
- ▶ Treatment based on judgment of the physician in response to reactions of the patient

Treat symptomatically.

For acute or short term repeated exposures to perchloroethylene:

- ▶ Tetrachloroethylene / perchloroethylene is well absorbed through the lungs with peak levels more important than duration in determining blood concentration. Lungs excrete most of the absorbed tetrachloroethylene in an unchanged state; about 3% is converted by the liver to form trichloroacetic acid and subsequently excreted by the kidney. Exhaled material has a biological half-life of 65 hours.

INHALATION:

- ▶ The treatment of acute inhalation exposures is supportive with initial attention directed to evaluation / support of ventilation and circulation. As with all hydrocarbons care must be taken to reduce the risk of aspiration by proper positioning and medical observation.

INGESTION:

- ▶ The ingestion level at which emesis should be induced is difficult to predict in the absence of extensive human studies.
- ▶ The role of charcoal and cathartics remains uncertain.

[Ellenhorn and Barceloux: Medical Toxicology]

BIOLOGICAL EXPOSURE INDEX - BEI

These represent the determinants observed in specimens collected from a healthy worker who has been exposed at the Exposure Standard (ES or TLV):

Determinant	Index	Sampling Time	Comments
1. Perchloroethylene in end-exhaled air	10 ppm	Prior to last shift of work-week	
2. Perchloroethylene in blood	1 mg/L	Prior to last shift of work-week	
3. Trichloroacetic acid in urine	7 mg/L	End of work-week	NS, SQ

NS: Non-specific determinant; also seen after exposure to other materials

SQ: Semi-quantitative determinant - Interpretation may be ambiguous; should be used as a screening test or confirmatory test.

SECTION 5 Firefighting measures

Extinguishing media

SMALL FIRE:

- Water spray, dry chemical or CO2

LARGE FIRE:

- Water spray or fog.

Special hazards arising from the substrate or mixture

Fire Incompatibility	▸ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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Advice for firefighters

Fire Fighting	▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ May be violently or explosively reactive. ▸ Wear breathing apparatus plus protective gloves. ▸ Prevent, by any means available, spillage from entering drains or water course.
Fire/Explosion Hazard	▸ Liquid and vapour are highly flammable. ▸ Severe fire hazard when exposed to heat or flame. ▸ Vapour forms an explosive mixture with air. ▸ Severe explosion hazard, in the form of vapour, when exposed to flame or spark. Combustion products include: carbon dioxide (CO2) hydrogen chloride phosgene other pyrolysis products typical of burning organic material. Contains low boiling substance: Closed containers may rupture due to pressure buildup under fire conditions. May emit clouds of acrid smoke

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	▸ Clean up all spills immediately. ▸ Avoid breathing vapours and contact with skin and eyes. ▸ Wear protective clothing, impervious gloves and safety glasses. ▸ Shut off all possible sources of ignition and increase ventilation.
Major Spills	▸ Clear area of personnel and move upwind. ▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ May be violently or explosively reactive. ▸ Wear breathing apparatus plus protective gloves.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	▸ Avoid all personal contact, including inhalation. ▸ Wear protective clothing when risk of exposure occurs. ▸ Use in a well-ventilated area. ▸ Prevent concentration in hollows and sumps.
Other information	▸ Store below 38 deg. C. ▸ Keep dry to avoid corrosion of cans. Corrosion may result in container perforation and internal pressure may eject contents of can ▸ Store in original containers in approved flammable liquid storage area.

- ▶ **DO NOT** store in pits, depressions, basements or areas where vapours may be trapped.
- ▶ No smoking, naked lights, heat or ignition sources.
- ▶ Keep containers securely sealed.

Conditions for safe storage, including any incompatibilities

Suitable container	▶ DO NOT use aluminium or galvanised containers ▶ Aerosol dispenser. ▶ Check that containers are clearly labelled.
Storage incompatibility	▶ Haloalkenes are highly reactive. ▶ Some of the more lightly substituted lower members are highly flammable; many members of the group are peroxidisable and polymerisable. ▶ Avoid reaction or contact with potassium or its alloys - although apparently stable on contact with a wide range of halocarbons, reaction products may be shock-sensitive and may explode with great violence on light impact. Severity generally increases with the degree of halocarbon substitution and potassium-sodium alloys give extremely sensitive mixtures. Tetrachloroethylene: ▶ decomposes slowly in contact with water or moisture forming trichloroacetic acid and hydrochloric acid ▶ reacts violently with concentrated nitric acid (producing carbon dioxide), strong oxidisers, strong alkalis, powdered chemically active metals such as aluminium, barium, beryllium, lithium, zinc ▶ is incompatible with nitrogen tetroxide, finely divided metals ▶ decomposes in UV light, on contact with red-hot metals, and at temperatures above 150 C, releasing hydrogen chloride, carbon monoxide and phosgene ▶ corrodes metals in the presence of moisture ▶ can oxidise in presence of air and light. The presence of 0.5% trichloroethylene as an impurity caused generation of dichloroacetylene during unheated drying over solid sodium hydroxide. Subsequent fractional distillation produced an explosion. ▶ Segregate from alcohol, water.

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
New Zealand Workplace Exposure Standards (WES)	perchloroethylene	Perchloroethylene (Tetrachloroethylene)	20 ppm / 136 mg/m3	271 mg/m3 / 40 ppm	Not Available	carcinogen category 1 - Known or presumed human carcinogen (skin) - Skin absorption
New Zealand Workplace Exposure Standards (WES)	methylene chloride	Dichloromethane (Methylene chloride)	50 ppm / 174 mg/m3	Not Available	Not Available	carcinogen category 2 - Suspected human carcinogen
New Zealand Workplace Exposure Standards (WES)	heptane	Heptane (n-Heptane)	400 ppm / 1640 mg/m3	2050 mg/m3 / 500 ppm	Not Available	oto - Ototoxin
New Zealand Workplace Exposure Standards (WES)	carbon dioxide	Carbon dioxide	5000 ppm / 9000 mg/m3	54000 mg/m3 / 30000 ppm	Not Available	Not Available

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
perchloroethylene	Not Available	Not Available	Not Available
methylene chloride	Not Available	Not Available	Not Available
heptane	500 ppm	830 ppm	5000* ppm

Ingredient	Original IDLH	Revised IDLH
perchloroethylene	150 ppm	Not Available
methylene chloride	2,300 ppm	Not Available
heptane	750 ppm	Not Available
carbon dioxide	40,000 ppm	Not Available

Exposure controls

Appropriate engineering controls	CARE: Use of a quantity of this material in confined space or poorly ventilated area, where rapid build up of concentrated atmosphere may occur, could require increased ventilation and/or protective gear Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are:
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	Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.
Individual protection measures, such as personal protective equipment	
Eye and face protection	No special equipment for minor exposure i.e. when handling small quantities. OTHERWISE: For potentially moderate or heavy exposures: ▸ Safety glasses with side shields. ▸ NOTE: Contact lenses pose a special hazard; soft lenses may absorb irritants and ALL lenses concentrate them.
Skin protection	See Hand protection below
Hands/feet protection	The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice. Personal hygiene is a key element of effective hand care. ▸ Neoprene rubber gloves ▸ No special equipment needed when handling small quantities. ▸ OTHERWISE: ▸ For potentially moderate exposures: ▸ Wear general protective gloves, eg. light weight rubber gloves. ▸ For potentially heavy exposures: ▸ Wear chemical protective gloves, eg. PVC. and safety footwear.
Body protection	See Other protection below
Other protection	▸ The clothing worn by process operators insulated from earth may develop static charges far higher (up to 100 times) than the minimum ignition energies for various flammable gas-air mixtures. This holds true for a wide range of clothing materials including cotton. ▸ Avoid dangerous levels of charge by ensuring a low resistivity of the surface material worn outermost. BREThERICK: Handbook of Reactive Chemical Hazards. ▸ Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity. ▸ For large scale or continuous use wear tight-weave non-static clothing (no metallic fasteners, cuffs or pockets). ▸ Non sparking safety or conductive footwear should be considered. Conductive footwear describes a boot or shoe with a sole made from a conductive compound chemically bound to the bottom components, for permanent control to electrically ground the foot and shall dissipate static electricity from the body to reduce the possibility of ignition of volatile compounds. No special equipment needed when handling small quantities. OTHERWISE: ▸ Overalls. ▸ Skin cleansing cream. ▸ Eyewash unit.

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

"Forsberg Clothing Performance Index".

The effect(s) of the following substance(s) are taken into account in the **computer-generated** selection:

Brakleen Aerosol

Material	CPI
BUTYL	C
CPE	C
HYPALON	C
NATURAL RUBBER	C
NEOPRENE	C
NITRILE	C
NITRILE+PVC	C
PE/EVAL/PE	C
PVA	C
PVC	C
SARANEX-23	C
SARANEX-23 2-PLY	C
TEFLON	C
VITON	C
VITON/BUTYL	C

Respiratory protection

Type AX Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required. Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	AX-AUS	-	AX-PAPR-AUS / Class 1
up to 50 x ES	-	AX-AUS / Class 1	-
up to 100 x ES	-	AX-2	AX-PAPR-2 ^

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO₂), G = Agricultural chemicals, K = Ammonia(NH₃), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations,

VITON/CHLOROBUTYL	C
VITON/NITRILE	C

* CPI - Chemwatch Performance Index
A: Best Selection
B: Satisfactory; may degrade after 4 hours continuous immersion
C: Poor to Dangerous Choice for other than short term immersion
NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -
* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

- only restricted use of cartridge respirators is considered appropriate.
- ▶ Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used
 - ▶ Positive pressure, full face, air-supplied breathing apparatus should be used for work in enclosed spaces if a leak is suspected or the primary containment is to be opened (e.g. for a cylinder change)
 - ▶ Air-supplied breathing apparatus is required where release of gas from primary containment is either suspected or demonstrated.

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Clear, water white, flammable liquid with ethereal odour; not miscible with water. Supplied as an aerosol pack. Contents under PRESSURE. Contains carbon dioxide propellant.		
Physical state	Liquid	Relative density (Water = 1)	1.07
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	Not Applicable	Decomposition temperature (°C)	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	40 initial	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	10	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	HIGHLY FLAMMABLE.	Oxidising properties	Not Available
Upper Explosive Limit (%)	22	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	1.4	Volatile Component (%vol)	100
Vapour pressure (kPa)	26.6 @ 20 C	Gas group	Not Available
Solubility in water	Immiscible	pH as a solution (1%)	Not Applicable
Vapour density (Air = 1)	>1	VOC g/L	Not Available

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	▶ Elevated temperatures. ▶ Presence of open flame. ▶ Product is considered stable. ▶ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled	Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo. Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual. There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.
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	Inhalation hazard is increased at higher temperatures. Inhalation of high concentrations of gas/vapour causes lung irritation with coughing and nausea, central nervous depression with headache and dizziness, slowing of reflexes, fatigue and inco-ordination. Central nervous system (CNS) depression may include general discomfort, symptoms of giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech and may progress to unconsciousness. Serious poisonings may result in respiratory depression and may be fatal. Inhalation, by humans, of 1000 parts per million (0.1%) heptanes for 6 minutes was associated with slight dizziness; inhalation of higher concentrations for shorter periods, resulted in vertigo and inco-ordination, and hilarity. Central nervous system involvement occurs very early, even before mucous membrane irritation. Animal testing showed exposure to 1.5-2% for 30 minutes may be fatal. Brief exposure (4 minutes) to 0.5% caused nausea, loss of appetite, and a "gasoline taste" that persisted for several hours after exposure ended. Acute intoxication by halogenated aliphatic hydrocarbons appears to take place over two stages. Signs of a reversible narcosis are evident in the first stage and in the second stage signs of injury to organs may become evident, a single organ alone is (almost) never involved. Depression of the central nervous system is the most outstanding effect of most halogenated aliphatic hydrocarbons. Inebriation and excitation, passing into narcosis, is a typical reaction. In severe acute exposures there is always a danger of death from respiratory failure or cardiac arrest due to a tendency to make the heart more susceptible to catecholamines (adrenalin) Material is highly volatile and may quickly form a concentrated atmosphere in confined or unventilated areas. The vapour may displace and replace air in breathing zone, acting as a simple asphyxiant. This may happen with little warning of overexposure. WARNING: Intentional misuse by concentrating/inhaling contents may be lethal. Exposure to high levels of tetrachloroethylene by oral or inhalation may cause dose dependent light-headedness, mood and behavioural changes, seizure, unconsciousness, abnormal bilirubin level, liver and kidney damage in workers. Sudden death may result from anaesthetic doses probably due to depression of the respiratory centre or heart dysfunction. Human studies showed dose dependent neurologic symptoms. It may cause irritation of the eyes, airways and skin. Anaesthetics and narcotic effects (with dulling of senses and odour fatigue) are a consequence of exposure to chlorinated solvents. Individual response varies widely; odour may not be considered objectionable at levels which quickly induce central nervous system effects. High vapour concentrations may give a feeling of euphoria. This may result in reduced responses, followed by rapid onset of unconsciousness, possible respiratory arrest and death.
Ingestion	Swallowing of the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis; serious consequences may result. (ICSC13733) Accidental ingestion of the material may be damaging to the health of the individual. When tetrachloroethylene is used in the treatment of hookworm (4.5 to 6.5 gm orally) the only adverse effect is a drunken-like state. Transient liver toxicity in patients given single oral doses of up to 5 ml had been recorded.
Skin Contact	Skin contact with the material may damage the health of the individual; systemic effects may result following absorption. There is some evidence to suggest that the material may cause significant and severe inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterised by redness, swelling and blistering. Spray mist may produce discomfort Fluorocarbons remove natural oils from the skin, causing irritation, dryness and sensitivity. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected. Industrial experience shows that exposure to tetrachloroethylene produces localised skin irritation while prolonged skin contact can cause chemical burns and blistering. Absorption by skin may readily exceed vapour inhalation exposure. Symptoms for skin absorption are the same as for inhalation.
Eye	Limited evidence or practical experience suggests, that the material may cause eye irritation in a substantial number of individuals. Prolonged eye contact may cause inflammation characterised by a temporary redness of the conjunctiva (similar to windburn). Not considered to be a risk because of the extreme volatility of the gas. Irritation of the eyes may produce a heavy secretion of tears (lachrymation). Exposure to high concentrations of tetrachloroethylene vapour causes mild to severe eye irritation, burning or stinging sensations depending on the dose and duration of exposure. Colour vision has equally being reported which is attributed to neurological rather than a direct effect on the eyes.
Chronic	There has been concern that this material can cause cancer or mutations, but there is not enough data to make an assessment. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. There is some evidence from animal testing that exposure to this material may result in reduced fertility. There is some evidence from animal testing that exposure to this material may result in toxic effects to the unborn baby. Main route of exposure to the gas in the workplace is by inhalation. Exposure to tetrachloroethylene noted in dry cleaners causes menstrual disorder and miscarriage, liver dysfunction, headache and dizziness. Studies done showed high mortality rate resulting from cancers of the lung, cervix, gullet, kidney, skin, lymph/blood system, and colon in dry cleaners and laundry workers. Liver cancer was detected in females but none in male laundry and dry cleaners. However, there is not sufficient statistical data to make an absolute conclusion. The reactivity of an epoxide intermediate may be the reason for the cancer-causing properties of halogenated oxiranes. It is reported that 1,1-dichloroethyne, vinyl chloride, trichloroethylene, tetrachloroethylene and chloroprene all cause cancer. Generally speaking, substances with one halogen substitution show higher potential to cause cancer compared to substances with two.

Brakleen Aerosol	TOXICITY	IRRITATION
	Not Available	Not Available
perchloroethylene	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >10000 mg/kg ^[1]	Eye (rabbit): 162 mg -mild

	Inhalation(Mouse) LC50: 35 mg/l4h ^[2]	Eye: adverse effect observed (irritating) ^[1]
	Oral (Rat) LD50: 2629 mg/kg ^[2]	Skin (rabbit): 810 mg/24h -SEVERE
		Skin: adverse effect observed (irritating) ^[1]
		Skin: no adverse effect observed (not irritating) ^[1]
methylene chloride	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg ^[2]	Eye(rabbit): 162 mg - moderate
	Inhalation(Rat) LC50: 76 mg/L4h ^[2]	Eye(rabbit): 500 mg/24hr - mild
	Oral (Rat) LD50: 1600 mg/kg ^[2]	Skin (rabbit): 100mg/24hr-moderate
heptane		Skin (rabbit): 810 mg/24hr-SEVERE
	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >2000 mg/kg ^[1]	Eye: no adverse effect observed (not irritating) ^[1]
	Inhalation(Rat) LC50: >29.29 mg/l4h ^[1]	Skin: no adverse effect observed (not irritating) ^[1]
carbon dioxide	Oral (Rat) LD50: >5000 mg/kg ^[1]	
	TOXICITY	IRRITATION
	Not Available	Not Available
Legend:	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

PERCHLOROETHYLENE	Disinfection byproducts (DBPs) are formed when disinfectants such as chlorine, chloramines and ozone react with organic and inorganic matter in water. Animal studies have shown that some DBPs cause cancer. To date, several hundred DBPs have been identified. Numerous haloalkanes and haloalkenes have been tested for cancer-causing and mutation-causing activities. In general, the potential to cause genetic toxicity is dependent on the nature, number and position of halogen(s) and the size of the molecule. The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
METHYLENE CHLORIDE	Inhalation (human) TCLo: 500 ppm/ 1 y - I Eye(rabbit): 10 mg - mild The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
PERCHLOROETHYLENE & METHYLENE CHLORIDE	The material may cause severe skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. Repeated exposures may produce severe ulceration. WARNING: This substance has been classified by the IARC as Group 2A: Probably Carcinogenic to Humans.

Acute Toxicity	✓	Carcinogenicity	✓
Skin Irritation/Corrosion	✓	Reproductivity	✗
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	✓
Respiratory or Skin sensitisation	✗	STOT - Repeated Exposure	✓
Mutagenicity	✗	Aspiration Hazard	✗

Legend: ✗ – Data either not available or does not fill the criteria for classification
✓ – Data available to make classification

SECTION 12 Ecological information

Toxicity

Brakleen Aerosol	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
perchloroethylene	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	72h	Algae or other aquatic plants	~0.2mg/l	4
	EC50(ECx)	24h	Crustacea	3.2mg/l	1
	EC50	96h	Algae or other aquatic plants	500mg/l	1
	BCF	1344h	Fish	25.8-77.1	7
	LC50	96h	Fish	>3<6mg/l	4
	EC50	48h	Crustacea	22mg/l	1

methylene chloride	Endpoint	Test Duration (hr)	Species	Value	Source
	BCF	1008h	Fish	2-5.4	7
	EC50(ECx)	96h	Algae or other aquatic plants	0.98mg/l	4
	EC50	96h	Algae or other aquatic plants	0.98mg/l	4
	EC50	72h	Algae or other aquatic plants	202-286mg/l	4
	LC50	96h	Fish	2-3.3mg/l	4
	EC50	48h	Crustacea	108.5mg/l	1
heptane	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96h	Fish	375mg/l	4
	EC50	48h	Crustacea	0.64mg/l	2
	NOEC(ECx)	504h	Crustacea	0.17mg/l	2
carbon dioxide	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96h	Fish	35mg/l	1
Legend: <i>Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data</i>					

Substances containing unsaturated carbons are ubiquitous in indoor environments. They result from many sources (see below). Most are reactive with environmental ozone and many produce stable products which are thought to adversely affect human health. The potential for surfaces in an enclosed space to facilitate reactions should be considered.

Source of unsaturated substances Unsaturated substances (Reactive Emissions) Major Stable Products produced following reaction with ozone.

For Haloalkanes:

Atmospheric Fate: Fully, or partially, fluorinated haloalkanes released to the air can restrict heat loss from the Earth's atmosphere by absorbing infrared emissions from the surface. The major fate of haloalkanes in the atmosphere is via breakdown by hydroxyl radicals. These substances react with atmospheric ozone and nitrates, which also causes them to change, (transform). Chlorofluorocarbons, (CFC), haloalkanes can break down into chlorine atoms in the air, which also contribute to ozone destruction.

For n-Heptane: Log Kow: 4.66; Koc: 2400-8100; Half-life (hr) Air: 52.8; Half-life (hr) Surface Water: 2.9-312; Henry's atm m3 /mol: 2.06; BOD 5 (if unstated): 1.92; COD: 0.06; BCF: 340-2000; Log BCF: 2.53-3.31.

Atmospheric Fate: Breakdown of n-heptane by sunlight is not expected to be an important fate process. If released to the atmosphere, n-heptane is expected to exist entirely in the vapor phase, in ambient air. Reactions hydroxyl radicals in the atmosphere have been shown to be important.

For Tetrachloroethylene (Synonym: Perchloroethylene): log Koc: 2.38 - 2.9. 7; Koc: 209 – 1685; Half-life (hr) H2O surface water: 26.4-2664; Henry's atm m3 /mol: 1.49E-02; BOD 5: 0.06; COD: 0.39; BCF: 38.9-226; Log BCF: 1.59.

Atmospheric Fate: Long-range global transport of tetrachloroethylene is likely. Dry deposition does not appear to be a significant removal process, although substantial evaporation from dry surfaces can be predicted.

DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
perchloroethylene	HIGH (Half-life = 720 days)	MEDIUM (Half-life = 160.13 days)
methylene chloride	LOW (Half-life = 56 days)	HIGH (Half-life = 191 days)
heptane	LOW	LOW
carbon dioxide	LOW	LOW

Bioaccumulative potential

Ingredient	Bioaccumulation
perchloroethylene	LOW (BCF = 77.1)
methylene chloride	LOW (BCF = 40)
heptane	HIGH (LogKOW = 4.66)
carbon dioxide	LOW (LogKOW = 0.83)

Mobility in soil

Ingredient	Mobility
perchloroethylene	LOW (KOC = 106.8)
methylene chloride	LOW (KOC = 23.74)
heptane	LOW (KOC = 274.7)
carbon dioxide	HIGH (KOC = 1.498)

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. A Hierarchy of Controls seems to be common - the user should investigate: ▸ Reduction ▸ Reuse ▸ Recycling ▸ Disposal (if all else fails) This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. ▸ DO NOT allow wash water from cleaning or process equipment to enter drains. ▸ It may be necessary to collect all wash water for treatment before disposal. ▸ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▸ Where in doubt contact the responsible authority. ▸ Consult State Land Waste Management Authority for disposal. ▸ Discharge contents of damaged aerosol cans at an approved site. ▸ Allow small quantities to evaporate. ▸ DO NOT incinerate or puncture aerosol cans.
------------------------------	---

Ensure that the hazardous substance is disposed in accordance with the Hazardous Substances (Disposal) Notice 2017

Disposal Requirements

Packages that have been in direct contact with the hazardous substance must be only disposed if the hazardous substance was appropriately removed and cleaned out from the package. The package must be disposed according to the manufacturer's directions taking into account the material it is made of. Packages which hazardous content have been appropriately treated and removed may be recycled.

The hazardous substance must only be disposed if it has been treated by a method that changed the characteristics or composition of the substance and it is no longer hazardous.

SECTION 14 Transport information

Labels Required

	
Marine Pollutant	
HAZCHEM	Not Applicable

Land transport (UN)

UN number or ID number	1950	
UN proper shipping name	AEROSOLS	
Transport hazard class(es)	Class	2.1
	Subsidiary risk	Not Applicable
Packing group	Not Applicable	
Environmental hazard	Environmentally hazardous	
Special precautions for user	Special provisions	63; 190; 277; 327; 344; 381
	Limited quantity	1000ml

Air transport (ICAO-IATA / DGR)

UN number	1950	
UN proper shipping name	Aerosols, flammable	
Transport hazard class(es)	ICAO/IATA Class	2.1
	ICAO / IATA Subrisk	Not Applicable
	ERG Code	10L
Packing group	Not Applicable	
Environmental hazard	Environmentally hazardous	
Special precautions for user	Special provisions	A145 A167 A802
	Cargo Only Packing Instructions	203

	Cargo Only Maximum Qty / Pack	150 kg
	Passenger and Cargo Packing Instructions	203
	Passenger and Cargo Maximum Qty / Pack	75 kg
	Passenger and Cargo Limited Quantity Packing Instructions	Y203
	Passenger and Cargo Limited Maximum Qty / Pack	30 kg G

Sea transport (IMDG-Code / GGVSee)

UN number	1950	
UN proper shipping name	AEROSOLS	
Transport hazard class(es)	IMDG Class	2.1
	IMDG Subrisk	Not Applicable
Packing group	Not Applicable	
Environmental hazard	Marine Pollutant	
Special precautions for user	EMS Number	F-D, S-U
	Special provisions	63 190 277 327 344 381 959
	Limited Quantities	1000 ml

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
perchloroethylene	Not Available
methylene chloride	Not Available
heptane	Not Available
carbon dioxide	Not Available

Transport in bulk in accordance with the IGC Code

Product name	Ship Type
perchloroethylene	Not Available
methylene chloride	Not Available
heptane	Not Available
carbon dioxide	Not Available

SECTION 15 Regulatory information

Safety, health and environmental regulations / legislation specific for the substance or mixture

This substance is to be managed using the conditions specified in an applicable Group Standard

HSR Number	Group Standard
HSR002517	Aerosols (Flammable, Toxic [6.7]) Group Standard 2017

Please refer to Section 8 of the SDS for any applicable tolerable exposure limit or Section 12 for environmental exposure limit.

perchloroethylene is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2A: Probably carcinogenic to humans
New Zealand Approved Hazardous Substances with controls

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals
New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data
New Zealand Inventory of Chemicals (NZIoC)
New Zealand Workplace Exposure Standards (WES)

methylene chloride is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List	New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs	New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2A: Probably carcinogenic to humans	New Zealand Inventory of Chemicals (NZIoC)
New Zealand Approved Hazardous Substances with controls	New Zealand Workplace Exposure Standards (WES)

heptane is found on the following regulatory lists

New Zealand Approved Hazardous Substances with controls	New Zealand Inventory of Chemicals (NZIoC)
New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals	New Zealand Workplace Exposure Standards (WES)
New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data	

carbon dioxide is found on the following regulatory lists

FEI Equine Prohibited Substances List - Controlled Medication	New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data
FEI Equine Prohibited Substances List (EPSL)	New Zealand Inventory of Chemicals (NZIoC)
New Zealand Approved Hazardous Substances with controls	New Zealand Workplace Exposure Standards (WES)
New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals	

Hazardous Substance Location

Subject to the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Hazard Class	Quantity (Closed Containers)	Quantity (Open Containers)
2.1.2A	3 000 L (aggregate water capacity)	3 000 L (aggregate water capacity)

Certified Handler

Subject to Part 4 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Class of substance	Quantities
Not Applicable	Not Applicable

Refer Group Standards for further information

Maximum quantities of certain hazardous substances permitted on passenger service vehicles

Subject to Regulation 13.14 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Hazard Class	Gas (aggregate water capacity in mL)	Liquid (L)	Solid (kg)	Maximum quantity per package for each classification
2.1.2A				1L (aggregate water capacity)

Tracking Requirements

Not Applicable

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (perchloroethylene; methylene chloride; heptane; carbon dioxide)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	Yes

National Inventory	Status
Legend:	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

SECTION 16 Other information

Revision Date	10/12/2021
Initial Date	20/02/2001

SDS Version Summary

Version	Date of Update	Sections Updated
9.1	22/04/2021	Hazards identification - Classification, Identification of the substance / mixture and of the company / undertaking - Synonyms, Name
10.1	10/12/2021	Classification change due to full database hazard calculation/update.

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average
PC—STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit,
IDLH: Immediately Dangerous to Life or Health Concentrations
ES: Exposure Standard
OSF: Odour Safety Factor
NOAEL :No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index
AIIC: Australian Inventory of Industrial Chemicals
DSL: Domestic Substances List
NDSL: Non-Domestic Substances List
IECSC: Inventory of Existing Chemical Substance in China
EINECS: European INventory of Existing Commercial chemical Substances
ELINCS: European List of Notified Chemical Substances
NLP: No-Longer Polymers
ENCS: Existing and New Chemical Substances Inventory
KECI: Korea Existing Chemicals Inventory
NZIoC: New Zealand Inventory of Chemicals
PICCS: Philippine Inventory of Chemicals and Chemical Substances
TSCA: Toxic Substances Control Act
TCSI: Taiwan Chemical Substance Inventory
INSQ: Inventario Nacional de Sustancias Químicas
NCI: National Chemical Inventory
FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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TEL (+61 3) 9572 4700.

SAFETY DATA SHEET

According to Safe Work Australia

Printing date 22.06.2021

Revision: 22.06.2021

1. IDENTIFICATION: PRODUCT IDENTIFIER AND CHEMICAL IDENTITY

Product Name: BUTANE GAS CANISTER P/N 2200 (220G)

Other Means of Identification: Mixture

Other Name: Gas Torch Kit P/N 212045 (uses 2200).

Recommended Use of the Chemical and Restriction on Use: Fuel, commercial and industrial applications.

Details of Manufacturer or Importer:

Adventure Trading Australia
71 Charles Ulm Pl
Eagle Farm QLD 4009

Phone Number: 1300 555 197

Emergency telephone number: National Poison Information Centre: 13 11 26

2. HAZARDS IDENTIFICATION

Hazardous Nature:

Classified as Hazardous according to the Globally Harmonised System of Classification and Labelling of Chemicals (GHS) and Safe Work Australia criteria.

Classified as Dangerous Goods according to the Australian Code for the Transport of Dangerous Goods by Road and Rail (7th edition).



flame

Flam. Gas 1 H220 Extremely flammable gas.



gas cylinder

Press. Gas L H280 Contains gas under pressure; may explode if heated.

Signal Word Danger

Hazard Statements

H220 Extremely flammable gas.

H280 Contains gas under pressure; may explode if heated.

Precautionary Statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.

P381 Eliminate all ignition sources if safe to do so.

P410+P403 Protect from sunlight. Store in a well-ventilated place.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical Characterization: Mixtures

Description: Mixture of substances listed below with nonhazardous additions.

Hazardous Components:

106-97-8	Butane	Flam. Gas 1, H220; Press. Gas C, H280	60%
75-28-5	Propane, 2-methyl-	Flam. Gas 1, H220; Press. Gas C, H280	36%
74-98-6	Propane	Flam. Gas 1, H220; Press. Gas C, H280	2%

(Contd. on page 2)

SAFETY DATA SHEET

According to Safe Work Australia

Printing date 22.06.2021

Revision: 22.06.2021

Product Name: BUTANE GAS CANISTER P/N 2200 (220G)

(Contd. of page 1)

4 . FIRST AID MEASURES

Inhalation:

In high concentrations may cause asphyxiation. Symptoms may include loss of mobility and consciousness. Victim may not be aware of asphyxiation. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Seek medical attention if breathing problems develop.

Skin Contact:

Contact with evaporating liquid may cause frostbite or freezing of skin. Thaw frosted parts with lukewarm water. Do not rub affected area. Do not use hot water. Cryogenic (low temperature) burns which result in blistering or deeper tissue freezing should be promptly treated by a physician.

Eye Contact:

In case of eye contact, rinse cautiously with water or saline solution for several minutes until no chemical remains. Remove contact lenses, if present and easy to do. Continue rinsing. Seek medical attention.

Ingestion:

Ingestion is not considered a potential route of exposure. Do not give anything by mouth to an unconscious person. Seek immediate medical attention.

Symptoms Caused by Exposure:

Inhalation: May affect central nervous system and cause headache, dullness, difficulty in breathing, drowsiness, and losing consciousness. In high concentrations may cause asphyxiation. Symptoms may include loss of mobility and consciousness. Victim may not be aware of asphyxiation.

Skin Contact: Contact with evaporating liquid may cause frostbite or freezing of skin, blistering and paralysis.

Eye Contact: May cause frostbite or problem with vision.

Ingestion: Gas ingestion is not likely to occur. However, may cause frostbite on the lips, mouth, and membrane if liquid is swallowed.

5 . FIRE FIGHTING MEASURES

Suitable Extinguishing Media: Carbon dioxide, powder, water spray and water fog.

Specific Hazards Arising from the Chemical:

Flammable gas. Vapours are heavier than air and may travel along the ground and collect in low or confined areas and be exposed to a source of ignition (pilot light, heater, electric motor) some distance away and backfire. Containers may burst or explode if exposed to heat or spark. Low electrical conduction may cause static electricity, and be ignited by a spark.

Shut off gas source and allow the fire to burn itself out. Gas fires should not be extinguished unless the gas flow can be stopped immediately. If gas source cannot be shut off immediately, fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool container with flooding quantities of water until well after fire is out to prevent container from exploding.

Special Protective Equipment and Precautions for Fire Fighters:

When fighting a major fire wear self-contained breathing apparatus and protective equipment.

6 . ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures:

Wear approved self-contained breathing apparatus and full protective clothing. Evacuate all non-essential personnel from affected area. Do not breathe vapours. Ensure adequate ventilation, ventilate the closed place before entering. Extinguish all sources of ignition. Avoid sparks and open flames. No smoking.

Environmental Precautions:

In the event of a major spill, prevent spillage from entering drains or water courses.

(Contd. on page 3)

SAFETY DATA SHEET

According to Safe Work Australia

Printing date 22.06.2021

Revision: 22.06.2021

Product Name: BUTANE GAS CANISTER P/N 2200 (220G)

(Contd. of page 2)

Methods and Materials for Containment and Cleaning Up:

Eliminate all sources of ignition and stop leak if safe to do so. Secure the cylinder and slowly discharge the gas to the atmosphere in a well-ventilated area or outdoors. Vapour can be dispersed with sustained water spray. Use only non-sparking tools.

7 . HANDLING AND STORAGE

Precautions for Safe Handling:

Use of safe work practices are recommended to avoid eye or skin contact and inhalation of vapours or gas. Use in a well-ventilated area since use in the airtight place may cause explosion and suffocation. Take precautionary measures against static discharge.

Food, beverages and tobacco products should not be stored or consumed where this material is in use. Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use. Provide eyewash fountains and safety showers in close proximity to points of potential exposure.

Conditions for Safe Storage:

Store in a cool, dry and well ventilated area. Protect from direct sunlight, heat, sparks, open flames and hot surfaces. Do not expose to temperatures exceeding 40 °C. Close container valve after each use and when empty, even if still connected to equipment. Ground / bond container and receiving equipment. Take precautionary measures against static discharge. Keep away from strong oxidisers, nitric acid, chlorine dioxide, carbonyl nickel and acid. Leave valve protection caps in place until the container has been secured against either a wall or bench or placed in a container stand and is ready for use. Damaged valves should be reported immediately to the supplier

8 . EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Standards:

106-97-8 Butane

NES | TWA: 1900 mg/m³, 800 ppm

68476-85-7 Petroleum gases, liquefied

NES | TWA: 1800 mg/m³, 1000 ppm

Engineering Controls:

Local exhaust and general ventilation are necessary in work area to prevent accumulation of explosive mixtures. Provide special ventilation in sumps and confined spaces. Use explosion-proof ventilating equipment. Gas detectors should be used when quantities of flammable gases or vapours may be released

Respiratory Protection:

Use approved full face supplied air respirator if high airborne concentrations of the material are present. See Australian Standards AS/NZS 1715 and 1716 for more information.

Skin Protection:

Leather, wool or aramid blend gloves. See Australian/New Zealand Standard AS/NZS 2161 for more information.

Occupational protective clothing (depending on conditions in which it has to be used, in particular as regards the period for which it is worn, which shall be determined on the basis of the seriousness of the risk, the frequency of exposure to the risk, the characteristics of the workstation of each worker and the performance of the protective clothing). See Australian/New Zealand Standard AS/NZS 4501 for more information.

Eye and Face Protection:

Eye and face protectors for protection against gas. See Australian/New Zealand Standard AS/NZS 1337.

(Contd. on page 4)

SAFETY DATA SHEET

According to Safe Work Australia

Printing date 22.06.2021

Revision: 22.06.2021

Product Name: BUTANE GAS CANISTER P/N 2200 (220G)

(Contd. of page 3)

9 . PHYSICAL AND CHEMICAL PROPERTIES**Appearance:****Form:** Liquid and vapour**Colour:** Colourless**Odour:** Occasionally smells like rotten garlic, otherwise odourless.**Odour Threshold:** No information available**pH-Value:** Not applicable**Melting point/Melting range:** -138.3 °C (N-Butane)

-160 °C (Iso-Butane)

-187.7 °C (Propane)

Initial Boiling Point/Boiling Range: -0.5 °C (N-Butane)

-11.5 °C (Iso-Butane)

-42.1 °C (Propane)

Flash Point: -73.3 °C (N-Butane)

-88.0 °C (Iso-Butane)

-104.4 °C (Propane)

Flammability: Extremely flammable**Auto-ignition Temperature:** 287 °C (N-Butane)

460 °C (Iso-Butane)

466.1 °C (Propane)

Decomposition Temperature: No information available**Explosion Limits:****Lower:** 1.9 Vol % (N-Butane)

1.8 Vol % (Iso-Butane)

2.2 Vol % (Propane)

Upper: 8.4 Vol % (N-Butane)

8.4 Vol % (Iso-Butane)

9.5 Vol % (Propane)

Vapour Pressure: 0.214MPa @21.1 °C (N-Butane)

0.304MPa @20 °C (Iso-Butane)

0.75MPa @20 °C (Propane)

Density: Not determined.**Relative Density:** 0.549 (water = 1) @20 °C (N-Butane)

0.549 (water = 1) @20 °C (Iso-Butane)

0.501 (water = 1) @20 °C (Propane)

Vapour Density: 2.1 (air = 1) @20 °C (N-Butane)

2.595 (air = 1) @20 °C (Iso-Butane)

1.55 (air = 1) @20 °C (Propane)

Evaporation Rate: 100 %**Solubility in Water:** 3.25ml/100ml@20 °C (N-Butane)

0.007g/100ml@20 °C (Propane)

Partition Coefficient (n-octanol/water): 2.89 as log POW (N-Butane)

2.8 as log POW (Iso-Butane)

2.36 as log POW (Propane)

Viscosity: No information available**VOC:** No information available**10 . STABILITY AND REACTIVITY****Possibility of Hazardous Reactions:**

Can form a potentially explosive atmosphere in air. May react violently with oxidants.

(Contd. on page 5)

SAFETY DATA SHEET

According to Safe Work Australia

Printing date 22.06.2021

Revision: 22.06.2021

Product Name: BUTANE GAS CANISTER P/N 2200 (220G)

(Contd. of page 4)

Chemical Stability: Stable at a normal temperature and pressure.

Conditions to Avoid: Heat, sparks, open flames, hot surfaces, direct sunlight and temperature above 40°C.

Incompatible Materials: Strong oxidisers, nitric acid, chlorine dioxide, carbonyl nickel and acid.

Hazardous Decomposition Products: Oxides of carbon.

11 . TOXICOLOGICAL INFORMATION

Toxicity:

LD₅₀/LC₅₀ Values Relevant for Classification:

106-97-8 Butane

Inhalation	LC ₅₀ /4 h	658 mg/l (rat)
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74-98-6 Propane

Inhalation	LC ₅₀ /4 h	658 mg/l (rat)
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Acute Health Effects

Inhalation:

Simple asphyxiant. May affect central nervous system and cause headache, dullness, difficulty in breathing, drowsiness, and losing consciousness. In high concentrations may cause asphyxiation. Symptoms may include loss of mobility and consciousness. Victim may not be aware of asphyxiation. 19,000ppm concentration may cause immediate danger to life or health.

Skin: Contact with liquid may cause frostbite and blistering.

Eye: Contact with liquid may cause frostbite and loss of eyesight.

Ingestion:

Gas ingestion is not likely to occur. However, may cause frostbite on the lips, mouth, and membrane if liquid is swallowed.

Skin Corrosion / Irritation: Based on classification principles, the classification criteria are not met.

Serious Eye Damage / Irritation: Based on classification principles, the classification criteria are not met.

Respiratory or Skin Sensitisation: Based on classification principles, the classification criteria are not met.

Germ Cell Mutagenicity: Based on classification principles, the classification criteria are not met.

Carcinogenicity: This product does NOT contain any IARC listed chemicals.

Reproductive Toxicity: Based on classification principles, the classification criteria are not met.

Specific Target Organ Toxicity (STOT) - Single Exposure:

Based on classification principles, the classification criteria are not met.

Specific Target Organ Toxicity (STOT) - Repeated Exposure:

Based on classification principles, the classification criteria are not met.

Aspiration Hazard: Based on classification principles, the classification criteria are not met.

Chronic Health Effects: May cause the same symptoms as acute exposure.

Existing Conditions Aggravated by Exposure: No information available

12 . ECOLOGICAL INFORMATION

Ecotoxicity: No information available

Aquatic toxicity: No information available

Persistence and Degradability: No information available

(Contd. on page 6)

SAFETY DATA SHEET

According to Safe Work Australia

Printing date 22.06.2021

Revision: 22.06.2021

Product Name: BUTANE GAS CANISTER P/N 2200 (220G)

(Contd. of page 5)

Bioaccumulative Potential: No information available

Mobility in Soil: No information available

13 . DISPOSAL CONSIDERATIONS

Disposal Methods and Containers: Dispose according to applicable local and state government regulations.

Special Precautions for Landfill or Incineration:

Please consult your state Land Waste Management Authority for more information.

14 . TRANSPORT INFORMATION

UN Number	UN2037
ADG, IMDG, IATA	
Proper Shipping Name	RECEPTACLES, SMALL, CONTAINING GAS (GAS CARTRIDGES) without a release device, non-refillable
ADG, IMDG, IATA	
Dangerous Goods Class	
ADG Class:	2.1
Packing Group:	
ADG, IMDG	Not applicable
IATA	Passanger and Cargo Aircraft - Packaging Instructions Y203 - Max.Net Qty/Pkg 1 kg Cargo Aircraft Only - Packaging Instructions 203 - Max.Net Qty/Pkg 15 kg
Hazchem Code:	2T
Special Provisions:	191, 277, 303
Limited Quantities:	1L
Packagings & IBCs - Packing Instruction:	P003
Packagings & IBCs - Special Packing Provisions:	PP17

15 . REGULATORY INFORMATION

Australian Inventory of Chemical Substances:

106-97-8	Butane
75-28-5	Propane, 2-methyl-
74-98-6	Propane

Standard for the Uniform Scheduling of Drugs and Poisons (SUSMP) - Poison Schedule:

Not Scheduled.

16 . OTHER INFORMATION

Date of Preparation or Last Revision: 22.06.2021

Prepared by: MSDS.COM.AU Pty Ltd

www.msds.com.au

Abbreviations and acronyms:

ADG: Australian Dangerous Goods

IMDG: International Maritime Code for Dangerous Goods

IATA: International Air Transport Association

GHS: Globally Harmonised System of Classification and Labelling of Chemicals

CAS: Chemical Abstracts Service (division of the American Chemical Society)

(Contd. on page 7)

SAFETY DATA SHEET

According to Safe Work Australia

Printing date 22.06.2021

Revision: 22.06.2021

Product Name: BUTANE GAS CANISTER P/N 2200 (220G)

(Contd. of page 6)

VOC: Volatile Organic Compounds

LC₅₀: Lethal concentration, 50 percentLD₅₀: Lethal dose, 50 percent

IARC: International Agency for Research on Cancer

STEL: Short Term Exposure Limit

TWA: Time Weighted Average

NES: National Exposure Standard (Safe Work Australia - Workplace Exposure Standards For Airborne Contaminants)

Flam. Gas 1: Flammable gases, Hazard Category 1

Press. Gas C: Gases under pressure: Compressed gas

Press. Gas L: Gases under pressure: Liquefied gas

Disclaimer

This SDS is prepared in accord with the Safe Work Australia document "Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals - December 2011"

The information contained in this safety data sheet is provided in good faith and is believed to be accurate at the date of issuance. Primus Australia Pty Ltd trading as Companion Brands makes no representation of the accuracy or comprehensiveness of the information and to the full extent allowed by law excludes all liability for any loss or damage related to the supply or use of the information in this material safety data sheet. MSDS.COM.AU Pty Ltd is not in a position to warrant the accuracy of the data herein. The user is cautioned to make their own determinations as to the suitability of the information provided to the particular circumstances in which the product is used.



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SAFETY DATA SHEET

Section 1 – IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: Cable Glide Aerosol 400ml
Product Code: 7344
Uses: Silicone cable pulling lubricant aerosol.
Company: Chemz Limited
Address: 80 Rangitane Place
Whakatu, Hastings
Telephone: +64 6 877 9690
Email: info@chemz.co.nz
Emergency Number 24 hr: 0800 764 766 (0800 POISON) National Poison Centre

Section 2 – HAZARDS IDENTIFICATION

Classification of the product

Considered a hazardous substance according to the Hazardous Substance (Minimum Degrees of Hazard) Regulations NZ.

Classified as a dangerous goods for transport purposes.

GHS Classifications:

Aerosol Category 1

Skin irritation Category 2

STOT (Single exposure) Category 3 (Narcotic)

Aquatic toxicity (chronic) Category 2

HSNO Classifications:

2.1.2A Flammable aerosol

6.3A Irritating to the skin

6.9B Harmful to human target organs or systems (narcotic)

9.1B Ecotoxic in the aquatic environment with long lasting effects (chronic)



Signal Words: Danger

Hazard Statements

H222 Extremely flammable aerosol.
H229 Pressurised container: May burst if heated
H315 Causes skin irritation.
H336 May cause drowsiness or dizziness.
H411 Toxic to aquatic life with long lasting effects.

Section 3 – COMPOSITION INFORMATION ON INGREDIENTS

Hazardous Ingredients	CAS No.	Proportion, % m/m
Heptanes	64742-49-0	30 - 60
Hydrocarbon propellant (LPG - Propane, Butane)	68476-85-7	30 - 60
Non-hazardous ingredients		to 100

Section 4 – FIRST AID MEASURES

If medical advice is needed, have product container or label at hand.



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If exposed or if you feel unwell: Call a POISON CENTRE (0800 764 766) or doctor.

Eye contact:	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice.
Skin contact:	IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice.
Inhalation:	IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTRE or doctor.
Ingestion:	IF SWALLOWED: Call a POISON CENTRE or doctor. Do NOT induce vomiting. Obtain immediate medical attention.
Notes to physician:	Treat symptomatically and supportively. No specific antidote.

Section 5 – FIRE-FIGHTING MEASURES

General fire hazards	Pressurised, extremely flammable aerosol.
Specific hazards:	Containers can build up pressure if exposed to heat and/or fire and may explode. Vapours may form an explosive mixture with air. Vapours can travel to a source of ignition and flash back. May float and be re-ignited on surface water. Will burn if involved in a fire.
Further advice:	On burning may emit toxic fumes including those of carbon monoxide and carbon dioxide. Fire fighters to wear self-contained breathing apparatus if risk of exposure to products of combustion.
Extinguishing media:	For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do not discharge extinguishing waters into the aquatic environment. Do NOT use straight streams of water.
Protective equipment	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Firefighting instructions	In the event of fire, cool containers with water spray to prevent vapour pressure build up. Move containers from fire area if you can do so without risk. Runoff can cause environmental damage.
Hazchem Code:	2YE

Section 6 – ACCIDENTAL RELEASE MEASURES

Minor spills:	Clean up all spills immediately. Provide ventilation. Remove all sources of ignition. If safe, damaged cans should be placed in a container outdoors, away from all ignition sources, until pressure has dissipated. Undamaged cans should be gathered and stowed safely.
Major spills:	Evacuate the spill area. Call the Fire Brigade. Remove all sources of ignition. If safe to do so, prevent spillage from entering drains or water courses. If material enters drains, advise emergency services. Use absorbent (soil, sand or other inert material). Collect and seal in properly labeled containers for disposal.

Section 7 – HANDLING AND STORAGE

Handling Precautions:	Read product label before use. Keep out of reach of children. This product is highly flammable. Keep away from heat and open flames/hot surfaces. No smoking. Do not spray on an open flame or other ignition source. Pressurised container: Do not pierce or burn, even after use. Use in a well-ventilated area. Avoid breathing spray. Wash hands with soap and water after handling.
Storage:	Protect from sunlight. Do not expose to temperatures exceeding 50 °C. Store in a well ventilated, cool, dry place. Keep away from heat, sparks, and flame. Store locked up.

Section 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits:	No value assigned for product. Exposure standards for constituents (NZ WES);
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Material	TWA, mg/m ³	STEL, mg/m ³
Heptanes	1,200	1,600
LPG (Liquefied petroleum gas – butane, propane)	1,800	-

Additional Information:	Wash hands before eating, drinking and smoking.
Engineering Controls:	No controls required when handling small quantities. Use outdoors or with adequate ventilation. Larger quantities: General exhaust is adequate under normal operating conditions. Ventilation equipment and lighting should be explosion-resistant.
Protective Equipment:	Generally not required for small quantities. In an industrial environment: gloves, safety glasses or chemical goggles are recommended. Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. In case of inadequate ventilation wear respiratory protection. If TWA is exceeded, wear an approved respirator with a type A filter.

Section 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Clear colourless oily liquid spray.
pH:	Not applicable.
Vapour Density:	> 1 (Air =1)
Vapour Pressure, kPa:	300 - 600
Boiling Point, °C:	About 80
Melting Point, °C:	Not applicable.
Specific Gravity:	About 0.75
Flash Point, °C:	< 0 (propellant)
Explosion Limit, % v/v:	LEL 1.2% UEL 9.5%
Autoignition Temp, °C:	Not applicable.
Solubility:	Not soluble in water.

Section 10 – STABILITY AND REACTIVITY

Stability:	Stable under normal conditions of use. Not reactive. Avoid oxidisers. Avoid elevated temperatures.
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Section 11 – TOXICOLOGICAL INFORMATION

Basis for Assessment:	Information given is based on product testing, and/or similar products, and/or components.
Acute Oral Toxicity:	LD ₅₀ estimated to be > 5,000 mg/kg (based on component mixture, excluding propellant).
Acute Dermal Toxicity:	LD ₅₀ estimated to be > 5,000 mg/kg (based on component mixture, excluding propellant).
Acute Inhalation Toxicity:	LC ₅₀ estimated to be > 20 mg/L, Rat 4 hour (based on component mixture). Beware: Deliberately sniffing or inhaling concentrated contents can be harmful or fatal.
Skin Irritation:	May cause skin irritation. Prolonged/repeated contact may cause contact dermatitis.
Eye Irritation:	Spray may be irritating to the eye.
Inhalation:	May cause drowsiness or dizziness. Inhalation will cause narcotic effects.
Respiratory Irritation:	Inhalation of vapours or mists may cause irritation to the respiratory system.
Sensitisation:	Product is not expected to be a sensitiser.
Mutagenicity:	Not expected to be mutagenic.



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Carcinogenicity:	Product is not a suspected human carcinogen.
Reproductive toxicity:	Not expected to be toxic.
Specific Target Organ Toxicity:	Not expected to be toxic.
STOT (Narcotic):	Prolonged inhalation of vapours may be narcotic and cause drowsiness or dizziness.
Repeated Dose Toxicity:	Prolonged and repeated contact with product may result in irritant contact dermatitis.
Additional Information:	None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as being carcinogens.

Section 12 – ECOTOXICITY INFORMATION

Ecotoxicity:	Ecotoxic in the aquatic environment with long lasting effects.
Mobility:	Product is partially volatile and large proportion will rapidly evaporate to the air if released into water.
Persistence/degradability:	More volatile components are expected to degrade in air. Some components may be persistent and may bioaccumulate.

Section 13 – DISPOSAL CONSIDERATIONS

Material Disposal:	Product wastes should be disposed of in accordance with applicable regulations. Do not dispose into the environment, in drains or in water courses. Large quantities should be degassed by an aerosol recycler. Do not dispose of large quantities of pressurised aerosols in landfills. Incineration in an authorised facility is suggested.
Container Disposal:	Recycle empty container if possible. Product containers are also considered wastes of the same class of the contents and should be disposed of in accordance with applicable regulations.

Section 14 – TRANSPORT INFORMATION

Transport:	Classified as a Dangerous Good for transport purposes. Class 2.1 should not be loaded on the same vehicle as Classes 1, 3 (where both are in bulk), 4, 5, and 7. They may be loaded with Classes 3, 6, 8, 9, foodstuffs and foodstuff empties.
Proper Shipping Name:	Aerosols
UN Number:	1950
Dangerous Goods Class:	2.1
Subsidiary Risk:	Not applicable
Packing Group:	Not applicable
Transport Labels Required:	Class 2 Flammable (Land, Sea and Air), EHS (Sea and Air)

Land, Sea, Air Sea, Air



Marine Pollutant:	Yes
EMS Number	F-D, S-U (UN 1950 Flammable aerosols)
DG Segregation:	This product is classified as a Dangerous Goods. Please consult the Land Transport Rule: Dangerous Goods 2005, and NZS 5433:2012 Transport of Dangerous Goods on Land for information.



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Section 15 – REGULATORY INFORMATION

Inventory Listing	NZIOC (New Zealand Inventory of Chemicals); All components of this product are listed.
SDS regulations	This Safety Data Sheet was prepared in accordance with the EPA Hazardous Substances (Safety Data Sheets) Notice July 2017.
EPA Approval Number:	HSR002515 Aerosols (Flammable) Group Standard 2020
EPA Hsno Controls:	Refer to www.epa.govt.nz for information on Controls. This substance is to be managed using the conditions specified in an applicable Group Standard.

Section 16 – OTHER INFORMATION

Additional information	Health Effects from Exposure: It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.
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Abbreviations	CAS	Chemical Abstract Service number
	EMS	Emergency Response Procedures for Ships Carrying Dangerous Goods
	EPA	Environmental Protection Agency
	GHS	Globally Harmonized System
	IARC	International Agency for Research on Cancer
	IATA	International Air Transport Association
	IMDG	International Maritime Dangerous Goods
	LC ₅₀	Lethal Concentration, 50% / Median Lethal Concentration
	LD ₅₀	Lethal Dose, 50% / Median Lethal Dose
	LEL	Lower Explosion Limit
	mg/m ³	Milligrams per Cubic Metre
	NZIoC	New Zealand Inventory of Chemicals
	N.O.S.	Not otherwise specified
	OEL	Occupational Exposure Limit
	PEL	Permissible Exposure Limit
	STEL	Short-Term Exposure Limit
	STOT-RE	Specific target organ toxicity (repeated exposure)
	STOT-SE	Specific target organ toxicity (single exposure)
	TLV	Threshold Limit Value
	TWA	Time Weighted Average
	UEL	Upper Explosion Limit

This SDS summarises our best knowledge of the health and safety hazard information. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. Since we cannot control the conditions under which the product may be used, each user must review this SDS in the context of how the user intends to use the product.

End of sds.



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SAFETY DATA SHEET

Section 1 – IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: Circuit Cleaner Aerosol 500ml

Product Code: 7135

Uses: Non-chlorinated universal electrical equipment cleaner aerosol

Company: Chemz Limited

Address: 80 Rangitane Place
Whakatu, Hastings

Telephone: +64 6 877 9690

Email: info@chemz.co.nz

Emergency Number 24 hr: 0800 764 766 (0800 POISON) National Poison Centre

Section 2 – HAZARDS IDENTIFICATION

Classification of the product

Considered a hazardous substance according to the Hazardous Substance (Minimum Degrees of Hazard) Regulations NZ.
Classified as a dangerous goods for transport purposes.

GHS Classifications:

Aerosol Category 1
Eye irritation Category 2
STOT single exposure Category 3 (Narcotic)
Aquatic toxicity (chronic) Category 2

HSNO Classifications:

2.1.2A Flammable aerosol
6.4A Irritating to the eye
6.9B Harmful to human target organs (Narcotic)
9.1B Ecotoxic in the aquatic environment with long lasting effects (chronic)



Signal Words: Danger

Hazard Statements

H222 Extremely flammable aerosol
H229 Pressurised container: May burst if heated
H319 May cause serious eye irritation
H336 May cause drowsiness or dizziness (if inhaled)
H411 Toxic to aquatic life with long lasting effects

Section 3 – COMPOSITION INFORMATION ON INGREDIENTS

Hazardous Ingredients	CAS No.	Proportion, % m/m
2-Propanol	67-63-0	10 - 30
Methoxy Propanol	107-98-2	10 - 30
Heptanes (Paraffinic HC Solvent)	64742-89-8	10 - 30
Aromatic Hydrocarbon	64742-95-6	1 - 10
LPG (butane, propane)	68476-85-7	10 - 30



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Section 4 – FIRST AID MEASURES

If medical advice is needed, have product container or label at hand.

If exposed or if you feel unwell: Call a POISON CENTRE or doctor.

Eye contact:	IF IN EYES: Rinse well with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice.
Inhalation:	IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTRE or doctor.
Skin contact:	IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice.
Ingestion:	Not considered a normal route of entry. IF SWALLOWED: Contact a POISON CENTRE or doctor. Do NOT induce vomiting.
Notes to physician:	Treat symptomatically and supportively. No specific antidote.

Section 5 – FIRE-FIGHTING MEASURES

General fire hazards:	Pressurised container, extremely flammable aerosol.
Specific hazards:	Containers can build up pressure if exposed to heat and/or fire and may explode. Vapours may form an explosive mixture with air. Vapours can travel to a source of ignition and flash back.
Further advice:	On burning may emit toxic fumes including those of carbon monoxide and carbon dioxide. Fire fighters to wear self-contained breathing apparatus if risk of exposure to products of combustion.
Extinguishing media:	Use water spray, fog, or foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do not discharge extinguishing waters into the aquatic environment. Do NOT use straight streams of water.
Protective equipment:	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Fire fighting instructions:	In the event of fire, cool containers with water spray to prevent vapour pressure build up. Move containers from fire area if you can do so without risk. Runoff can cause environmental damage.
Hazchem Code:	2YE

Section 6 – ACCIDENTAL RELEASE MEASURES

Minor spills:	Clean up all spills immediately. Remove all sources of ignition. If safe to do, damaged cans should be placed in a container outdoors, away from all ignition sources, until pressure has dissipated. Undamaged cans should be gathered and stowed safely. Provide ventilation.
Major spills:	Evacuate the spill area. Call the Fire Brigade. Remove all sources of ignition. If safe to do so, prevent spillage from entering drains or water courses. If material enters drains, advise emergency services. Use absorbent (soil, sand or other inert material). Collect and seal in properly labeled containers for disposal.

Section 7 – HANDLING AND STORAGE

Handling Precautions:	Read product label before use. Keep out of reach of children. This product is highly flammable. Keep away from heat and open flames. Do not spray on an open flame or other ignition source. Pressurised container: Do not pierce or burn, even after use. No smoking. Beware: Deliberately sniffing or inhaling concentrated contents can be harmful or fatal. Use outdoors or in a well-ventilated area. Avoid breathing spray or vapours. Wash hands with soap and water after handling.
Storage:	Protect from sunlight. Do not expose to temperatures exceeding 50 °C. Store in a well ventilated, cool, dry place. Keep away from heat, sparks, and flame. Store locked up.



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Section 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits: No value assigned for product. Exposure standards for constituents (NZ WES);

Material	TWA, mg/m ³	STEL, mg/m ³
2-Propanol	983	1,230
Methoxy Propanol	369	150
Heptanes	600	127
Aromatic Hydrocarbon	100	-
Hydrocarbon Propellant (Butane, Propane)	1,800	-

Additional Information: Wash hands before eating, drinking and smoking.

Engineering Controls: No controls generally required when handling small quantities. Use with adequate ventilation.

Larger quantities: General exhaust is adequate under normal operating conditions. Exhaust ventilation should be designed to prevent accumulation and recirculation in the workplace. Ventilation equipment and lighting should be explosion-resistant.

Protective Equipment: Eye protection is recommended. In an industrial environment: chemical protective gloves, safety glasses or chemical goggles are recommended. Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace.

In case of inadequate ventilation, wear respiratory protection. If TWA is exceeded, wear an approved respirator with a type A filter.

Section 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Clear, liquid spray.

pH: Not applicable.

Vapour Density: > 1 (Air =1)

Vapor Pressure, kPa: 300 - 600

Boiling Point, °C: About 70

Melting Point, °C: Not applicable.

Specific Gravity: About 0.8

Flash Point, °C: < 0 (propellant)

Explosion Limit, % v/v: LEL 1.0% UEL 7.0%

Autoignition Temp, °C: > 200

Solubility: Miscible in water.

Section 10 – STABILITY AND REACTIVITY

Stability: Stable under normal conditions of use. Not reactive. Avoid oxidisers. Avoid elevated temperatures.

Section 11 – TOXICOLOGICAL INFORMATION

Basis for Assessment: Information given is based on product testing, and/or similar products, and/or components.

Acute Oral Toxicity: LD₅₀ estimated to be > 5,000 mg/kg (based on component mixture, excluding propellant).

Acute Dermal Toxicity: LD₅₀ estimated to be > 5,000 mg/kg (based on component mixture, excluding propellant).

Acute Inhalation Toxicity: LC₅₀ estimated to be > 20 mg/L, Rat 4 hour (based on component mixture).

Inhalation: Repeated, prolonged exposure to high concentrations may cause drowsiness or dizziness (narcotic).



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Skin Irritation:	May cause slight skin irritation. Avoid contact with skin.
Eye Irritation:	May cause serious eye irritation. Avoid contact with eyes.
Respiratory Irritation:	Inhalation of vapours or mists may cause irritation to the respiratory system.
Sensitisation:	Not expected to be a contact or respiratory sensitiser.
Mutagenicity:	Not expected to be mutagenic.
Carcinogenicity:	Not expected to be carcinogenic.
Reproductive toxicity:	Not expected to damage fertility or the unborn child.
Specific Target Organ Toxicity:	Not expected to be toxic to human target organs or systems.
STOT (Narcotic):	Prolonged inhalation of vapours may be narcotic and cause drowsiness or dizziness.
Repeated Dose Toxicity:	Repeated, prolonged exposure may cause damage to organs (oral).
Additional Information:	None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as being carcinogens.

Section 12 – ECOTOXICITY INFORMATION

Ecotoxicity:	No environmental hazard is anticipated with small volumes of product, provided that it is handled and disposed of with due care and attention. Large volumes are ecotoxic.
Mobility:	Not determined.
Persistence/degradability:	Some components are not readily biodegradable.
Bioaccumulation Potential:	May be bioaccumulative.

Section 13 – DISPOSAL CONSIDERATIONS

Material Disposal:	Product wastes should be disposed of in accordance with applicable regulations. Do not dispose into the environment, in drains or in water courses. Large quantities should be degassed by an aerosol recycler. Do not dispose of large quantities of pressurised aerosols in landfills. Incineration in an authorised facility is suggested.
Container Disposal:	Recycle empty container if possible or dispose in landfill. Product containers are also considered wastes of the same class of the contents and should be disposed of in accordance with applicable regulations.

Section 14 – TRANSPORT INFORMATION

Transport:	Classified as a Dangerous Good for transport purposes. Class 2.1 should not be loaded on the same vehicle as Classes 1, 3 (where both are in bulk), 4, 5, and 7. They may be loaded with Classes 3, 6, 8, 9, foodstuffs and foodstuff empties.
Proper Shipping Name:	Aerosols
UN Number:	1950
Dangerous Goods Class:	2.1
Transport Labels Required:	Class 2 Flammable (Land, Sea and Air) Land, Sea, Air 
Subsidiary Risk:	Not applicable
Packing Group:	Not applicable



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Marine Pollutant:	No
EMS Number	F-D, S-U (UN 1950 Flammable aerosols)
DG Segregation:	This product is classified as a Dangerous Goods. Consult the Land Transport Rule: Dangerous Goods 2005, and NZS 5433:2012 Transport of Dangerous Goods on Land for information.

Section 15 – REGULATORY INFORMATION

Inventory Listing	NZIOC (New Zealand Inventory of Chemicals); All components of this product are listed.
SDS regulations	This Safety Data Sheet was prepared in accordance with the EPA Hazardous Substances (Safety Data Sheets) Notice July 2017.
EPA Approval Number:	HSR002515 Aerosols (Flammable) Group Standard 2020.
EPA Hsno Controls:	Refer to www.epa.govt.nz for information on Controls. This substance is to be managed using the conditions specified in an applicable Group Standard.

Section 16 – OTHER INFORMATION

Additional information	Personal Protective Equipment Guidelines: The recommendation for protective equipment contained is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made. Health Effects from Exposure: It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.	
Abbreviations	CAS	Chemical Abstract Service number
	EMS	Emergency Response Procedures for Ships Carrying Dangerous Goods
	EPA	Environmental Protection Agency
	GHS	Globally Harmonized System
	IARC	International Agency for Research on Cancer
	IATA	International Air Transport Association
	IMDG	International Maritime Dangerous Goods
	LC ₅₀	Lethal Concentration, 50% / Median Lethal Concentration
	LD ₅₀	Lethal Dose, 50% / Median Lethal Dose
	LEL	Lower Explosion Limit
	mg/m ³	Milligrams per Cubic Metre
	NZIOC	New Zealand Inventory of Chemicals
	N.O.S.	Not otherwise specified
	OEL	Occupational Exposure Limit
	PEL	Permissible Exposure Limit
	STEL	Short-Term Exposure Limit
	STOT-RE	Specific target organ toxicity (repeated exposure)
	STOT-SE	Specific target organ toxicity (single exposure)
	TLV	Threshold Limit Value
	TWA	Time Weighted Average
	UEL	Upper Explosion Limit

This SDS summarises our best knowledge of the health and safety hazard information. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. Since we cannot control the conditions under which the product may be used, each user must review this SDS in the context of how the user intends to use the product.

End of sds.



NEW ZEALAND MADE FOR THE TRADE

SAFETY DATA SHEET

Section 1 – IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: Circuit Reviver Aerosol 400ml

Product Code: 7174

Uses: Oil Based Deoxidising & Carbon Removing Cleaner Aerosol

Company: Chemz Limited

Address: 80 Rangitane Place
Whakatu, Hastings

Telephone: +64 6 877 9690

Email: info@chemz.co.nz

Emergency Number 24 hr: 0800 764 766 (0800 POISON) National Poison Centre

Section 2 – HAZARDS IDENTIFICATION

Classification of the product

Considered a hazardous substance according to the Hazardous Substance (Minimum Degrees of Hazard) Regulations NZ.
Classified as a dangerous goods for transport purposes.

GHS Classifications:

Aerosol Category 1
Skin irritation Category 2
Eye irritation Category 2
Specific target organ toxicity single exposure Category 3
Hazardous to the aquatic environment chronic Category 2

HSNO Classifications:

2.1.2A Flammable aerosol
6.3A Irritating to the skin
6.4A Irritating to the eye
6.9B Harmful to human target organs or systems Narcotic
9.1B Ecotoxic in aquatic environment with long lasting effects



Signal Words: Danger

Hazard Statements

H222 Extremely flammable aerosol
H229 Pressurised container: May burst if heated
H315 May cause skin irritation
H319 May cause serious eye irritation
H336 May cause drowsiness or dizziness
H411 Toxic to aquatic life with long lasting effects

Section 3 – COMPOSITION INFORMATION ON INGREDIENTS

Hazardous Ingredients	CAS No.	Proportion, % m/m
Isopropyl Alcohol	67-63-0	30 - 60
Isohexane	64742-49-0	30 - 60
Oleic Acid	112-80-1	< 10
Paraffinic Mineral Oil, Highly Refined	64742-62-7	< 10
LPG (butane, propane)	68476-85-7	10 - 30



NEW ZEALAND MADE FOR THE TRADE

SAFETY DATA SHEET

Section 4 – FIRST AID MEASURES

If medical advice is needed, have product container or label at hand.

If exposed or if you feel unwell: Call a POISON CENTRE or doctor.

Ingestion:	Not considered a normal route of entry. IF SWALLOWED: Immediately call a POISON CENTRE or doctor. Do NOT induce vomiting. Where there is risk of vomiting, lean person forward or place on left side to avoid aspiration of product into lungs. Obtain immediate medical attention.
Eye contact:	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice.
Skin contact:	IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice.
Inhalation:	IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTRE or doctor.
Notes to physician:	Treat symptomatically and supportively. No specific antidote.

Section 5 – FIRE-FIGHTING MEASURES

General fire hazards:	Pressurised container, extremely flammable aerosol.
Specific hazards:	Containers can build up pressure if exposed to heat and/or fire and may explode. Vapours may form an explosive mixture with air. Vapours can travel to a source of ignition and flash back. Contents may float and be re-ignited on surface water.
Further advice:	On burning may emit toxic fumes including those of carbon monoxide and carbon dioxide. Fire fighters to wear self-contained breathing apparatus if risk of exposure to products of combustion.
Extinguishing media:	Use water spray, fog, or foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do not discharge extinguishing waters into the aquatic environment. Do NOT use straight streams of water.
Protective equipment:	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Fire fighting instructions:	In the event of fire, cool containers with water spray to prevent vapour pressure build up. Move containers from fire area if you can do so without risk. Runoff can cause environmental damage.
Hazchem Code:	2YE

Section 6 – ACCIDENTAL RELEASE MEASURES

Minor spills:	Spills may be extremely slippery. Clean up all spills immediately. Remove all sources of ignition. If safe to do, damaged cans should be placed in a container outdoors, away from all ignition sources, until pressure has dissipated. Undamaged cans should be gathered and stowed safely. Provide ventilation. Wash with water.
Major spills:	Evacuate the spill area. Call the Fire Brigade. Remove all sources of ignition. If safe to do so, prevent spillage from entering drains or water courses. If material enters drains, advise emergency services. Use absorbent (soil, sand or other inert material). Collect and seal in properly labeled containers for disposal.

Section 7 – HANDLING AND STORAGE

Handling Precautions:	Read product label before use. Keep out of reach of children. This product is highly flammable. Keep away from heat and open flames. Do not spray on an open flame or other ignition source. Pressurised container: Do not pierce or burn, even after use. No smoking. Beware: Deliberately sniffing or inhaling concentrated contents can be harmful or fatal. Use in a well-ventilated area. Avoid breathing spray. Wash hands with soap and water after handling.
Storage:	Protect from sunlight. Do not expose to temperatures exceeding 50 °C. Store in a well ventilated, cool, dry place. Keep away from heat, sparks, and flame. Store locked up.



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Section 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits: No value assigned for product. Exposure standards for constituents (NZ WES);

Material	TWA, mg/m ³	STEL, mg/m ³
Isopropyl alcohol	983	1,230
Oil Mist, Mineral	5	10
LPG (butane, propane)	1,800	-

Additional Information: Wash hands before eating, drinking and smoking.

Engineering Controls: No controls required when handling small quantities. Use with adequate ventilation.

Larger quantities: General exhaust is adequate under normal operating conditions. Exhaust ventilation should be designed to prevent accumulation and recirculation in the workplace. Ventilation equipment and lighting should be explosion-resistant.

Protective Equipment: General protective gloves are recommended as product may cause an allergenic reaction. In an industrial environment: chemical protective gloves, safety glasses or chemical goggles are recommended. Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace.

In case of inadequate ventilation, wear respiratory protection. If TWA is exceeded, wear an approved respirator with a type A filter.

Section 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Clear light red liquid spray.

pH: Not applicable.

Vapour Density: > 1 (Air =1)

Vapour Pressure, kPa: 300 - 600

Boiling Point, °C: About 80

Melting Point, °C: Not applicable.

Specific Gravity: About 0.7

Flash Point, °C: < 0 (propellant)

Explosion Limit, % v/v: LEL 1.0% UEL 7.0%

Autoignition Temp, °C: > 200

Solubility: Partially soluble in water.

Section 10 – STABILITY AND REACTIVITY

Stability: Stable under normal conditions of use. Not reactive. Avoid oxidisers. Avoid elevated temperatures.

Section 11 – TOXICOLOGICAL INFORMATION

Basis for Assessment: Information given is based on product testing, and/or similar products, and/or components.

Acute Oral Toxicity: LD₅₀ estimated to be > 5,000 mg/kg (based on component mixture, excluding propellant).

Acute Dermal Toxicity: LD₅₀ estimated to be > 2,000 mg/kg (based on component mixture, excluding propellant).

Acute Inhalation Toxicity: LC₅₀ estimated to be > 20 mg/L, Rat 4 hour (based on component mixture). Inhalation of vapours may cause drowsiness (narcotic) and dizziness.

Skin Irritation: Prolonged/repeated contact may cause defatting of the skin and dermatitis. Avoid contact with skin.

Eye Irritation: Spray is irritating to the eye. Expected to be reversible in 7 - 21 days.



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Respiratory Irritation:	Inhalation of vapours or mists may cause irritation to the respiratory system.
Sensitisation:	Not expected to be a respiratory sensitiser.
Repeated Dose Toxicity:	Prolonged contact with product may result in irritant contact dermatitis. Avoid skin contact.
Mutagenicity:	Not expected to be mutagenic.
Carcinogenicity:	Not expected to be carcinogenic.
Reproductive toxicity:	Not expected to be toxic.

Section 12 – ECOTOXICITY INFORMATION

Ecotoxicity:	Ecotoxic in the aquatic environment. No environmental hazard is anticipated with small volumes of product, provided that it is handled and disposed of with due care and attention.
Mobility:	Not determined.
Persistence/degradability:	Inherently biodegradable.
Bioaccumulation Potential:	Bioaccumulation may occur.

Section 13 – DISPOSAL CONSIDERATIONS

Material Disposal:	Product wastes should be disposed of in accordance with applicable regulations. Do not dispose into the environment, in drains or in water courses. Large quantities should be degassed by an aerosol recycler. Do not dispose of large quantities of pressurised aerosols in landfills. Incineration in an authorised facility is suggested.
Container Disposal:	Recycle empty container if possible. Product containers are also considered wastes of the same class of the contents and should be disposed of in accordance with applicable regulations.

Section 14 – TRANSPORT INFORMATION

Transport:	Classified as a Dangerous Good for transport purposes. Class 2.1 should not be loaded on the same vehicle as Classes 1, 3 (where both are in bulk), 4, 5, and 7. They may be loaded with Classes 3, 6, 8, 9, foodstuffs and foodstuff empties.
Proper Shipping Name:	Aerosols
UN Number:	1950
Dangerous Goods Class:	2.1
Transport Labels Required:	Class 2 Flammable (Land, Sea and Air), EHS (Sea and Air) Land, Sea, Air Sea, Air  
Subsidiary Risk:	Not applicable
Packing Group:	Not applicable
Marine Pollutant:	Yes
EMS Number	F-D, S-U (UN 1950 Flammable aerosols)
DG Segregation:	This product is classified as a Dangerous Goods. Consult the Land Transport Rule: Dangerous Goods 2005, and NZS 5433:2012 Transport of Dangerous Goods on Land for information.



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Section 15 – REGULATORY INFORMATION

Inventory Listing	NZIOC (New Zealand Inventory of Chemicals); All components of this product are listed.
SDS regulations	This Safety Data Sheet was prepared in accordance with the EPA Hazardous Substances (Safety Data Sheets) Notice July 2017.
EPA Approval Number:	HSR002515 Aerosols (Flammable) Group Standard 2020.
EPA Hsno Controls:	Refer to www.epa.govt.nz for information on Controls. This substance is to be managed using the conditions specified in an applicable Group Standard.

Section 16 – OTHER INFORMATION

Additional information	Personal Protective Equipment Guidelines: The recommendation for protective equipment contained is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made. Health Effects from Exposure: It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.	
Abbreviations	AICS	Australian Inventory of Chemical Substances
	ADG	Australian Code for the Transport of Dangerous Goods by Road and Rail
	CAS	Chemical Abstract Service number
	EMS	Emergency Response Procedures for Ships Carrying Dangerous Goods
	EPA	Environmental Protection Agency
	GHS	Globally Harmonized System
	IARC	International Agency for Research on Cancer
	IATA	International Air Transport Association
	IMDG	International Maritime Dangerous Goods
	LC ₅₀	Lethal Concentration, 50% / Median Lethal Concentration
	LD ₅₀	Lethal Dose, 50% / Median Lethal Dose
	LEL	Lower Explosion Limit
	mg/m ³	Milligrams per Cubic Metre
	NZIOC	New Zealand Inventory of Chemicals
	N.O.S.	Not otherwise specified
	OEL	Occupational Exposure Limit
	PEL	Permissible Exposure Limit
	STEL	Short-Term Exposure Limit
	STOT-RE	Specific target organ toxicity (repeated exposure)
	STOT-SE	Specific target organ toxicity (single exposure)
	TLV	Threshold Limit Value
	TWA	Time Weighted Average
	UEL	Upper Explosion Limit

This SDS summarises our best knowledge of the health and safety hazard information. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. Since we cannot control the conditions under which the product may be used, each user must review this SDS in the context of how the user intends to use the product.

End of msds.

This safety data sheet was created pursuant to the requirements of:
 GHS: The Globally Harmonized System of Classification and Labeling of Chemicals

MARLEY CLEAR
 Revision Number 1.02

Revision date 10-Jun-2021
Supersedes Date: 29-Oct-2017

1. Identification

Product identifier

Product Name MARLEY CLEAR
Pure substance/mixture Mixture

Details of the supplier of the safety data sheet

Responsible Party

Bostik New Zealand Limited
 19 Eastern Hutt Road Wingate,
 Lower Hutt, New Zealand
 Tel: 04-567 5119
 Fax: 04-567 5412

Manufacturer

Bostik New Zealand Limited
 19 Eastern Hutt Road Wingate,
 Lower Hutt, New Zealand
 Tel: 04-567 5119
 Fax: 04-567 5412

E-mail address SDS.AP@Bostik.com

Emergency telephone number

Emergency Telephone 24 Hr: 0800 243 622
 +64 4 917 9888
 Poison Centre : 0800 764 766

Recommended use of the chemical and restrictions on use

Recommended use Adhesive
Restrictions on use No information available

2. Hazard(s) identification

Classification of the substance or mixture

Acute toxicity - Inhalation (Dusts/Mists)	Category 4 (6.1D)
Skin corrosion/irritation	Category 2 (6.3A)
Serious eye damage/eye irritation	Category 1 (8.3A)
Skin sensitization	Category 1 (6.5B)
Specific target organ toxicity - Single exposure	Category 3 (f)
Flammable liquids	Category 2 (3.1B)

Classification in parenthesis is applicable for New Zealand Hazard Classification

Label elements



Signal word

Danger

Hazard statements

H315 - Causes skin irritation
 H317 - May cause an allergic skin reaction
 H318 - Causes serious eye damage
 H332 - Harmful if inhaled
 H336 - May cause drowsiness or dizziness
 H225 - Highly flammable liquid and vapor

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Prevention

P261 - Avoid breathing dust/fume/gas/mist/vapors/spray
P271 - Use only outdoors or in a well-ventilated area
P264 - Wash face, hands and any exposed skin thoroughly after handling
P272 - Contaminated work clothing should not be allowed out of the workplace
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P233 - Keep container tightly closed
P241 - Use explosion-proof electrical/ ventilating/ lighting/ equipment
P240 - Ground/bond container and receiving equipment
P242 - Use only non-sparking tools
P243 - Take precautionary measures against static discharge
P235 - Keep cool
P280 - Wear protective gloves/protective clothing/eye protection/face protection

Response

Inhalation

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
P312 - Call a POISON CENTER or doctor if you feel unwell

Skin

P333 + P313 - If skin irritation or rash occurs: Get medical advice/attention
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower
P363 - Wash contaminated clothing before reuse

Eyes

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 - Immediately call a POISON CENTER or doctor

Fire

P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish

Storage

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up

Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant

Other hazards

May be harmful if swallowed May be harmful in contact with skin In use, may form flammable/explosive vapor-air mixture

3. Composition/information on ingredients

Substance

Not applicable.

Mixture

Chemical name	CAS No.	Weight-%
Acetone	67-64-1	20- <40
Methyl ethyl ketone	78-93-3	20- <40
Cyclohexanone	108-94-1	20- <40
Bisphenol-A-Epichlorhydrin Epoxy resin <= 700 MW	25068-38-6	0.1- <1

*** Any remaining ingredients are not hazardous

4. First-aid measures

Description of necessary first aid measures

General advice

Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.

Inhalation

Remove to fresh air. Get medical attention immediately if symptoms occur. IF exposed

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	or concerned: Get medical advice/attention. If symptoms persist, call a physician. If breathing has stopped, give artificial respiration. Get medical attention immediately.
Eye contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area. Get immediate medical advice/attention. Remove contact lenses, if present and easy to do. Continue rinsing.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a physician.
Ingestion	Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Get medical attention.
<u>Most important symptoms/effects, acute and delayed</u>	
Symptoms	Burning sensation. Itching. Rashes. Hives. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Coughing and/ or wheezing. Difficulty in breathing.
<u>For emergency responders</u>	
Self-protection of the first aider	Remove all sources of ignition. Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Avoid breathing vapors or mists.
<u>Note to physicians</u>	May cause sensitization in susceptible persons. Treat symptomatically.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media Dry chemical. Carbon dioxide (CO₂). Water spray. Alcohol resistant foam.

Unsuitable extinguishing media No information available.

Specific hazards arising from the chemical Risk of ignition. Keep product and empty container away from heat and sources of ignition. In the event of fire, cool tanks with water spray. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations. Product is or contains a sensitizer. May cause sensitization by skin contact.

Hazardous combustion products Carbon oxides. Hydrogen chloride.

Special protective actions for fire-fighters

Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Evacuate personnel to safe areas. Use personal protective equipment as required. See section 8 for more information. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Pay attention to flashback. Take precautionary measures against static discharges. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Avoid breathing vapors or mists.

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Other information
For emergency responders

Ventilate the area. Refer to protective measures listed in Sections 7 and 8.
Use personal protection recommended in Section 8.

Environmental precautions

Refer to protective measures listed in Sections 7 and 8. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

Methods and material for containment and cleaning up

Stop leak if you can do it without risk. Do not touch or walk through spilled material. A vapor suppressing foam may be used to reduce vapors. Dike far ahead of spill to collect runoff water. Keep out of drains, sewers, ditches and waterways. Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

7. Handling and storage

Precautions for safe handling

Use personal protection equipment. Avoid breathing vapors or mists. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use grounding and bonding connection when transferring this material to prevent static discharge, fire or explosion. Use with local exhaust ventilation. Use spark-proof tools and explosion-proof equipment. Keep in an area equipped with sprinklers. Use according to package label instructions. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. In case of insufficient ventilation, wear suitable respiratory equipment. Take off contaminated clothing and wash before reuse.

Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. See Section 8 for information on appropriate personal protective equipment

Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity). Keep in properly labeled containers. Do not store near combustible materials. Keep in an area equipped with sprinklers. Store in accordance with the particular national regulations. Store in accordance with local regulations. Store locked up. Keep out of the reach of children. Protect from moisture.

Incompatible materials

Strong acids Strong bases Strong oxidizing agents

8. Exposure controls/personal protection

Occupational exposure limits

Chemical name	New Zealand	Australia	European Union
Acetone 67-64-1	TWA: 500 ppm TWA: 1185 mg/m ³ STEL: 1000 ppm STEL: 2375 mg/m ³	500 ppm TWA 1185 mg/m ³ TWA 1000 ppm STEL 2375 mg/m ³ STEL	TWA: 500 ppm TWA: 1210 mg/m ³
Methyl ethyl ketone 78-93-3	TWA: 150 ppm TWA: 445 mg/m ³ STEL: 300 ppm STEL: 890 mg/m ³	150 ppm TWA 445 mg/m ³ TWA 300 ppm STEL 890 mg/m ³ STEL	TWA: 200 ppm TWA: 600 mg/m ³ STEL: 300 ppm STEL: 900 mg/m ³
Cyclohexanone 108-94-1	TWA: 25 ppm TWA: 100 mg/m ³ Skin	25 ppm TWA 100 mg/m ³ TWA	TWA: 10 ppm TWA: 40.8 mg/m ³ STEL: 20 ppm STEL: 81.6 mg/m ³ *

Chemical name	ACGIH TLV	NIOSH	OSHA PEL
Acetone 67-64-1	STEL: 500 ppm TWA: 250 ppm	IDLH: 2500 ppm TWA: 250 ppm TWA: 590 mg/m ³	TWA: 1000 ppm TWA: 2400 mg/m ³ (vacated) TWA: 750 ppm (vacated) TWA: 1800 mg/m ³ (vacated) STEL: 2400 mg/m ³

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			The acetone STEL does not apply to the cellulose acetate fiber industry. It is in effect for all other sectors. (vacated) STEL: 1000 ppm
Methyl ethyl ketone 78-93-3	STEL: 300 ppm TWA: 200 ppm	IDLH: 3000 ppm TWA: 200 ppm TWA: 590 mg/m ³ STEL: 300 ppm STEL: 885 mg/m ³	TWA: 200 ppm TWA: 590 mg/m ³ (vacated) TWA: 200 ppm (vacated) TWA: 590 mg/m ³ (vacated) STEL: 300 ppm (vacated) STEL: 885 mg/m ³
Cyclohexanone 108-94-1	STEL: 50 ppm TWA: 20 ppm S*	IDLH: 700 ppm TWA: 25 ppm TWA: 100 mg/m ³	TWA: 50 ppm TWA: 200 mg/m ³ (vacated) TWA: 25 ppm (vacated) TWA: 100 mg/m ³ (vacated) S*

Derived No Effect Level (DNEL) No information available

Predicted No Effect Concentration (PNEC) No information available

Engineering controls

Ensure adequate ventilation, especially in confined areas. Vapors/aerosols must be exhausted directly at the point of origin.

Individual protection measures, such as personal protective equipment

Eye/face protection	Tight sealing safety goggles. Face protection shield.
Hand protection	Wear protective gloves. The breakthrough time of the gloves depends on the material and the thickness as well as the temperature.
Skin and body protection	Antistatic footwear. Wear fire/flammable resistant/retardant clothing. Gloves made of plastic or rubber. Suitable protective clothing. Apron.
Respiratory protection	In case of inadequate ventilation wear respiratory protection. In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.
Recommended filter type:	Organic gases and vapors filter conforming to EN 14387.

Environmental exposure controls Do not allow into any sewer, on the ground or into any body of water.

9. Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Paste Liquid
Color	Clear, colorless
Physical state	Liquid
Odor	Solvent
Odor threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	No data available	Not applicable Insoluble in water
pH (as aqueous solution)	No data available	
Melting point / freezing point	No data available	
Initial boiling point and boiling range	66 °C	
Flash point	-15 °C	
Evaporation rate	No data available	
Flammability	No data available	
Flammability Limit in Air		
Upper flammability or explosive limits	10.9	
Lower flammability or explosive limits	1.7	
Vapor pressure	No data available	

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Relative vapor density	No data available
Relative density	No data available
Water solubility	partially soluble
Solubility(ies)	No data available
Partition coefficient	No data available
Autoignition temperature	321 °C
Decomposition temperature	No data available
Kinematic viscosity	No data available
Dynamic viscosity	No data available

Additional information

Oxidizing properties	No information available
Solid content (%)	approx 22
Density	0.9 g/cm ³

10. Stability and reactivity

Stability Stable under normal conditions.

Sensitivity to mechanical impact None.

Sensitivity to static discharge Yes.

Possibility of hazardous reactions None under normal processing.

Conditions to avoid Heat, flames and sparks. Excessive heat. Protect from moisture.

Incompatible materials Strong acids. Strong bases. Strong oxidizing agents.

Hazardous decomposition products None known based on information supplied.

11. Toxicological information

Product Information

Inhalation Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract. May cause drowsiness or dizziness. Harmful by inhalation. (based on components).

Eye contact Specific test data for the substance or mixture is not available. Causes serious eye damage. May cause irreversible damage to eyes.

Skin contact Specific test data for the substance or mixture is not available. May cause sensitization by skin contact. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. (based on components). Causes skin irritation.

Ingestion Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May be harmful if swallowed.

Symptoms Redness. Burning. May cause blindness. Itching. Rashes. Hives. May cause redness and tearing of the eyes. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Coughing and/ or wheezing.

Acute Toxicity

Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	4,866.30 mg/kg
ATEmix (dermal)	3,487.20 mg/kg
ATEmix (inhalation-dust/mist)	4.76 mg/l

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ATEmix (inhalation-vapor) 34.90 mg/l

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Acetone	=5800 mg/kg (Rattus)	>15800 mg/Kg (Rattus)	=79 mg/l(Rattus) 4 h
Methyl ethyl ketone	=2483 mg/kg (Rattus)	= 5000 mg/kg (Oryctolagus cuniculus)	=11700 ppm (Rattus) 4 h
Cyclohexanone	=1535 mg/kg (Rattus)	= 947 mg/kg (Oryctolagus cuniculus)	=8000 ppm (Rattus) 4 h
Bisphenol-A-Epichlorhydrin Epoxy resin <= 700 MW	LD50 (Rattus) > 2000 mg/kg OECD 420	>2000 mg/Kg (Rattus)	-

Skin corrosion/irritation Classification based on data available for ingredients. Causes skin irritation.

Serious eye damage/eye irritation Classification based on data available for ingredients. Causes burns. Risk of serious damage to eyes.

Component Information					
Methyl ethyl ketone (78-93-3)					
Method	Species	Exposure route	Effective dose	Exposure time	Results
OECD Test No. 405: Acute Eye Irritation/Corrosion	Rabbit	eye			irritant

Respiratory or skin sensitization May cause sensitization by skin contact.

Component Information			
Acetone (67-64-1)			
Methyl ethyl ketone (78-93-3)			
Method	Species	Exposure route	Results
OECD Test No. 406: Skin Sensitization	Guinea pig	Dermal	No sensitization responses were observed

Germ cell mutagenicity Based on available data, the classification criteria are not met.

Carcinogenicity

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical name	China	IARC
Cyclohexanone	-	Group 3

Legend

IARC (International Agency for Research on Cancer)
Group 3 - Not Classifiable as to Carcinogenicity in Humans

Reproductive toxicity Based on available data, the classification criteria are not met.

Specific target organ toxicity (single exposure) May cause drowsiness or dizziness.

Specific target organ toxicity (repeated exposure) Based on available data, the classification criteria are not met.

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Target organ effects Central nervous system. Eyes. Kidney. Liver. Respiratory system. Skin.
Aspiration hazard Based on available data, the classification criteria are not met.

12. Ecological information

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish	Crustacea
Acetone	-	LC50 96 h 4.74 - 6.33 mL/L (Oncorhynchus mykiss)	EC50 48 h 10294 - 17704 mg/L (Daphnia magna Static)
Methyl ethyl ketone	EC50=1972 mg/l (Pseudokirchneriella subcapitata)	LC50: 3130 - 3320mg/L (96h, Pimephales promelas)	EC50 48 h > 308 mg/L (Daphnia magna)
Cyclohexanone	EC50: =20mg/L (96h, Chlorella vulgaris)	LC50 96 h 481 - 578 mg/L (Pimephales promelas flow-through)	EC50: =800mg/L (24h, Daphnia magna)
Bisphenol-A-Epichlorhydrin Epoxy resin <= 700 MW	EC50 (72h) = 9.4 mg/L (Scenedesmus capricornutum) EPA-660/3-75-009	1.2 mg/l 96Hr (Oncorhynchus mykiss)	2.7 mg/l 48hr Daphia Magna

Persistence and degradability No information available.

Bioaccumulative potential There is no data for this product.

Component Information

Chemical name	Partition coefficient
Acetone	-0.24
Methyl ethyl ketone	0.3
Cyclohexanone	0.86
Bisphenol-A-Epichlorhydrin Epoxy resin <= 700 MW	3.26

Chemical name	PBT and vPvB assessment
Acetone 67-64-1	The substance is not PBT / vPvB
Methyl ethyl ketone 78-93-3	The substance is not PBT / vPvB
Cyclohexanone 108-94-1	The substance is not PBT / vPvB PBT assessment does not apply
Bisphenol-A-Epichlorhydrin Epoxy resin <= 700 MW 25068-38-6	The substance is not PBT / vPvB

Mobility in soil No information available.

13. Disposal considerations

Waste chemicals

Waste from residues/unused products Should not be released into the environment Dispose of in accordance with local regulations Dispose of waste in accordance with environmental legislation

Contaminated packaging Empty containers pose a potential fire and explosion hazard. Do not cut, puncture or weld containers

14. Transport information

IMDG

UN number or ID number UN1133
UN proper shipping name Adhesives

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Description	UN1133, Adhesives, 3, II, (-15°C c.c.)
Transport hazard class(es)	3
Packing group	II
Marine pollutant	NP
Limited Quantity (LQ)	5 L
EmS-No	F-E, S-D

IATA

UN number or ID number	UN1133
UN proper shipping name	Adhesives
Description	UN1133, Adhesives, 3, II
Transport hazard class(es)	3
Packing group	II
Special Provisions	A3
Limited Quantity (LQ)	1 L
ERG Code	3L

ADR

UN number or ID number	UN1133
Proper Shipping Name	Adhesives
Transport hazard class(es)	3
Labels	3
Packing group	II
Description	UN1133, Adhesives, 3, II, (D/E)
Limited Quantity (LQ)	5 L
Special Provisions	640C
Classification code	F1
Tunnel restriction code	(D/E)

Special precautions for user

Please refer to the applicable dangerous goods regulations for additional information

15. Regulatory information

National regulations

ERMA Group HSR002662

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

16. Other information

Abbreviations and acronyms

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)
STEL	STEL (Short Term Exposure Limit)
Ceiling	Ceiling Limit Value
*	Skin designation
SVHC	Substance(s) of Very High Concern
PBT	Persistent, Bioaccumulative, and Toxic (PBT) Chemicals
vPvB	Very Persistent and very Bioaccumulative (vPvB) Chemicals
STOT RE	Specific target organ toxicity - Repeated exposure

SAFETY DATA SHEET

MARLEY CLEAR
Revision Number 1.02

Revision date 10-Jun-2021
Supersedes Date: 29-Oct-2017

STOT SE

Specific target organ toxicity - Single exposure

Prepared By	Revision date	Revision note

Product Safety & Regulatory Affairs
10-Jun-2021

The symbol (*) in the margin of this SDS indicates that this line has been revised.

Key literature references and sources for data used to compile the SDS

New Zealand's Chemical Classification and Information Database (CCID)
World Health Organization

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet



Trusted Aerosol Performance

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Section 1 – IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: Contact Clean Aerosol
Product Code: 7115
Uses: Precision electrical and electronic equipment cleaner.
Company: Chemz Limited
Address: 80 Rangitane Place
Whakatu, Hastings
Telephone: +64 6 877 9690
Email: info@chemz.co.nz
Emergency Phone Number: 0800 764 766 (0800 POISON) National Poison Centre 24 Hr

Section 2 – HAZARDS IDENTIFICATION

Classification of the product

Considered a hazardous substance according to the Hazardous Substances (Hazard Classification) Notice 2020.
Classified as a dangerous goods for transport purposes.

GHS Classifications:

Aerosol Category 2
Eye irritation Category 2
STOT (repeated exposure) Category 2
Hazardous to Aquatic Environment (Chronic) Category 2

HSNO Classifications:

2.1.2A Flammable aerosol
6.4A Irritating to the eye.
6.9B Harmful to human target organs (repeated exposure)
9.1B Ecotoxic in the aquatic environment with long lasting effects



Signal Words: Danger

Hazard Statements:

H222 Extremely flammable aerosol
H229 Pressurised container: May burst if heated
H319 Causes serious eye irritation.
H373 May cause damage to organs through prolonged or repeated exposure.
H411 Toxic to aquatic life with long lasting effects.

Section 3 – COMPOSITION INFORMATION ON INGREDIENTS

Hazardous Ingredients	CAS No.	Proportion, % m/m
Isohexane	64742-49-0	> 60
Ethanol Denatured	64-17-5	10 - 30
Carbon Dioxide (propellant)	124-38-9	< 10
Non-hazardous ingredients	-	to 100

Section 4 – FIRST AID MEASURES

If medical advice is needed, have product container or label at hand.



Trusted Aerosol Performance

SAFETY DATA SHEET

If exposed or if you feel unwell: Call a POISON CENTRE or doctor.

Eye contact:	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice.
Skin contact:	IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice.
Inhalation:	IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTRE or doctor.
Ingestion:	Not considered a normal route of entry. IF SWALLOWED: Immediately call a POISON CENTRE or doctor. Do NOT induce vomiting. Obtain immediate medical attention.
Notes to physician:	Treat symptomatically and supportively. No specific antidote.

Section 5 – FIRE-FIGHTING MEASURES

General fire hazards:	Pressurised container, extremely flammable aerosol.
Specific hazards:	Containers can build up pressure if exposed to heat and/or fire and may explode. Vapours may form an explosive mixture with air. Vapours can travel to a source of ignition and flash back. Contents may float and be re-ignited on surface water.
Further advice:	On burning may emit toxic fumes including those of carbon monoxide and carbon dioxide. Fire fighters to wear self-contained breathing apparatus if risk of exposure to products of combustion.
Extinguishing media:	Use water spray, fog, or foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do not discharge extinguishing waters into the aquatic environment. Do NOT use straight streams of water.
Protective equipment:	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Firefighting instructions:	In the event of fire, cool containers with water spray to prevent vapour pressure build up. Move containers from fire area if you can do so without risk. Runoff can cause environmental damage.
Hazchem Code:	2YE

Section 6 – ACCIDENTAL RELEASE MEASURES

Minor spills:	Clean up all spills immediately. Remove all sources of ignition. Wipe up with absorbent material. Avoid breathing vapours and contact with skin and eyes. Wear protective clothing, gloves and safety glasses. Provide ventilation in workplace environment if necessary. If safe to do, damaged containers should be placed in a container outdoors, away from all ignition sources.
Major spills:	Evacuate the spill area and move upwind. Call the Fire Brigade. Remove all sources of ignition. No smoking. May be violently or explosively reactive. Increase ventilation if possible. Wear breathing apparatus and protective gloves. If safe to do so, prevent spillage from entering drains or water courses. If material enters drains, advise emergency services. Use absorbent (soil, sand or other inert material). Collect and seal in properly labeled containers for disposal. Undamaged containers should be gathered and stored safely, away from ignition sources.

Section 7 – HANDLING AND STORAGE

Handling Precautions:	Read product label before use. Keep out of reach of children. This product is highly flammable. Keep away from heat and open flames. Do not spray on an open flame or other ignition source. Pressurised container: Do not pierce or burn, even after use. No smoking. Use outdoors or in a well-ventilated area. Avoid breathing spray or vapours. In confined areas, wear a respirator. Wash hands with soap and water after handling.
Storage:	Protect from sunlight. Do not expose to temperatures exceeding 50 °C. Store in a well ventilated, cool, dry place. Do not store in basements or areas where vapours may accumulate. Keep away from heat, sparks, and flame. Store away from incompatible materials. Store locked up.



Trusted Aerosol Performance

SAFETY DATA SHEET

Section 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits: No value assigned for product. Exposure standards for constituents (NZ WES);

Material	TWA, mg/m ³	STEL, mg/m ³	Cat/Notices
Isohexane	Not available	Not available	Not available
Ethanol	1,880	Not available	Not available
Carbon Dioxide	9,000	54,000	Not available

(bio) - Exposure can also be estimated by biological monitoring.

Emergency Limits (TEEL)

Temporary Emergency Exposure Limits

Material	TEEL-1	TEEL-2	TEEL-3
Isohexane	1,000 ppm	11,000 ppm**	66,000 ppm ***
Ethanol	Not available	Not available	Not available
Carbon Dioxide	5,000 ppm	30,000 ppm	40,000 ppm

** indicates value is 50 - 99% of LEL, *** indicates value is 100% or more of LEL

Emergency Limits (IDLH)

Immediately Dangerous To Life or Health (IDLH) Values

Material	Original IDLH	Revised IDLH
Isohexane	Not available	Not available
Ethanol	Not available	Not available
Carbon Dioxide	40,000 ppm	Not available

Additional Information:

Wash hands before eating, drinking and smoking.

Engineering Controls:

No controls generally required when handling small quantities. Use with adequate ventilation.

Larger quantities: General exhaust is adequate under normal operating conditions. Exhaust ventilation should be designed to prevent accumulation and recirculation in the workplace. Ventilation equipment and lighting should be explosion-resistant.

Protective Equipment:

Eye and face protection: Safety glasses or goggles.

Skin Protection: No special equipment needed for minor exposure to small quantities. For moderate exposures wear general protective light weight latex gloves. For heavy exposures, wear chemical protective (PVC) and safety boots.

Other Protection: Protective clothing such as overalls, apron and boots are recommended for moderate or heavy use. Operators insulated from earth may develop static charges sufficient to ignite flammable gas/air mixtures. Avoid by wearing low resistivity outer material.

Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace.

Respiratory Protection: Where the concentration of gas/particulates in the breathing zone exceeds the "Exposure Standard" (or ES), respiratory protection is required.

Use Type AX-P filter (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88)

The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator.

Cartridge performance is affected by humidity. Cartridges should be changed after 2 hours of continuous use unless the humidity is less than 75%, when cartridges can be used for 4 hours. Used cartridges should be discarded daily, regardless of the length of time used.

Section 9 – PHYSICAL AND CHEMICAL PROPERTIES

Appearance:

Clear, liquid spray.



Trusted Aerosol Performance

SAFETY DATA SHEET

Odour:	Hydrocarbon, propanol odour.
Odour Threshold:	Not available.
pH:	Not applicable.
Melting Point, °C:	Not available.
Freezing Point, °C:	Not available.
Initial Boiling Point, °C:	56 (base liquid)
Boiling Point Range, °C:	56 – 78 (base liquid)
Flash Point, °C:	< 0 (propellant)
Flammability:	Highly flammable liquid and vapour.
Explosion Limit, % v/v:	LEL 1.0% UEL 19.0%
Vapour Pressure, kPa:	300 - 600
Vapour Density (Air = 1):	> 1
Relative Density:	0.68
Solubility:	Partially soluble in water.
Partition Coefficient:	Not available (n-octanol/water)
Autoignition Temp, °C:	Not available.
Decomposition Temp, °C:	Not available.
Kinematic Viscosity, mm ² /s:	Not available.
Particle Characteristics:	Not available.

Section 10 – STABILITY AND REACTIVITY

Stability:	Stable under normal conditions of use. Not reactive. Avoid oxidisers. Avoid elevated temperatures.
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Section 11 – TOXICOLOGICAL INFORMATION

Basis for Assessment:	Information given is based on product testing, and/or similar products, and/or components.
Acute Oral Toxicity:	LD ₅₀ estimated to be >5,000 mg/kg (calculation based on component mixture, excluding propellant).
Acute Dermal Toxicity:	LD ₅₀ estimated to be > 3,614 mg/kg (calculation based on component mixture, excluding propellant).
Acute Inhalation Toxicity:	LC ₅₀ estimated to be > 20 mg/L, Rat 4 hour (calculation based on component mixture). Beware: Deliberately sniffing or inhaling concentrated contents can be harmful or fatal.

Toxicity of Components:

Material	Toxicity	Irritation
Isohexane	Oral (rat) LD ₅₀ > 5,000 mg/kg Dermal (rabbit) LD ₅₀ > 3,000 mg/kg Inhalation (rat) LC ₅₀ > 20 mg/L 4 hr	Slight skin irritant. Moderate eye irritant.
Ethanol	Oral (rat) LD ₅₀ > 5,000 mg/kg Dermal (rabbit) LD ₅₀ > 5,000 mg/kg Inhalation (rat) LC ₅₀ > 20 mg/L	Moderate eye irritant.
Carbon Dioxide	Not available	Not available

Not Available: Applies to data either not available or does not fill the criteria for classification.

Skin Irritation:	May cause skin irritation. Avoid contact with skin.
Eye Irritation:	Spray may be irritating to the eye. Avoid contact with eyes.



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Inhalation:	Prolonged inhalation of spray may cause drowsiness or dizziness.
Respiratory Irritation:	Not expected to cause irritation to the respiratory system.
Sensitisation:	Not a contact or respiratory sensitiser.
Mutagenicity:	Not expected to be mutagenic.
Carcinogenicity:	Not expected to be carcinogenic.
Reproductive toxicity:	Not expected to be a reproductive toxicant.
Specific Target Organ Toxicity:	Harmful to human target organs (single exposure).
STOT (Narcotic):	Inhalation will cause drowsiness or dizziness, particularly over long periods of exposure.
Repeated Dose Toxicity:	Not available.
Additional Information:	None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as being carcinogens.

Section 12 – ECOTOXICITY INFORMATION

Ecotoxicity: For Hydrocarbons: log Kow 1, BCF ~ 1

Material	Test	Value
Liquid Product	Not available	Not available
Isohexane	Fish LC ₅₀ , 96 hr Crustacean LC ₅₀ , Daphnia magna 48 hr Algae EC ₅₀ , Green algae 72 hr	4.656 mg/L 5.424 mg/L 3.635 mg/L
Ethanol	Fish LC ₅₀ , Pimephales promelas 96 hr Crustacean LC ₅₀ , Ceriodaphnia dubia 48 hr Algae EC ₅₀ , Chlorella vulgaris 72 hr	15,300 mg/L 5,012 mg/L 275 mg/L
Carbon Dioxide	LC ₅₀ Fish, 96 hr EC ₅₀ Crustacean, 48 hr EC ₅₀ Algae 72 hr	2.6 mg/L 1.8 mg/L 3.2 mg/L

Persistence/degradability:	No data available for all ingredients (Air, Water, Soil).
Bioaccumulation Potential:	No data available.
Mobility in Soil:	No data available.
Other Adverse Effects:	No data available.
Ecotoxicity:	Harmful to aquatic life with long lasting effects.
Mobility:	No data available.
Persistence/degradability:	No data available.
Bioaccumulation Potential:	No data available.

Section 13 – DISPOSAL CONSIDERATIONS

Material Disposal:	Product wastes are ecotoxic and should be disposed of in accordance with applicable regulations. Do not dispose into the environment, in drains or in water courses. Waste product should not be allowed to contaminate soil or water. Large quantities should be degassed by an aerosol recycler. Do not dispose of large quantities of pressurised aerosols in landfills. Incineration in an authorised facility is suggested.
Container Disposal:	Recycle empty container if possible or dispose in landfill. Product containers are also considered wastes of the same class of the contents and should be disposed of in accordance with applicable regulations.



Trusted Aerosol Performance

SAFETY DATA SHEET

If it is a class 6, 8 or 9 it must be disposed by treating it so it is no longer a hazardous substance. If it contains components that are bioaccumulative and not rapidly degradable, it must be treated so that the substance is no longer a hazardous substance.

Container Recycling:

Recyclable metal - Recycle if possible. Packages which hazardous content have been appropriately treated to remove residual contents may be recycled.

Workplace: Send empty cans to a metal recycler, approved aerosol recycler or commercial waste stream.

Consumer: Recycle if possible or place empty can in normal household waste stream.

Section 14 – TRANSPORT INFORMATION

Transport:

Classified as a Dangerous Good for transport purposes.

Class 2.1 should not be loaded on the same vehicle as Classes 1, 3 (where both are in bulk), 4, 5, and 7. They may be loaded with Classes 3, 6, 8, 9, foodstuffs and foodstuff empties.

Proper Shipping Name:

Aerosols

UN Number:

1950

Dangerous Goods Class:

2.1

Transport Labels Required:

Class 2 Flammable (Land, Sea and Air)

Land, Sea, Air	MP
	

Subsidiary Risk:

Not applicable

Packing Group:

Not applicable

Marine Pollutant:

Yes

EMS Number

F-D, S-U (UN 1950 Flammable aerosols)

DG Segregation:

This product is classified as a Dangerous Goods. Consult the Land Transport Rule: Dangerous Goods 2005, and NZS 5433:2012 Transport of Dangerous Goods on Land for information.

Section 15 – REGULATORY INFORMATION

EPA Approval Number:

HSR002515 Aerosols (Flammable) Group Standard 2020.

EPA Hsno Controls:

Refer to www.epa.govt.nz for information on Controls.

This substance is to be managed using the conditions specified in an applicable Group Standard.

Approved Handler:

2.1.2A - Required for quantities greater than 3,000 litres (aggregate water capacity).

Location Test Certificate:

2.1.2A - Required for quantities greater than 3,000 litres (aggregate water capacity).

Tracking:

This substance is not a tracked substance.

Inventory Listing

NZIOC (New Zealand Inventory of Chemicals); All components of this product are listed.

SDS regulations

This Safety Data Sheet was prepared in accordance with the EPA Hazardous Substances (Safety Data Sheets) Notice July 2017 (Consolidated 30 September 2022).

Section 16 – OTHER INFORMATION

Additional information

Personal Protective Equipment Guidelines: The recommendation for protective equipment contained is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.



Trusted Aerosol Performance

SAFETY DATA SHEET

Health Effects from Exposure: It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

CAS	Chemical Abstract Service number
EMS	Emergency Response Procedures for Ships Carrying Dangerous Goods
EPA	Environmental Protection Agency
GHS	Globally Harmonized System
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC ₅₀	Lethal Concentration, 50% / Median Lethal Concentration
LD ₅₀	Lethal Dose, 50% / Median Lethal Dose
LEL	Lower Explosion Limit
mg/m ³	Milligrams per Cubic Metre
NZIoC	New Zealand Inventory of Chemicals
N.O.S.	Not otherwise specified
OEL	Occupational Exposure Limit
PEL	Permissible Exposure Limit
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
TLV	Threshold Limit Value
TWA	Time Weighted Average
UEL	Upper Explosion Limit

This SDS summarises our best knowledge of the health and safety hazard information. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. Since we cannot control the conditions under which the product may be used, each user must review this SDS in the context of how the user intends to use the product. End of sds.



NEW ZEALAND MADE FOR THE TRADE

SAFETY DATA SHEET

Section 1 – IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: Xtra Cutting Oil Aerosol 400ml
Product Code: 7714
Uses: General purpose drilling and cutting lubricant
Company: Chemz Limited
Address: 80 Rangitane Place
Whakatu, Hastings
Telephone: +64 6 877 9690
Email: info@chemz.co.nz
Emergency Number 24 hr: 0800 764 766 (0800 POISON) National Poison Centre

Section 2 – HAZARDS IDENTIFICATION

Classification of the product

Considered a hazardous substance according to the Hazardous Substance (Minimum Degrees of Hazard) Regulations NZ.

Classified as a dangerous goods for transport purposes.

GHS Classifications:

Aerosol Category 1

HSNO Classifications:

2.1.2A Flammable aerosol



Signal Words: Danger

Hazard Statements

H222 Extremely flammable aerosol.

H229 Pressurised container: May burst if heated

Section 3 – COMPOSITION INFORMATION ON INGREDIENTS

Hazardous Ingredients	CAS No.	Proportion, % m/m
Lubricating Base Oil	Mixture	> 60
Hydrocarbon propellant (LPG - Propane, Butane)	68476-85-7	30 - 60
Non-hazardous ingredients		to 100

Section 4 – FIRST AID MEASURES

If medical advice is needed, have product container or label at hand.

If exposed or if you feel unwell: Call a POISON CENTRE (0800 764 766) or doctor.

Eye contact: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice.

Skin contact: IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice.



NEW ZEALAND MADE FOR THE TRADE

SAFETY DATA SHEET

Inhalation: IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTRE or doctor.

Ingestion: IF SWALLOWED: Call a POISON CENTRE or doctor. Do NOT induce vomiting. Obtain immediate medical attention.

Notes to physician: Treat symptomatically and supportively. No specific antidote.

Section 5 – FIRE-FIGHTING MEASURES

General fire hazards Pressurised, extremely flammable aerosol.

Specific hazards: Containers can build up pressure if exposed to heat and/or fire and may explode. Vapours may form an explosive mixture with air. Vapours can travel to a source of ignition and flash back. May float and be re-ignited on surface water. Will burn if involved in a fire.

Further advice: On burning may emit toxic fumes including those of carbon monoxide and carbon dioxide. Fire fighters to wear self-contained breathing apparatus if risk of exposure to products of combustion.

Extinguishing media: For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam.

For large fires, use water spray, fog, or foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do not discharge extinguishing waters into the aquatic environment.

Do NOT use straight streams of water.

Protective equipment Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

Firefighting instructions In the event of fire, cool containers with water spray to prevent vapour pressure build up. Move containers from fire area if you can do so without risk. Runoff can cause environmental damage.

Hazchem Code: 2YE

Section 6 – ACCIDENTAL RELEASE MEASURES

Minor spills: Clean up all spills immediately. Provide ventilation. Remove all sources of ignition. If safe, damaged cans should be placed in a container outdoors, away from all ignition sources, until pressure has dissipated. Undamaged cans should be gathered and stowed safely.

Major spills: Evacuate the spill area. Call the Fire Brigade. Remove all sources of ignition. If safe to do so, prevent spillage from entering drains or water courses. If material enters drains, advise emergency services. Use absorbent (soil, sand or other inert material). Collect and seal in properly labeled containers for disposal.

Section 7 – HANDLING AND STORAGE

Handling Precautions: Read product label before use. Keep out of reach of children.

This product is highly flammable. Keep away from heat and open flames/hot surfaces. No smoking. Do not spray on an open flame or other ignition source. Pressurised container: Do not pierce or burn, even after use.

Use in a well-ventilated area. Avoid breathing spray. Wash hands with soap and water after handling.

Storage: Protect from sunlight. Do not expose to temperatures exceeding 50 °C. Store in a well ventilated, cool, dry place. Keep away from heat, sparks, and flame. Store locked up.

Section 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits: No value assigned for product. Exposure standards for constituents (NZ WES);

Material	TWA, mg/m ³	STEL, mg/m ³
Lubricating Base Oil (mist)	5	10
LPG (Liquefied petroleum gas – butane, propane)	1,800	-

Additional Information: Wash hands before eating, drinking and smoking.



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Engineering Controls:	No controls required when handling small quantities. Use outdoors or with adequate ventilation. Larger quantities: General exhaust is adequate under normal operating conditions. Ventilation equipment and lighting should be explosion-resistant.
Protective Equipment:	Generally not required for small quantities. In an industrial environment: gloves, safety glasses or chemical goggles are recommended. Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. In case of inadequate ventilation wear respiratory protection. If TWA is exceeded, wear an approved respirator with a type A filter.

Section 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Clear amber oily spray.
pH:	Not applicable.
Vapour Density:	> 1 (Air =1)
Vapour Pressure, kPa:	300 - 600
Boiling Point, °C:	Not applicable.
Melting Point, °C:	Not applicable.
Specific Gravity:	Not applicable.
Flash Point, °C:	< 0 (propellant)
Explosion Limit, % v/v:	LEL 1.2% UEL 9.5%
Autoignition Temp, °C:	Not applicable.
Solubility:	Not soluble in water.

Section 10 – STABILITY AND REACTIVITY

Stability:	Stable under normal conditions of use. Not reactive. Avoid oxidisers. Avoid elevated temperatures.
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Section 11 – TOXICOLOGICAL INFORMATION

Basis for Assessment:	Information given is based on product testing, and/or similar products, and/or components.
Acute Oral Toxicity:	LD ₅₀ estimated to be > 5,000 mg/kg (based on component mixture, excluding propellant).
Acute Dermal Toxicity:	LD ₅₀ estimated to be > 5,000 mg/kg (based on component mixture, excluding propellant).
Acute Inhalation Toxicity:	LC ₅₀ estimated to be > 20 mg/L, Rat 4 hour (based on component mixture). Beware: Deliberately sniffing or inhaling concentrated contents can be harmful or fatal.
Skin Irritation:	May cause skin irritation. Prolonged/repeated contact may cause oil blisters.
Eye Irritation:	Spray may be irritating to the eye.
Inhalation:	May cause drowsiness or dizziness. Inhalation will cause narcotic effects.
Respiratory Irritation:	Inhalation of vapours or mists may cause irritation to the respiratory system.
Sensitisation:	Product is not expected to be a sensitiser.
Mutagenicity:	Not expected to be mutagenic.
Carcinogenicity:	Product is not a suspected human carcinogen.
Reproductive toxicity:	Product is not a suspected human reproductive or developmental toxicant.
Specific Target Organ Toxicity:	Product is not harmful to human target organs or systems (Single exposure)
STOT (Narcotic):	Product is not expected to be narcotic.



NEW ZEALAND MADE FOR THE TRADE

SAFETY DATA SHEET

Repeated Dose Toxicity: Prolonged and repeated contact with product may result in oil blisters or irritant contact dermatitis.

Additional Information: None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as being carcinogens.

Section 12 – ECOTOXICITY INFORMATION

Ecotoxicity: Not expected to be ecotoxic.

Mobility: No soil mobility.

Persistence/degradability: Intrinsically biodegradable. Not expected to bioaccumulate.

Section 13 – DISPOSAL CONSIDERATIONS

Material Disposal: Product wastes should be disposed of in accordance with applicable regulations. Do not dispose into the environment, in drains or in water courses.

Large quantities should be degassed by an aerosol recycler. Do not dispose of large quantities of pressurised aerosols in landfills. Incineration in an authorised facility is suggested.

Container Disposal: Recycle empty container if possible. Product containers are also considered wastes of the same class of the contents and should be disposed of in accordance with applicable regulations.

Section 14 – TRANSPORT INFORMATION

Transport: Classified as a Dangerous Good for transport purposes.

Class 2.1 should not be loaded on the same vehicle as Classes 1, 3 (where both are in bulk), 4, 5, and 7. They may be loaded with Classes 3, 6, 8, 9, foodstuffs and foodstuff empties.

Proper Shipping Name: Aerosols

UN Number: 1950

Dangerous Goods Class: 2.1

Subsidiary Risk: Not applicable

Packing Group: Not applicable

Transport Labels Required: Class 2 Flammable (Land, Sea and Air), EHS (Sea and Air)

Land, Sea, Air

Sea, Air



Marine Pollutant: Yes

EMS Number: F-D, S-U (UN 1950 Flammable aerosols)

DG Segregation: This product is classified as a Dangerous Goods. Please consult the Land Transport Rule: Dangerous Goods 2005, and NZS 5433:2012 Transport of Dangerous Goods on Land for information.

Section 15 – REGULATORY INFORMATION

Inventory Listing: NZIOC (New Zealand Inventory of Chemicals); All components of this product are listed.

SDS regulations: This Safety Data Sheet was prepared in accordance with the EPA Hazardous Substances (Safety Data Sheets) Notice July 2017.

EPA Approval Number: HSR002515 Aerosols (Flammable) Group Standard 2020



NEW ZEALAND MADE FOR THE TRADE

SAFETY DATA SHEET

EPA Hsno Controls:

Refer to www.epa.govt.nz for information on Controls.

This substance is to be managed using the conditions specified in an applicable Group Standard.

Section 16 – OTHER INFORMATION

Additional information

Health Effects from Exposure: It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

CAS	Chemical Abstract Service number
EMS	Emergency Response Procedures for Ships Carrying Dangerous Goods
EPA	Environmental Protection Agency
GHS	Globally Harmonized System
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC ₅₀	Lethal Concentration, 50% / Median Lethal Concentration
LD ₅₀	Lethal Dose, 50% / Median Lethal Dose
LEL	Lower Explosion Limit
mg/m ³	Milligrams per Cubic Metre
NZIoC	New Zealand Inventory of Chemicals
N.O.S.	Not otherwise specified
OEL	Occupational Exposure Limit
PEL	Permissible Exposure Limit
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
TLV	Threshold Limit Value
TWA	Time Weighted Average
UEL	Upper Explosion Limit

This SDS summarises our best knowledge of the health and safety hazard information. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. Since we cannot control the conditions under which the product may be used, each user must review this SDS in the context of how the user intends to use the product.

End of sds.



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Section 1 – IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: Electroclean Aerosol 400ml

Product Code: 7125

Uses: Non-flammable heavy duty electrical equipment cleaner aerosol.

Company: Chemz Limited

Address: 80 Rangitane Place
Whakatu, Hastings

Telephone: +64 6 877 9690

Email: info@chemz.co.nz

Emergency Number 24 hr: 0800 764 766 (0800 POISON) National Poison Centre

Section 2 – HAZARDS IDENTIFICATION

Classification of the product

Considered a hazardous substance according to the Hazardous Substance (Minimum Degrees of Hazard) Regulations NZ.
Classified as a dangerous goods for transport purposes.

GHS Classifications:

Aerosol Category 3
Acute toxicity (inhalation) Category 4
Skin irritation Category 3
Eye irritation Category 2
Germ cell mutagenicity Category 2
Carcinogenicity Category 1A
STOT (chronic) Category 2
STOT (Single exposure) Category 3 (Narcotic)
Aquatic toxicity (Chronic) Category 2

HSNO Classifications:

2.2 Aerosol
6.1D Acutely toxic (Harmful) Inhalation
6.3A Irritating to the skin
6.4A Irritating to the eye
6.6B Suspected human mutagens
6.7A Known or presumed human carcinogen
6.9B Harmful to human target organs or systems (chronic)
6.9B Harmful to human target organs or systems (narcotic)
9.1B Ecotoxic in the aquatic environment with long lasting effects



Signal Words: Danger

Hazard Statements

H229 Pressurised container: May burst if heated.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H336 May cause drowsiness or dizziness.
H341 Suspected of causing genetic defects.
H350 May cause cancer.
H373 May cause damage to organs through prolonged or repeated exposure.
H411 Toxic to aquatic life with long lasting effects.



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Section 3 – COMPOSITION INFORMATION ON INGREDIENTS

Hazardous Ingredients	CAS No.	Proportion, % m/m
Trichloroethylene	79-01-6	> 60
Perchloroethylene (Tetrachloroethylene)	127-18-4	10 - 30
Carbon Dioxide	124-38-9	< 10
Non-hazardous ingredients		to 100

Section 4 – FIRST AID MEASURES

If medical advice is needed, have product container or label at hand.

If exposed or if you feel unwell: Call a POISON CENTRE or doctor.

Eye contact:	IF IN EYES: Rinse well with water for fifteen minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Transport to hospital or doctor without delay.
Inhalation:	IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTRE or doctor.
Skin contact:	IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice.
Ingestion:	Not considered a normal route of entry. IF SWALLOWED: Immediately call a POISON CENTRE or doctor. Do NOT induce vomiting. Obtain immediate medical attention.
Notes to physician:	Treat symptomatically and supportively. No specific antidote.

Section 5 – FIRE-FIGHTING MEASURES

General fire hazards:	Pressurised container. Non-combustible. However vapour will burn when in contact with high temperature flame, ignition ceases on removal of flame. May form a flammable or explosive mixture in an oxygen enriched atmosphere.
Specific hazards:	Containers can build up pressure if exposed to heat and/or fire and may explode. May be violently or explosively reactive.
Further advice:	On burning may emit toxic fumes including those of phosgene, hydrogen chloride, carbon monoxide and carbon dioxide. Fire fighters to wear self-contained breathing apparatus if risk of exposure to products of combustion.
Extinguishing media:	Use water spray, fog, or foam. Use water spray to cool fire-exposed containers. Do not discharge extinguishing waters into the aquatic environment.
Protective equipment:	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Firefighting instructions:	In the event of fire, cool containers with water spray to prevent vapour pressure build up. Move containers from fire area if you can do so without risk. Runoff can cause environmental damage.
Hazchem Code:	2YE

Section 6 – ACCIDENTAL RELEASE MEASURES

Minor spills:	Clean up all spills immediately. Remove all sources of ignition. If safe to do, damaged cans should be placed in a container outdoors, away from all ignition sources, until pressure has dissipated. Do not use aluminium or galvanised containers. Undamaged cans should be gathered and stowed safely. Provide ventilation. Wash with water.
Major spills:	Evacuate the spill area. Call the Fire Brigade. Remove all sources of ignition. If safe to do so, prevent spillage from entering drains or water courses. If material enters drains, advise emergency services. Use absorbent (soil, sand or other inert material). Collect and seal in properly labeled containers for disposal.



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Section 7 – HANDLING AND STORAGE

- Handling Precautions:** Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Read product label before use. Keep out of reach of children.
- Keep away from heat and open flames. Do not spray on an open flame or other ignition source.
- Pressurised container: Do not pierce or burn, even after use. No smoking.
- Beware: Deliberately sniffing or inhaling concentrated contents can be harmful or fatal.
- Use outdoors or in a well-ventilated area. Avoid breathing spray or vapours. Wash hands with soap and water after handling.
- Storage:** Protect from sunlight. Do not expose to temperatures exceeding 50 °C. Store in a well ventilated, cool, dry place. Keep away from heat, sparks, and flame. Store locked up.

Section 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

- Exposure Limits:** No value assigned for product. Exposure standards for constituents (NZ WES);

Material	TWA, mg/m ³	STEL, mg/m ³
Trichloroethylene (6.7A)	55	135
Tetrachloroethylene (6.7A skin)	136	271
Carbon Dioxide Propellant	9,000	54,000

- Additional Information:** Obtain special instructions before use. Wash hands before eating, drinking and smoking.
- Engineering Controls:** No controls generally required when handling small quantities. Use with adequate ventilation.
- Larger quantities: General exhaust is adequate under normal operating conditions. Exhaust ventilation should be designed to prevent accumulation and recirculation in the workplace. Ventilation equipment and lighting should be explosion-resistant.
- Protective Equipment:** General protective gloves are recommended. In an industrial environment: chemical protective gloves, safety glasses or chemical goggles are recommended. Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace.
- In case of inadequate ventilation, wear respiratory protection. If TWA is exceeded, wear an approved respirator with a type A filter.

Section 9 – PHYSICAL AND CHEMICAL PROPERTIES

- Physical state:** Colourless spray with characteristic odour.
- pH:** Not applicable.
- Vapour Density:** > 1 (Air =1)
- Vapour Pressure, kPa:** 300 - 600
- Boiling Point, °C:** About 85
- Melting Point, °C:** Not applicable.
- Specific Gravity:** About 1.5
- Flash Point, °C:** < 0 (propellant)
- Explosion Limit, % v/v:** LEL 90% UEL 12%
- Autoignition Temp, °C:** > 200
- Solubility:** Not soluble in water.

Section 10 – STABILITY AND REACTIVITY

- Stability:** Stable under normal conditions of use. Not reactive. Avoid oxidisers. Avoid elevated temperatures.



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Section 11 – TOXICOLOGICAL INFORMATION

Basis for Assessment:	Information given is based on product testing, and/or similar products, and/or components.
Acute Oral Toxicity:	LD ₅₀ estimated to be > 4,000 mg/kg (based on component mixture, excluding propellant).
Acute Dermal Toxicity:	LD ₅₀ estimated to be > 5,000 mg/kg (based on component mixture, excluding propellant).
Acute Inhalation Toxicity:	LC ₅₀ estimated to be > 20 mg/L, Rat 4 hour (based on component mixture). Beware: Deliberately sniffing or inhaling concentrated contents can be harmful or fatal.
Skin Irritation:	Avoid contact with skin. May cause irreversible mutations even following a single exposure.
Eye Irritation:	May cause serious eye irritation. Moderate inflammation may be expected with redness; conjunctivitis may occur with prolonged exposure. Avoid contact with eyes.
Inhalation:	May cause drowsiness or dizziness. Inhalation will cause narcotic effects and depression of the central nervous system. Material is highly volatile and may form concentrated levels of vapour. May displace air and act as a simple asphyxiant. Main route of exposure to the gas in the workplace is by inhalation.
Respiratory Irritation:	Inhalation of vapours or mists may cause irritation to the respiratory system.
Sensitisation:	Not expected to be a contact or respiratory sensitiser.
Carcinogenicity:	This material can be regarded as being able to cause cancer in humans
Reproductive toxicity:	Exposure may result in toxic effects to the unborn baby.
STOT (Narcotic):	Prolonged inhalation of vapours may be narcotic and cause drowsiness or dizziness.
Repeated Dose Toxicity:	Repeated, prolonged exposure by inhalation may cause damage to organs. Accumulation in the human body may occur and may cause some concern following repeated or long-term occupational exposure.

Section 12 – ECOTOXICITY INFORMATION

Ecotoxicity:	Harmful to aquatic life with long lasting effects.
Mobility:	Volatile. Some components show low soil mobility.
Persistence/degradability:	Not readily biodegradable.
Bioaccumulation Potential:	May bioaccumulate.

Section 13 – DISPOSAL CONSIDERATIONS

Material Disposal:	Product wastes should be disposed of in accordance with applicable regulations. Do not dispose into the environment, in drains or in water courses. Large quantities should be degassed by an aerosol recycler. Do not dispose of large quantities of pressurised aerosols in landfills. Incineration in an authorised facility is suggested.
Container Disposal:	Recycle empty container if possible or dispose in landfill. Product containers are also considered wastes of the same class of the contents and should be disposed of in accordance with applicable regulations.

Section 14 – TRANSPORT INFORMATION

Transport:	Classified as a Dangerous Good for transport purposes. Class 2.2 should not be loaded on the same vehicle as Classes 1, 3 (where both are in bulk), 4, 5, and 7. They may be loaded with Classes 3, 6, 8, 9, foodstuffs and foodstuff empties.
Proper Shipping Name:	Aerosols
UN Number:	1950
Dangerous Goods Class:	2.2
Transport Labels Required:	Class 2 Gas (Land, Sea, Air), Sea: Marine Pollutant



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Land, Sea, Air

MP



Subsidiary Risk:	Not applicable
Packing Group:	Not applicable
Marine Pollutant:	Yes
EMS Number	F-D, S-U
DG Segregation:	This product is classified as a Dangerous Goods. Consult the Land Transport Rule: Dangerous Goods 2005, and NZS 5433:2012 Transport of Dangerous Goods on Land for information.

Section 15 – REGULATORY INFORMATION

Inventory Listing	NZIOC (New Zealand Inventory of Chemicals); All components of this product are listed.
SDS regulations	This Safety Data Sheet was prepared in accordance with the EPA Hazardous Substances (Safety Data Sheets) Notice July 2017.
EPA Approval Number:	HSR002520 Aerosols (Non-flammable, Carcinogenic) Group Standard 2020.
EPA Hsno Controls:	Refer to www.epa.govt.nz for information on Controls. This substance is to be managed using the conditions specified in an applicable Group Standard.

Section 16 – OTHER INFORMATION

Additional information	Personal Protective Equipment Guidelines: The recommendation for protective equipment contained is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made. Health Effects from Exposure: It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.	
Abbreviations	AICS	Australian Inventory of Chemical Substances
	ADG	Australian Code for the Transport of Dangerous Goods by Road and Rail
	CAS	Chemical Abstract Service number
	EMS	Emergency Response Procedures for Ships Carrying Dangerous Goods
	EPA	Environmental Protection Agency
	GHS	Globally Harmonized System
	IARC	International Agency for Research on Cancer
	IATA	International Air Transport Association
	IMDG	International Maritime Dangerous Goods
	LC ₅₀	Lethal Concentration, 50% / Median Lethal Concentration
	LD ₅₀	Lethal Dose, 50% / Median Lethal Dose
	LEL	Lower Explosion Limit
	mg/m ³	Milligrams per Cubic Metre
	NZIOC	New Zealand Inventory of Chemicals
	N.O.S.	Not otherwise specified
	OEL	Occupational Exposure Limit



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PEL	Permissible Exposure Limit
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
TLV	Threshold Limit Value
TWA	Time Weighted Average
UEL	Upper Explosion Limit

This SDS summarises our best knowledge of the health and safety hazard information. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. Since we cannot control the conditions under which the product may be used, each user must review this SDS in the context of how the user intends to use the product. End of sds.

Section 1 Identification of Chemical Product and Company

Code	Description	Size	Colour
20088	Gorilla Pro Expanding Foam Click & Fix	750ml	Champagne
20015	Gorilla Pro Expanding Foam Click & Fix Trade 3 Pack	750 ml	Champagne

Recommended use:		Expanding Foam
HSNO Group Standard		HSR002517
UN number, shipping name and packaging group:		UN 1950 AEROSOLS
Supplier contact details:	Soudal Ltd	Freephone: 0800 70 10 80
	134 Kohia Drive	Phone: (07) 847 5540
	Horotiu	
	Hamilton 3288	Email: sales@soudal.co.nz
	New Zealand	Website: www.soudal.co.nz
POISON CENTRE NUMBER: 0800 764 766 (24 hours)		

Section 2 Hazards Identification

Statement of Hazardous Nature

This product is classified as:

HAZARDOUS SUBSTANCE according to the criteria of GHS v7.

REGULATED under NZS5433:2020 Transport of Dangerous Goods on Land

GHS classification:

Classification	GHS Hazard statements
Flammable Aerosol Category 1	H222+H229 Extremely flammable aerosol. Pressurised container. May burst if heated
Acute Inhalation Toxicity Category 4	H332 Harmful if inhaled
Skin Irritation Category 2	H315 Causes skin irritation
Eye Irritation Category 2	H319 Causes serious eye irritation
Respiratory Sensitisation Category 1	H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled
Skin Sensitisation Category 1	H317 May cause an allergic skin reaction
Carcinogenicity Category 2	H351 Suspected of causing cancer
Lactation Effects	H362 May cause harm to breast fed children
STOT – RE Category 2	H373 May cause damage to organs through prolonged or repeated exposure
STOT – SE RTI Category 3	H335 May cause respiratory irritation
Chronic Aquatic Hazard Category 2	H411 Toxic to aquatic life with long lasting effects

HSNO Signal Word:

DANGER



Precautionary Statements:	P102	Keep out of the reach of children
	P103	Read label before use
	P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
	P211	Do not spray on an open flame or other ignition source
	P251	Do not pierce or burn even after use
	P260	Do not breathe gas
	P271	Use only outdoors or in a well-ventilated place
	P280	Wear protective gloves, protective clothing, eye protection and face protection
	P284	In case of inadequate ventilation, wear respiratory protection
	P272	Contaminated work clothing should not be allowed out of the workplace
	P264	Wash all exposed external body areas thoroughly after handling
	P263	Avoid contact during pregnancy and while nursing
	P270	Do not eat, drink or smoke while handling this product
	P273	Avoid release to the environment
	P391	Clean up spillage
	P405	Store locked up
	P410+P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C
	P501	Dispose of contents/ container to authorised hazardous or special waste collection points in accordance with local regulation

Section 3. Composition/Information on Ingredients

Ingredient	CAS No.	Individual GHS classification	Concentration (% by Wt.)
Polymethylene polydiphenyl isocyanate	9016-87-9	Acute Inhalation Toxicity Category 4 Skin Irritation Category 2 Eye Irritation Category 2 Respiratory Sensitisation Category 1 Skin Sensitisation Category 1 STOT – RE Category 1	30 - 40
Alkanes C₁₄₋₁₇ -chloro-	85535-85-9	Lactation Effects Chronic Aquatic Hazard Category 1	10 – 20
Dimethylether	115-10-6	Flammable Gas Category 1A Eye Irritation Category 2	10 – 20
Isobutane	75-28-5	Flammable Gas Category 1A	1 - 10
Propane	74-98-6	Flammable gas Category 1A	1 – 10
Morpholine, 4,4'-(oxydi-2,1-ethanediyl(bis-	6425-39-4	Acute Oral Toxicity Category 4 Skin Irritation Category 2 Eye Irritation Category 2 Skin Sensitisation Category 1	< 1
Ingredients not contributing to classification			balance

This is a commercial product whose exact ratio of components may vary slightly. Minor quantities of other non-hazardous ingredients are also possible.

Section 4 First Aid Measures

NZ Poisons Centre 0800 POISON (0800 764 766) | NZ Emergency Services: 111

Eye contact:

Immediately hold the eyelids apart and flush the eye continuously for at least 15 minutes with fresh running water. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. Transport to hospital or doctor without delay. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin contact:

Flush skin and hair with running water (and soap if available). Remove any adhering solids with industrial skin cleansing cream. DO NOT use solvents. Seek medical attention in the event of irritation

Inhalation:

Remove to fresh air. Lay patient down. Keep warm and rested. Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. If breathing is shallow or has stopped, ensure clear airway and apply resuscitation, preferably with a demand valve resuscitator, bag valve mask device, or pocket mask as trained. Perform CPR if necessary. Transport to hospital, or doctor.

Ingestion:

Not considered a normal route of entry

General advice and advice for physicians:

Treat symptomatically.

Section 5 Fire-Fighting Measures

Extinguishing media:

Small quantities of water in contact with hot liquid may react violently with generation of a large volume of rapidly expanding hot sticky semi-solid foam. Presents additional hazard when fire fighting in a confined space. Cooling with flooding quantities of water reduces this risk. Water spray or fog may cause frothing and should be used in large quantities.

SMALL FIRE: Water spray, dry chemical or CO₂

LARGE FIRE: Water spray or fog.

Fire/ Explosion Hazard:

Moderate fire hazard when exposed to heat or flame. When heated to high temperatures decomposes rapidly generating vapour which pressures and may then rupture containers with release of flammable and highly toxic isocyanate vapour. Burns with acrid black smoke and poisonous fumes. Due to reaction with water producing CO₂-gas, a hazardous build-up of pressure could result if contaminated containers are re-sealed. Combustion yields traces of highly toxic hydrogen cyanide HCN, plus toxic nitrogen oxides NO_x and carbon monoxide. Liquid and vapour are highly flammable. Severe fire hazard when exposed to heat or flame. Vapour forms an explosive mixture with air. Severe explosion hazard, in the form of vapour, when exposed to flame or spark. Vapour may travel a considerable distance to source of ignition. Heating may cause expansion or decomposition with violent container rupture. Aerosol cans may explode on exposure to naked flames. Rupturing containers may rocket and scatter burning materials. Hazards may not be restricted to pressure effects. May emit acrid, poisonous or corrosive fumes. On combustion, may emit toxic fumes of carbon monoxide (CO)

Advice for fire-fighters:

Alert Fire Brigade and tell them location and nature of hazard. May be violently or explosively reactive. Wear breathing apparatus plus protective gloves. Consider evacuation. Fight fire from a safe distance, with adequate cover. If safe, switch off electrical equipment until vapour fire hazard removed. Use water delivered as a fine spray to control fire and cool adjacent area. DO NOT approach cylinders suspected to be hot. Cool fire-exposed cylinders with water spray from a protected location. If safe to do so, remove containers from path of fire.

FIRE FIGHTING PROCEDURES: The only safe way to extinguish a flammable gas fire is to stop the flow of gas. If the flow cannot be stopped, allow the entire contents of the cylinder to burn while cooling the cylinder and surroundings with water from a suitable distance. Extinguishing the fire without stopping the gas flow may permit the formation of ignitable or explosive mixtures with air. These mixtures may propagate to a source of ignition.

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SPECIAL HAZARDS Excessive pressures may develop in a gas cylinder exposed in a fire; this may result in explosion. Cylinders with pressure relief devices may release their contents as a result of fire and the released gas may constitute a further source of hazard for the fire-fighter. Cylinders without pressure-relief valves have no provision for controlled release and are therefore more likely to explode if exposed to fire.

Section 6 Accidental Release Measures

Minor Spills:

Clean up all spills immediately. Avoid breathing vapours and contact with skin and eyes. Wear protective clothing, impervious gloves and safety glasses. Shut off all possible sources of ignition and increase ventilation. Wipe up. If safe, damaged cans should be placed in a container outdoors, away from all ignition sources, until pressure has dissipated. Undamaged cans should be gathered and stowed safely.

Major Spills:

Avoid contamination with water, alkalis and detergent solutions. Material reacts with water and generates gas, pressurises containers with even drum rupture resulting. Clear area of all unprotected personnel and move upwind. Alert Emergency Authority and advise them of the location and nature of hazard. May be violently or explosively reactive. Wear full body clothing with breathing apparatus. Prevent by any means available, spillage from entering drains and watercourses. Consider evacuation. Shut off all possible sources of ignition and increase ventilation. No smoking or naked lights within area. Use extreme caution to prevent violent reaction. Stop leak only if safe to do so. Water spray or fog may be used to disperse vapour. DO NOT enter confined space where gas may have collected. Keep area clear until gas has dispersed. Remove leaking cylinders to a safe place. Release pressure under safe, controlled conditions. Burn issuing gas at vent pipes. DO NOT exert excessive pressure on valve; DO NOT attempt to operate damaged valve. Clear area of personnel and move upwind. Alert Fire Brigade and tell them location and nature of hazard. May be violently or explosively reactive. Wear breathing apparatus plus protective gloves. Prevent, by any means available, spillage from entering drains or water course. No smoking, naked lights or ignition sources. Increase ventilation. Stop leak if safe to do so. Water spray or fog may be used to disperse / absorb vapour. Absorb or cover spill with sand, earth, inert materials or vermiculite. If safe, damaged cans should be placed in a container outdoors, away from ignition sources, until pressure has dissipated. Undamaged cans should be gathered and stowed safely. Collect residues and seal in labelled drums for disposal.

Section 7 Handling and Storage

Handling:

Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Prevent concentration in hollows and sumps. DO NOT enter confined spaces until atmosphere has been checked. Avoid smoking, naked lights or ignition sources. Avoid contact with incompatible materials. When handling, DO NOT eat, drink or smoke. DO NOT incinerate or puncture aerosol cans. DO NOT spray directly on humans, exposed food or food utensils. Avoid physical damage to containers. Always wash hands with soap and water after handling. Work clothes should be laundered separately. Use good occupational work practice. Observe manufacturer's storage and handling recommendations contained within this SDS. Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

Storage:

Keep dry to avoid corrosion of cans. Corrosion may result in container perforation and internal pressure may eject contents of can. Store in original containers in approved flammable liquid storage area. DO NOT store in pits, depressions, basements or areas where vapours may be trapped. No smoking, naked lights, heat or ignition sources. Keep containers securely sealed. Contents under pressure. Store away from incompatible materials. Store in a cool, dry, well-ventilated area. Avoid storage at temperatures higher than 40 deg C. Store in an upright position. Protect containers against physical damage. Check regularly for spills and leaks. Observe manufacturer's storage and handling recommendations contained within this SDS.

Suitable Container:

Packaging as recommended by manufacturer. Check all containers are clearly labelled and free from leaks.

Section 8 Exposure Controls/Personal Protection

Exposure Limits

CAS no.	Substance or ingredient	WES-TWA		WES-STEL	
9016-87-9	Polymeric diphenylmethane diisocyanate	0.02 mg/m ³		0.07 mg/m ³	
115-10-6	Dimethylether	766 mg/m ³	400 ppm	958 mg/m ³	500 ppm

The TWA exposure value is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5-day working week. The STEL (Short Term Exposure Limit) is an exposure value that may be equalled (but should not be exceeded) for no longer than 15 minutes and

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should not be repeated more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The term "peak" is used when the TWA limit, because of the rapid action of the substance, should never be exceeded, even briefly.

Engineering Controls:

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use. Employers may need to use multiple types of controls to prevent employee overexposure. General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in specific circumstances. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Exposure controls:

Control	Protective measure
Eye	Safety glasses with side shields. Chemical goggles. Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent] 
Respiratory	Not generally required. If workplace exposure standards are likely to be exceeded, a Type KAX-P filter is recommended 
Skin	Wear chemical protective gloves, e.g., PE/EVAL/PE. Wear safety footwear or safety gumboots, e.g., Rubber NOTE: The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact. Contaminated leather items, such as shoes, belts and watchbands should be removed and destroyed. 

Section 9 Physical and Chemical Properties

General substance properties:

Property	Details
Appearance	Aerosol
Odour	Characteristic
pH	Not available
Vapour pressure	No data kPa
Vapour Density	> 1
Viscosity	No data mPa.s
Boiling Point	No data °C

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Volatile materials	Not available
Freezing/melting point	Not available
Water Solubility	Immiscible
Specific gravity/density	0.95 g/ml
Flash point	No data °C
Auto-ignition temperature	No data °C
Upper and lower flammability limits	Not available
Corrosiveness	Not available)

Section 10 Stability and Reactivity

Stability:

Unstable in the presence of incompatible materials. Product is considered stable. Hazardous polymerisation will not occur.

Conditions to avoid:

Incompatible materials to avoid:

Oxidising or reducing agents

Hazardous decomposition products:

Carbon monoxide (CO) carbon dioxide (CO₂) other pyrolysis products typical of burning organic material.

Section 11 Toxicological Information

Summary of Toxicity

Test	Data and symptoms of exposure
Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. There is strong evidence to suggest that this material can cause, if inhaled once, serious, irreversible damage of organs. Isobutane produces a dose dependent action and at high concentrations may cause numbness, suffocation, exhilaration, dizziness, headache, nausea, confusion, incoordination and unconsciousness in severe cases. The paraffin gases are practically not harmful at low doses. Higher doses may produce reversible brain and nerve depression and irritation. The vapour is discomforting WARNING: Intentional misuse by concentrating/inhaling contents may be lethal. The vapour/mist may be highly irritating to the upper respiratory tract and lungs; the response may be severe enough to produce bronchitis and pulmonary oedema. Possible neurological symptoms arising from isocyanate exposure include headache, insomnia, euphoria, ataxia, anxiety neurosis, depression and paranoia. Gastrointestinal disturbances are characterised by nausea and vomiting. Pulmonary sensitisation may produce asthmatic reactions ranging from minor breathing difficulties to severe allergic attacks; this may occur following a single acute exposure or may develop without warning for several hours after exposure. Sensitized people can react to very low doses and should not be allowed to work in situations allowing exposure to this material. Continued exposure of sensitised persons may lead to possible long term respiratory impairment. Inhalation hazard is increased at higher temperatures. There is strong evidence to suggest that this material can cause, if inhaled once, very serious, irreversible damage of organs. There is strong evidence to suggest that this material, on a single contact with skin, can cause very serious, irreversible damage of organs
Oral	Strong evidence exists that exposure to the material may cause irreversible damage (other than cancer, mutations and birth defects) following a single exposure by swallowing. Not normally a hazard due to physical form of product. Considered an unlikely route of entry in commercial/industrial environments Accidental

SAFETY DATASHEET

	ingestion of the material may be seriously damaging to the health of the individual; animal experiments indicate that ingestion of less than 40 gram may be fatal
Dermal	There is strong evidence to suggest that this material, on a single contact with skin, can cause serious, irreversible damage of organs. The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting. Open cuts abraded or irritated skin should not be exposed to this material Entry into the bloodstream through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected. Spray mist may produce discomfort Exposure to the material may result in a skin inflammation called chloracne. This is characterised by white- and blackheads, keratin cysts, spots, excessive discolouration. Skin contact with the material may damage the health of the individual; systemic effects may result following absorption.
Eye	Not considered to be a risk because of the extreme volatility of the gas. This material may produce eye irritation in some persons and produce eye damage 24 hours or more after instillation. Moderate inflammation may be expected with redness; conjunctivitis may occur with prolonged exposure.
Chronic	There has been concern that this material can cause cancer or mutations, but there is not enough data to make an assessment. Ample evidence from experiments exists that there is a suspicion this material directly reduces fertility. Based on experience with animal studies, exposure to the material may result in toxic effects to the development of the foetus, at levels which do not cause significant toxic effects to the mother. Long term exposure to morpholine and some related compounds may produce liver and kidney changes. Animal testing has shown evidence of chronic nose irritation and inflammation, and damage to the eye. This product contains a polymer with a functional group considered to be of high concern. Isothiocyanates may cause hypersensitivity of the skin and airways. Main route of exposure to the gas in the workplace is by inhalation. Persons with a history of asthma or other respiratory problems or are known to be sensitised, should not be engaged in any work involving the handling of isocyanates. The chemistry of reaction of isocyanates, as evidenced by MDI, in biological milieu is such that in the event of a true exposure of small MDI doses to the mouth, reactions will commence at once with biological macromolecules in the buccal region and will continue along the digestive tract prior to reaching the stomach. Reaction products will be a variety of polyureas and macromolecular conjugates with for example mucus, proteins and cell components

Ingredient	Oral LD₅₀	Dermal LD₅₀	Inhalation LC₅₀
ATE			
Polymeric diphenylmethane diisocyanate	43000 mg/kg	> 9400 mg/kg	0.49 mg/L/4H
Isobutane			> 13023 ppm/4H
C ₁₄₋₁₇ alkanes, chlorinated	> 2000 mg/kg	> 3125 mg/kg	> 12 mg/L/4H
Dimethylether			> 20000 ppm/4H
Propane			364726 ppm/4H
2,2'-dimorpholinodiethyl ether	> 2000 mg/kg	746 mg/Kg	

Section 12 Ecological Information

Summary of Ecotoxicity

Toxic to aquatic life with long lasting effects. Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high-water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters. Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

Ingredient	Fish	Crustacean	Algae
ATE			
Isobutane	LC _{50 96hr} 24 mg/L		EC _{50 96hr} 7.71 mg/L
C ₁₄₋₁₇ alkanes, chloro	LC _{50 96hr} > 5000 mg/L	LC _{50 96hr} 0.006 mg/L	EC _{50 96hr} 3.2 mg/L
Dimethylether	LC _{50 96hr} 1783 mg/L	LC _{50 96hr} 4000 mg/L	EC _{50 96hr} 154 mg/L
2,2'-dimorpholinodiethyl ether	LC _{50 96hr} > 2150 mg/L	LC _{50 96hr} > 100 mg/L	EC _{50 96hr} > 100 mg/L

SAFETY DATASHEET

Ingredient	Persistence Water/ Soil	Persistence Air	Bioaccumulation	Mobility
Isobutane	HIGH	HIGH	LOW	LOW
Dimethylether	LOW	LOW	LOW	HIGH
Propane	LOW	LOW	LOW	LOW
2,2-dimorpholinodiethyl ether	HIGH	HIGH	LOW	LOW

Section 13 Disposal Considerations

Disposal methods:

Containers may still present a chemical hazard/ danger when empty. Return to supplier for reuse/ recycling if possible. Otherwise: If container cannot be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill. Where possible retain label warnings and SDS and observe all notices pertaining to the product. DO NOT recycle spilled material. Consult State Land Waste Management Authority for disposal. Neutralise spill material carefully and decontaminate empty containers and spill residues with 10% ammonia solution plus detergent or a proprietary decontaminant prior to disposal. DO NOT seal or stopper drums being decontaminated as CO₂ gas is generated and may pressurise containers. Puncture containers to prevent re-use. Bury or incinerate residues at an approved site.

Ensure that the hazardous substance is disposed in accordance with the Hazardous Substances (Disposal) Notice 2017. Packages that have been in direct contact with the hazardous substance must be only disposed if the hazardous substance was appropriately removed and cleaned out from the package. The package must be disposed according to the manufacturer's directions taking into account the material it is made of. Packages which hazardous content have been appropriately treated and removed may be recycled. The hazardous substance must only be disposed if it has been treated by a method that changed the characteristics or composition of the substance and it is no longer hazardous. Only dispose to the environment if a tolerable exposure limit has been set for the substance. Only deposit the hazardous substance into or onto a landfill or sewage facility or incinerator, where the hazardous substance can be handled and treated appropriately.

Section 14 Transport Information



Marine Pollutant
HAZCHEM

Yes
not applicable

Land Transport UNDG

UN Number	1950
Shipping Name	AEROSOLS
Class or division	2.1
Subsidiary Risk	Not applicable
UN Packing Group	not applicable
Environmental Hazard	Environmentally Hazardous
Special Provisions	63 190 277 327 344 361
Limited Quantities	1000 ml

Air Transport IATA

UN/ID Number	1950
Shipping Name	AEROSOLS, FLAMMABLE
ICAO/IATA Class	2.2
ICAO/IATA Subrisk	Not applicable
ERG Code	10L
Packing Group	not applicable
Environmental Hazard	Environmentally Hazardous
Special provision	A146 A167 A802
Cargo only	
Packing instructions	203

Maximum Qty/pack **150 Kg**
 Passenger and Cargo
 Packing instructions **203**
 Maximum Qty/pack **75 Kg**
 Passenger & Cargo Limited Quantity
 Packing instructions **Y203**
 Maximum Qty/pack **30Kg G**

Marine Transport IMDG

UN Number **1950**
 Shipping Name **AEROSOLS**
 IMDG Class **2,1**
 IMDG Subrisk Not applicable
 Packing Group not applicable
 Environmental Hazard **Marine Pollutant**
 EmS Number **F-D S-U**
 Special provisions **63 190 277 327 344 361 959**
 Limited quantities **1000 ml**

Section 15 Regulatory Information

HSNO approval number and Group Standard:

HSR002517 **Aerosols, Flammable, Carcinogenic**

Group Standard conditions and other regulations:

Condition	Requirement
SDS	Required
Emergency plan	Required when quantities exceed 3000 Lt water capacity
Certified handler	Not required
Tracking	Not applicable
Bunding and secondary containment	Not applicable
Signage	Required when quantities exceed 3000Lt water equivalent
Location Compliance certificate	Flammable Aerosol Category 1 when quantities exceed 3000Lt water equivalent
Hazardous Atmosphere Zone	Required as per AS/NZS60079.10
Fire extinguisher	1 required when quantities exceed 3000Lt water equivalent

National Inventories

Y = All ingredients are on the inventory

Australia	AICS	Y
Canada	DSL	Y
Canada	NDSL	N
China	IECSC	Y
Europe	EINEC/ELINCS/NLP	N
Japan	ENCS	Y
Korea	KECI	Y
New Zealand	NZIOC	Y
Philippines	PICCS	Y
USA	TSCA	Y
Taiwan	TCSI	Y

Mexico	INSQ	N
Vietnam	NCI	Y
Russia	ARIPS	Y

Section 16 Other Information

Revision History:

June 2024	Reviewed and format updated
July 2020	Reformulated and reformatted
June 2016	Origination

Abbreviations:

Abbreviation	Description
CAS number	Number assigned to chemical in the Chemical Abstracts Service registry
HAZCHEM code	Code used by fire-fighters to determine correct method of action in the case of fire
HSNO	Hazardous Substances and New Organisms (Act)
ICAO Technical Instructions	International Civil Aviation Organization Technical Instructions
IMDG code	International Maritime Dangerous Goods code controlled by the International Maritime Organization (IMO)
LC ₅₀	Lethal concentration 50% - concentration fatal to 50% of the tested population
LD ₅₀	Lethal dose 50% - dose fatal to 50% of the tested population
NZS 5433:2020	New Zealand Standard 5433 (Standard for the Transport of Dangerous Goods on Land)
SDS	Safety data sheet
STEL	Short term exposure limit
TWA	Time weighted average (typically measured as 8 hours)
UN number	United Nations number
WES	Workplace exposure standard

References

Chemical properties and GHS classifications derived from the New Zealand chemical classification information database (CCID).

www.epa.govt.nz.

Workplace exposure limits derived from Workplace Exposure Standards and Biological Exposure Indices 13th Edition (April 2022).

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material in combination with any other material or in any process, unless specified in the text.

This SDS was prepared by Collievale Enterprises in accord with the Hazardous Substances (Safety Data Sheets) Notice 2020

admin@collievale.com Phone +64 7 5432428

End of SDS

CHUBB ABE DRY CHEMICAL POWDER FIRE EXTINGUISHER

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name	CHUBB ABE DRY CHEMICAL POWDER FIRE EXTINGUISHER
Synonym(s)	ABE DRY CHEMICAL POWDER • CHUBB ABE40 DRY CHEMICAL POWDER FIRE EXTINGUISHER • FLAMEGUARD R ABE DRY CHEMICAL POWDER FIRE EXTINGUISHER

1.2 Uses and uses advised against

Use(s)	FIRE EXTINGUISHING AGENT • FIRE FIGHTING
--------	--

1.3 Details of the supplier of the product

Supplier name	CHUBB NEW ZEALAND
Address	3 Fisher Crescent, Mount Wellington, Auckland, New Zealand, 1060
Telephone	0800 20 30 40
Fax	Not supplied
Email	Not supplied
Website	http://www.chubb.co.nz

1.4 Emergency telephone number(s)

Emergency	02 7704 9701 • (National Poisons Centre) 0800 764 766
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2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

NON HAZARDOUS ACCORDING TO NZ ENVIRONMENTAL PROTECTION AUTHORITY CRITERIA

HSNO classification(s)

Compressed Gases	Contains gas under pressure; may explode if heated.
------------------	---

2.2 GHS Label elements

Signal word

WARNING

Pictograms



Hazard statement(s)

H280	Contains gas under pressure; may explode if heated.
------	---

Prevention statement(s)

P103	Read label before use.
------	------------------------

Storage statement(s)

P410 + P403	Protect from sunlight. Store in a well-ventilated place.
-------------	--

2.3 Other Hazards

None known.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

Ingredient	CAS number	EC number	Content
MICA	12001-26-2	601-648-2	<10%
NITROGEN	7727-37-9	231-783-9	<2%
NON HAZARDOUS INGREDIENTS	Not Available	Not Available	Remainder

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye	If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.
Inhalation	If inhaled, remove from contaminated area. Apply artificial respiration if not breathing.
Skin	If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water.
Ingestion	For advice, contact the National Poisons Centre on 0800 764 766 (0800 POISON) or a doctor (at once). If swallowed, do not induce vomiting. Ingestion is considered unlikely due to product form.
First aid facilities	Eye wash facilities should be available.

CHUBB ABE DRY CHEMICAL POWDER FIRE EXTINGUISHER**4.2 Most important symptoms and effects, both acute and delayed**

See Section 11 for more detailed information on health effects and symptoms.

4.3 Immediate medical attention and special treatment needed

Treat symptomatically.

5. FIREFIGHTING MEASURES**5.1 Extinguishing media**

Extinguishing agent.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve toxic gases (phosphorus/ nitrogen oxides, ammonia) when heated to decomposition.

5.3 Advice for firefighters

No fire or explosion hazard exists.

5.4 Hazchem code

None allocated

6. ACCIDENTAL RELEASE MEASURES**6.1 Personal precautions, protective equipment and emergency procedures**

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE**7.1 Precautions for safe handling**

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in an area designated for fire extinguishers. Signs should indicate fire extinguisher location. Extinguishers should be kept cool and dry and should not come into contact with any chemicals. Check regularly to ensure extinguishers are in good working order.

7.3 Specific end use(s)

None known.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION**8.1 Control parameters**

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
MICA	WES [NZ]	--	3	--	--
Nitrogen	WES [NZ]	Asphyxiant			

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering Controls

Avoid inhalation. Use in well ventilated areas. In a fire situation, ventilation may be difficult to control. Contact emergency personnel. Maintain dust / fume levels below the recommended exposure standard.

PPE

Eye/Face

Wear dust-proof goggles.

Hand

Wear PVC or rubber gloves.

Body

No PPE specified.

Respiratory

At high dust levels, wear a Class P1 (Particulate) respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	PEACH COLOURED POWDER
Odour	ODOURLESS
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	> 100°C
Evaporation rate	NOT AVAILABLE
pH	NOT AVAILABLE
Vapour density	NOT AVAILABLE
Relative density	
Solubility (water)	SLIGHTLY SOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

9.2 Other information

None known.

10. STABILITY AND REACTIVITY

10.1 Reactivity

Carefully review all information in sections 10.2 to 10.6.

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization will not occur.

10.4 Conditions to avoid

Avoid contact with incompatible substances.

10.5 Incompatible materials

Incompatible with alkalis (e.g. sodium hydroxide).

10.6 Hazardous decomposition products

May evolve toxic gases (phosphorus/ nitrogen oxides, ammonia) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity	Information available for the product: Based on available data, the classification criteria are not met.
Skin	Contact may result in irritation, redness, pain and rash.
Eye	Contact may result in irritation, lacrimation, pain and redness.
Sensitisation	Not classified as causing skin or respiratory sensitisation.
Mutagenicity	Not classified as a mutagen.

CHUBB ABE DRY CHEMICAL POWDER FIRE EXTINGUISHER

Carcinogenicity	Not classified as a carcinogen.
Reproductive	Not classified as a reproductive toxin.
STOT - single exposure	Over exposure may result in irritation of the nose and throat, with coughing.
STOT - repeated exposure	Not classified as causing organ damage from repeated exposure.
Aspiration	Not classified as causing aspiration.

12. ECOLOGICAL INFORMATION**12.1 Toxicity**

No information provided.

12.2 Persistence and degradability

No information provided.

12.3 Bioaccumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Results of PBT and vPvB assessment

No information provided.

12.6 Other adverse effects

Phosphate and ammonium salts are plant and algae nutrients. If excess phosphates or ammonium compounds are released to soil or water, the ecological system may be disturbed causing algal blooms and resultant fish toxicity.

13. DISPOSAL CONSIDERATIONS**13.1 Waste treatment methods**

Waste disposal	No special precautions are required for the disposal of this product.
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD ACCORDING TO LAND TRANSPORT RULE: DANGEROUS GOODS 2005; NZS 5433:2007, UN, IMDG OR IATA



	Land Transport (NZS 5433)	Sea Transport (IMDG/IMO)	Air Transport (IATA/ICAO)
14.1 UN number	1044	1044	1044
14.2 UN proper shipping name	FIRE EXTINGUISHERS with compressed gas		
14.3 Transport hazard classes	2.2	2.2	2.2
14.4 Packing group	None allocated	None allocated	None allocated

14.5 Environmental hazards Not a Marine Pollutant.

14.6 Special precautions for user

Hazchem Code	None allocated
EMS	F-C, S-V

15. REGULATORY INFORMATION**15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

Approval Code	HSR002533
Group Name	Compressed Gases (Non-hazardous) Group Standard 2006
Inventory listing(s)	NEW ZEALAND: NZIoC (New Zealand Inventory of Chemicals) All components are listed on the NZIoC inventory, or are exempt.

15.2 Chemical safety assessment

No information provided.

16. OTHER INFORMATION

Additional information	HEALTH EFFECTS FROM EXPOSURE: It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate. PERSONAL PROTECTIVE EQUIPMENT GUIDELINES: The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.																																										
Abbreviations	<table> <tr><td>ACGIH</td><td>American Conference of Governmental Industrial Hygienists</td></tr> <tr><td>CAS #</td><td>Chemical Abstract Service number - used to uniquely identify chemical compounds</td></tr> <tr><td>CCID</td><td>Chemical Classification and Information Database (HSNO)</td></tr> <tr><td>CNS</td><td>Central Nervous System</td></tr> <tr><td>EC No.</td><td>EC No - European Community Number</td></tr> <tr><td>EMS</td><td>Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)</td></tr> <tr><td>EPA</td><td>Environmental Protection Authority [New Zealand]</td></tr> <tr><td>GHS</td><td>Globally Harmonized System</td></tr> <tr><td>HSNO</td><td>Hazardous Substances and New Organisms</td></tr> <tr><td>IARC</td><td>International Agency for Research on Cancer</td></tr> <tr><td>LC50</td><td>Lethal Concentration, 50% / Median Lethal Concentration</td></tr> <tr><td>LD50</td><td>Lethal Dose, 50% / Median Lethal Dose</td></tr> <tr><td>mg/m³</td><td>Milligrams per Cubic Metre</td></tr> <tr><td>OEL</td><td>Occupational Exposure Limit</td></tr> <tr><td>pH</td><td>relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).</td></tr> <tr><td>ppm</td><td>Parts Per Million</td></tr> <tr><td>STEL</td><td>Short-Term Exposure Limit</td></tr> <tr><td>STOT-RE</td><td>Specific target organ toxicity (repeated exposure)</td></tr> <tr><td>STOT-SE</td><td>Specific target organ toxicity (single exposure)</td></tr> <tr><td>TLV</td><td>Threshold Limit Value</td></tr> <tr><td>TWA</td><td>Time Weighted Average</td></tr> </table>	ACGIH	American Conference of Governmental Industrial Hygienists	CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds	CCID	Chemical Classification and Information Database (HSNO)	CNS	Central Nervous System	EC No.	EC No - European Community Number	EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)	EPA	Environmental Protection Authority [New Zealand]	GHS	Globally Harmonized System	HSNO	Hazardous Substances and New Organisms	IARC	International Agency for Research on Cancer	LC50	Lethal Concentration, 50% / Median Lethal Concentration	LD50	Lethal Dose, 50% / Median Lethal Dose	mg/m ³	Milligrams per Cubic Metre	OEL	Occupational Exposure Limit	pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).	ppm	Parts Per Million	STEL	Short-Term Exposure Limit	STOT-RE	Specific target organ toxicity (repeated exposure)	STOT-SE	Specific target organ toxicity (single exposure)	TLV	Threshold Limit Value	TWA	Time Weighted Average
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TWA	Time Weighted Average																																										
Report Status	This ChemAlert report has been independently compiled by RMT's scientific department utilising the original Safety Data Sheet ('SDS') for the product provided to RMT by the manufacturer. The information is based on the latest chemical and toxicological research and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. It is an independent collation by RMT of information obtained from the original SDS for this product. Its content has not been authorised or verified by the manufacturer / distributor of the chemical to which it relates. This ChemAlert report does not constitute the manufacturer's original SDS and is not intended to be a replacement for same. It is provided to subscribers of ChemAlert as a reference tool only, is not all-inclusive and does not represent any guarantee as to the properties of the product. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer. While RMT has taken all due care to include accurate and up-to-date information in this ChemAlert report, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this ChemAlert report.																																										
Prepared By	Risk Management Technologies 5 Ventnor Ave, West Perth Western Australia 6005 Phone: +61 8 9322 1711 Fax: +61 8 9322 1794 Email: info@rmt.com.au Web: rmtglobal.com																																										

CHUBB ABE DRY CHEMICAL POWDER FIRE EXTINGUISHER

AMBER

Last Reviewed: 12-Apr-2023
Date Printed: 21-Apr-2023
Based on SDS dated: 12-Apr-2023

End of Report



NEW ZEALAND MADE FOR THE TRADE

SAFETY DATA SHEET

Section 1 – IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: Chemz Hi-Viz Fluoro Multi Spray Marker Aerosol [400ml]
All Colours including Up Side Down & Right Way Up Aerosols

Product Code: 8114, 8124, 8134, 8144, 8154, 8164, 8174, 8214, 8224, 8234, 8244, 8254, 8394, 8264, 8274

Uses: High visibility paint aerosol for all marking applications.

Company: Chemz Limited

Address: 80 Rangitane Place
Whakatu, Hastings

Telephone: +64 6 877 9690

Email: info@chemz.co.nz

Emergency Number 24 hr: 0800 764 766 (0800 POISON) National Poison Centre

Section 2 – HAZARDS IDENTIFICATION

Classification of the product

Considered a hazardous substance according to the Hazardous Substance (Minimum Degrees of Hazard) Regulations NZ.
Classified as a dangerous goods for transport purposes.

GHS Classifications:

Flammable aerosol Category 1
Skin irritation Category 2
Eye irritation Category 2
STOT (Repeated exposure) Category 2
Aquatic toxicity (Chronic) Category 2

HSNO Classifications:

2.1.2A Extremely flammable aerosol
6.3A Irritating to the skin
6.4A Irritating to the eye
6.9B Harmful to human target organs or systems (inhaled)
9.1B Ecotoxic in the aquatic environment with lasting effects



Signal Words: Danger

Hazard Statements

H222 Extremely flammable aerosol.
H229 Pressurised container: May burst if heated.
H315 Causes skin irritation.
H320 Causes serious eye irritation.
H373 May cause damage to organs (repeated exposure).
H411 Toxic to aquatic life with long lasting effects.

Section 3 – COMPOSITION INFORMATION ON INGREDIENTS

Hazardous Ingredients	CAS No.	Proportion, % m/m
Heptanes	64742-49-0	30 - 60
2-Propanone	67-64-1	1 - 10
2 Propanol	67-63-0	1 - 10



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Hydrocarbon propellant (LPG - Propane, Butane)	68476-85-7	30 - 60
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Section 4 – FIRST AID MEASURES

If medical advice is needed, have product container or label at hand.

If exposed or if you feel unwell: Call a POISON CENTRE or doctor.

Eye contact:	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Skin contact:	IF ON SKIN: Wash with plenty of soap and water. Direct contact may cause irritation in sensitive individuals. If skin irritation or rash occurs: Get medical advice/ attention.
Inhalation:	IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTRE or doctor.
Ingestion:	IF SWALLOWED: Immediately call a POISON CENTRE or doctor. Do NOT induce vomiting. Where there is risk of vomiting, lean person forward or place on left side to avoid aspiration of product into lungs. Obtain immediate medical attention.
Notes to physician:	Treat symptomatically and supportively. No specific antidote.

Section 5 – FIRE-FIGHTING MEASURES

General fire hazards	Pressurised, extremely flammable aerosol.
Specific hazards:	Containers can build up pressure if exposed to heat and/or fire and may explode. Vapours may form an explosive mixture with air. Vapours can travel to a source of ignition and flash back. May float and be re-ignited on surface water.
Further advice:	On burning may emit toxic fumes including those of carbon monoxide and carbon dioxide. Fire fighters to wear self-contained breathing apparatus if risk of exposure to products of combustion.
Extinguishing media:	Use water spray, fog, or foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water. Do not discharge extinguishing waters into the aquatic environment.
Protective equipment	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.
Fire fighting instructions	In the event of fire, cool containers with water spray to prevent vapour pressure build up. Move containers from fire area if you can do so without risk. Runoff can cause environmental damage.
Hazchem Code:	2YE

Section 6 – ACCIDENTAL RELEASE MEASURES

Spills:	Wear appropriate personal protective equipment. Clear area of unprotected personnel. Remove all sources of ignition. Avoid breathing vapour. Ventilate area where possible. If safe, damaged cans should be placed in a container outdoors, away from all ignition sources, until pressure has dissipated. Undamaged cans should be gathered and stowed safely.
Environmental precautions:	Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.
Methods for cleaning up:	Soak up larger spills with sand or other suitable absorbent. Collect into suitable containers for disposal. Wash the contaminated area with excess water, do not release washings to the environment.
Other issues relating to spills:	Clean up in accordance with all applicable regulations.

Section 7 – HANDLING AND STORAGE

Handling Precautions:	Read product label before use. Keep out of reach of children.
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This product is highly flammable. Keep away from heat and open flames/hot surfaces. No smoking. Do not spray on an open flame or other ignition source. Pressurised container: Do not pierce or burn, even after use.

Use in a well-ventilated area. Avoid breathing spray. Wash hands with soap and water after handling.

Storage:

Protect from sunlight. Do not expose to temperatures exceeding 50 °C. Store in a well ventilated, cool, dry place. Keep away from heat, sparks, and flame. Store locked up.

Section 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits:

No value assigned for product. Exposure standards for constituents (NZ WES);

Material	TWA, mg/m ³	STEL, mg/m ³
2-Propanone	1,185	2,375
Heptanes	1,200	1,600
2-Propanol	983	1,230
LPG (Liquefied petroleum gas – butane, propane)	1,800	-

Additional Information:

Wash hands before eating, drinking and smoking.

Beware: Deliberately sniffing or inhaling concentrated contents can be harmful or fatal. Avoid breathing spray.

Engineering Controls:

General exhaust is adequate under normal operating conditions. Ventilation equipment and lighting should be explosion-resistant.

Protective Equipment:

In an industrial environment: gloves, safety glasses or chemical goggles are recommended. Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace.

In case of inadequate ventilation wear respiratory protection. If TWA is exceeded, wear an approved respirator with a type A filter.

Section 9 – PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Coloured liquid spray.

pH: Not applicable.

Vapour Density: > 1 (Air =1)

Vapour Pressure, kPa: 300 - 600

Boiling Point, °C: Not applicable.

Melting Point, °C: Not applicable.

Specific Gravity: About 0.81

Flash Point, °C: < 0 (propellant)

Explosion Limit, % v/v: LEL 1.2% UEL 9.5%

Autoignition Temp, °C: Not applicable.

VOC Content, g/L: 525

Solubility: Not soluble in water.

Section 10 – STABILITY AND REACTIVITY

Stability: Stable under normal conditions of use. Not reactive. Avoid oxidisers. Avoid elevated temperatures.

Section 11 – TOXICOLOGICAL INFORMATION

Basis for Assessment: Information given is based on product testing, and/or similar products, and/or components.



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Acute Oral Toxicity:	LD ₅₀ estimated to be > 5,000 mg/kg (based on component mixture, excluding propellant).
Acute Dermal Toxicity:	LD ₅₀ estimated to be > 5,000mg/kg (based on component mixture, excluding propellant).
Acute Inhalation Toxicity:	LC ₅₀ estimated to be > 20 mg/L, Rat 4 hour (based on component mixture). Beware: Deliberately sniffing or inhaling concentrated contents can be harmful or fatal.
Skin Irritation:	May cause skin irritation. Prolonged/repeated contact may cause defatting of the skin and dermatitis.
Eye Irritation:	Spray may be seriously irritating to the eye. Expected to be reversible in 7 - 21 days.
Respiratory Irritation:	Inhalation of vapours or mists may cause irritation to the respiratory system.
Repeated Dose Toxicity:	Prolonged contact with product may result in irritant contact dermatitis.
Sensitisation:	Product is not expected to be a contact or respiratory sensitiser.
Mutagenicity:	Not expected to be mutagenic.
Carcinogenicity:	Not expected to be carcinogenic.
Reproductive toxicity:	Not expected to be toxic.
Additional Information:	None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, OSHA or ACGIH as being carcinogens.

Section 12 – ECOTOXICITY INFORMATION

Ecotoxicity:	Ecotoxic in the aquatic environment with long lasting effects.
Mobility:	Product is volatile and will rapidly evaporate to the air if released into water.
Persistence/degradability:	More volatile components are expected to degrade in air. Some components may be persistent and may bioaccumulate.

Section 13 – DISPOSAL CONSIDERATIONS

Material Disposal:	Product wastes should be disposed of in accordance with applicable regulations. Do not dispose into the environment, in drains or in water courses. Large quantities should be degassed by an aerosol recycler. Do not dispose of large quantities of pressurised aerosols in landfills. Incineration in an authorised facility is suggested.
Container Disposal:	Recycle empty container if possible. Product containers are also considered wastes of the same class of the contents and should be disposed of in accordance with applicable regulations.

Section 14 – TRANSPORT INFORMATION

Transport:	Classified as a Dangerous Good for transport purposes. Class 2.1 should not be loaded on the same vehicle as Classes 1, 3 (where both are in bulk), 4, 5, and 7. They may be loaded with Classes 3, 6, 8, 9, foodstuffs and foodstuff empties.
Proper Shipping Name:	Aerosols
UN Number:	1950
Dangerous Goods Class:	2.1
Transport Labels Required:	Class 2 Flammable
	
Subsidiary Risk:	Not applicable
Packing Group:	Not applicable



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Marine Pollutant:	Yes
EMS Number	F-D, S-U (UN 1950 Flammable aerosols)
DG Segregation:	This product is classified as a Dangerous Goods. Please consult the Land Transport Rule: Dangerous Goods 2005, and NZS 5433:2012 Transport of Dangerous Goods on Land for information.

Section 15 – REGULATORY INFORMATION

Inventory Listing	NZIOC (New Zealand Inventory of Chemicals); All components of this product are listed.
SDS regulations	This Safety Data Sheet was prepared in accordance with the EPA Hazardous Substances (Safety Data Sheets) Notice July 2017.
EPA Approval Number:	HSR002515 Aerosols (Flammable) Group Standard 2020.
EPA Hsno Controls:	Refer to www.epa.govt.nz for information on Controls. This substance is to be managed using the conditions specified in an applicable Group Standard.

Section 16 – OTHER INFORMATION

Additional information	Health Effects from Exposure: It should be noted that the effects from exposure to this product will depend on several factors including: frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.
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Abbreviations	AICS	Australian Inventory of Chemical Substances
	ADG	Australian Code for the Transport of Dangerous Goods by Road and Rail
	CAS	Chemical Abstract Service number
	EMS	Emergency Response Procedures for Ships Carrying Dangerous Goods
	EPA	Environmental Protection Agency
	GHS	Globally Harmonized System
	IARC	International Agency for Research on Cancer
	IATA	International Air Transport Association
	IMDG	International Maritime Dangerous Goods
	LC ₅₀	Lethal Concentration, 50% / Median Lethal Concentration
	LD ₅₀	Lethal Dose, 50% / Median Lethal Dose
	LEL	Lower Explosion Limit
	mg/m ³	Milligrams per Cubic Metre
	NZIOC	New Zealand Inventory of Chemicals
	N.O.S.	Not otherwise specified
	OEL	Occupational Exposure Limit
	PEL	Permissible Exposure Limit
	STEL	Short-Term Exposure Limit
	STOT-RE	Specific target organ toxicity (repeated exposure)
	STOT-SE	Specific target organ toxicity (single exposure)
	TLV	Threshold Limit Value
	TWA	Time Weighted Average
	UEL	Upper Explosion Limit

This SDS summarises our best knowledge of the health and safety hazard information. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. Since we cannot control the conditions under which the product may be used, each user must review this SDS in the context of how the user intends to use the product. End of msds.



CRC Freeze Spray

CRC Industries (CRC Industries New Zealand)

Chemwatch: 5321-23

Version No: 4.1

Safety Data Sheet according to the Health and Safety at Work (Hazardous Substances) Regulations 2017

Chemwatch Hazard Alert Code: 1

Issue Date: 16/08/2022

Print Date: 25/04/2024

S.GHS.NZL.EN

SECTION 1 Identification of the substance / mixture and of the company / undertaking

Product Identifier

Product name	CRC Freeze Spray
Chemical Name	Not Applicable
Synonyms	2072
Proper shipping name	AEROSOLS
Chemical formula	Not Applicable
Other means of identification	Not Available

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Air blower. Application is by spray atomisation from a hand held aerosol pack
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Details of the manufacturer or supplier of the safety data sheet

Registered company name	CRC Industries (CRC Industries New Zealand)
Address	10 Highbrook Drive East Tamaki Auckland New Zealand
Telephone	+64 9 272 2700
Fax	+64 9 274 9696
Website	www.crc.co.nz
Email	info.nz@crc.co.nz

Emergency telephone number

Association / Organisation	CRC Industries (CRC Industries New Zealand)	CHEMWATCH EMERGENCY RESPONSE (24/7)
Emergency telephone numbers	NZ Poisons Centre 0800 POISON (0800 764 766)	+64 800 700 112
Other emergency telephone numbers	111 (NZ Emergency Services)	+61 3 9573 3188

Once connected and if the message is not in your preferred language then please dial 01

SECTION 2 Hazards identification

Classification of the substance or mixture

Classification ^[1]	Aerosols Category 3
Legend:	1. Classified by Chemwatch; 2. Classification drawn from CCID EPA NZ; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI
Determined by Chemwatch using GHS/HSNO criteria	Not Available

Label elements

Hazard pictogram(s)	Not Applicable
Signal word	Warning

Hazard statement(s)

H229	Pressurised container: May burst if heated.
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Precautionary statement(s) Prevention

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P251	Do not pierce or burn, even after use.

Precautionary statement(s) Response

Not Applicable

Precautionary statement(s) Storage

P410+P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.
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Precautionary statement(s) Disposal

Not Applicable

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
29118-24-9	>60	<u>1,3,3,3-tetrafluoropropene</u>
Legend: 1. Classified by Chemwatch; 2. Classification drawn from CCID EPA NZ; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 4. Classification drawn from C&L; * EU IOELVs available		

SECTION 4 First aid measures

Description of first aid measures

Eye Contact	If aerosols come in contact with the eyes: ▶ Immediately hold the eyelids apart and flush the eye with fresh running water. ▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▶ Seek medical attention without delay; if pain persists or recurs seek medical attention. ▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If solids or aerosol mists are deposited upon the skin: ▶ Flush skin and hair with running water (and soap if available). ▶ Remove any adhering solids with industrial skin cleansing cream. ▶ DO NOT use solvents. ▶ Seek medical attention in the event of irritation.
Inhalation	If aerosols, fumes or combustion products are inhaled: ▶ Remove to fresh air. ▶ Lay patient down. Keep warm and rested. ▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▶ If breathing is shallow or has stopped, ensure clear airway and apply resuscitation, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▶ Transport to hospital, or doctor.
Ingestion	Not considered a normal route of entry. ▶ Avoid giving milk or oils. ▶ Avoid giving alcohol.

Indication of any immediate medical attention and special treatment needed

for intoxication due to Freons/ Halons;

A: Emergency and Supportive Measures

- ▶ Maintain an open airway and assist ventilation if necessary
- ▶ Treat coma and arrhythmias if they occur. Avoid (adrenaline) epinephrine or other sympathomimetic amines that may precipitate ventricular arrhythmias. Tachyarrhythmias caused by increased myocardial sensitisation may be treated with propranolol, 1-2 mg IV or esmolol 25-100 microgm/kg/min IV.
- ▶ Monitor the ECG for 4-6 hours

B: Specific drugs and antidotes:

- ▶ There is no specific antidote

C: Decontamination

- ▶ Inhalation; remove victim from exposure, and give supplemental oxygen if available.

- Ingestion; (a) Prehospital: Administer activated charcoal, if available. **DO NOT** induce vomiting because of rapid absorption and the risk of abrupt onset CNS depression. (b) Hospital: Administer activated charcoal, although the efficacy of charcoal is unknown. Perform gastric lavage only if the ingestion was very large and recent (less than 30 minutes)

D: Enhanced elimination:

- There is no documented efficacy for diuresis, haemodialysis, haemoperfusion, or repeat-dose charcoal.

POISONING and DRUG OVERDOSE, Californian Poison Control System Ed. Kent R Olson; 3rd Edition

- Do not administer sympathomimetic drugs unless absolutely necessary as material may increase myocardial irritability.
- No specific antidote.
- Because rapid absorption may occur through lungs if aspirated and cause systematic effects, the decision of whether to induce vomiting or not should be made by an attending physician.
- If lavage is performed, suggest endotracheal and/or esophageal control.
- Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach.
- Treatment based on judgment of the physician in response to reactions of the patient

Treat symptomatically.

SECTION 5 Firefighting measures

Extinguishing media

SMALL FIRE:

- Water spray, dry chemical or CO2

LARGE FIRE:

- Water spray or fog.

Special hazards arising from the substrate or mixture

Fire Incompatibility	‣ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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Advice for firefighters

Fire Fighting	‣ Alert Fire Brigade and tell them location and nature of hazard. ‣ May be violently or explosively reactive. ‣ Wear breathing apparatus plus protective gloves. ‣ Prevent, by any means available, spillage from entering drains or water course.
Fire/Explosion Hazard	‣ Non combustible. ‣ Not considered to be a significant fire risk. ‣ Heating may cause expansion or decomposition leading to violent rupture of containers. ‣ Aerosol cans may explode on exposure to naked flames. Decomposition may produce toxic fumes of: carbon dioxide (CO2) hydrogen fluoride other pyrolysis products typical of burning organic material. Contains low boiling substance: Closed containers may rupture due to pressure buildup under fire conditions.

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	‣ Clean up all spills immediately. ‣ Avoid breathing vapours and contact with skin and eyes. ‣ Wear protective clothing, impervious gloves and safety glasses. ‣ Shut off all possible sources of ignition and increase ventilation.
Major Spills	‣ Clear area of personnel and move upwind. ‣ Alert Fire Brigade and tell them location and nature of hazard. ‣ May be violently or explosively reactive. ‣ Wear breathing apparatus plus protective gloves.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	‣ Avoid all personal contact, including inhalation. ‣ Wear protective clothing when risk of exposure occurs.
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	▶ Use in a well-ventilated area. ▶ Prevent concentration in hollows and sumps.
Other information	▶ Keep dry to avoid corrosion of cans. Corrosion may result in container perforation and internal pressure may eject contents of can

Conditions for safe storage, including any incompatibilities

Suitable container	▶ DO NOT use aluminium or galvanised containers ▶ Aerosol dispenser. ▶ Check that containers are clearly labelled.
Storage incompatibility	▶ Avoid reaction with oxidising agents

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Not Available

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
1,3,3,3-tetrafluoropropene	1,400 ppm	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
1,3,3,3-tetrafluoropropene	Not Available	Not Available

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.
Individual protection measures, such as personal protective equipment	
Eye and face protection	▶ No special equipment for minor exposure i.e. when handling small quantities. ▶ OTHERWISE: For potentially moderate or heavy exposures: ▶ Safety glasses with side shields. ▶ NOTE: Contact lenses pose a special hazard; soft lenses may absorb irritants and ALL lenses concentrate them.
Skin protection	See Hand protection below
Hands/feet protection	▶ No special equipment needed when handling small quantities. ▶ OTHERWISE: ▶ For potentially moderate exposures: ▶ Wear general protective gloves, eg. light weight rubber gloves. ▶ For potentially heavy exposures: ▶ Wear chemical protective gloves, eg. PVC. and safety footwear.
Body protection	See Other protection below
Other protection	No special equipment needed when handling small quantities. OTHERWISE: ▶ Overalls. ▶ Skin cleansing cream. ▶ Eyewash unit.

Respiratory protection

Type AX Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant. Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

Required minimum protection factor	Maximum gas/vapour concentration present in air p.p.m. (by volume)	Half-face Respirator	Full-Face Respirator
up to 10	1000	AX-AUS / Class1	-
up to 50	1000	-	AX-AUS / Class 1

up to 50	5000	Airline *	-
up to 100	5000	-	AX-2
up to 100	10000	-	AX-3
100+			Airline**

* - Continuous Flow ** - Continuous-flow or positive pressure demand

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

Aerosols, in common with most vapours/ mists, should never be used in confined spaces without adequate ventilation. Aerosols, containing agents designed to enhance or mask smell, have triggered allergic reactions in predisposed individuals.

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Colourless liquid (aerosol) with no characteristic odour; does not mix with water.		
Physical state	Liquid	Relative density (Water = 1)	1.17
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Applicable
pH (as supplied)	Not Applicable	Decomposition temperature (°C)	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	Not Available	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	Not Applicable	Taste	Not Available
Evaporation rate	Fast	Explosive properties	Not Available
Flammability	Not Applicable	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Applicable	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Applicable	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Immiscible	pH as a solution (1%)	Not Applicable
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	▸ Elevated temperatures. ▸ Presence of open flame. ▸ Product is considered stable. ▸ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled	Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo. Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual. There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.
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	Exposure to fluorocarbons can produce non-specific flu-like symptoms such as chills, fever, weakness, muscle pain, headache, chest discomfort, sore throat and dry cough with rapid recovery. High concentrations can cause irregular heartbeats and a stepwise reduction in lung capacity. Inhalation of toxic gases may cause: ▶ Central Nervous System effects including depression, headache, confusion, dizziness, stupor, coma and seizures; ▶ respiratory: acute lung swellings, shortness of breath, wheezing, rapid breathing, other symptoms and respiratory arrest; ▶ heart: collapse, irregular heartbeats and cardiac arrest; ▶ gastrointestinal: irritation, ulcers, nausea and vomiting (may be bloody), and abdominal pain. Material is highly volatile and may quickly form a concentrated atmosphere in confined or unventilated areas. The vapour may displace and replace air in breathing zone, acting as a simple asphyxiant. This may happen with little warning of overexposure. WARNING: Intentional misuse by concentrating/inhaling contents may be lethal.
Ingestion	Overexposure is unlikely in this form. Not normally a hazard due to physical form of product.
Skin Contact	There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons. Spray mist may produce discomfort Fluorocarbons remove natural oils from the skin, causing irritation, dryness and sensitivity. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected. Limited evidence suggests that repeated exposure may cause skin cracking, flaking or drying following normal handling and use.
Eye	Not considered to be a risk because of the extreme volatility of the gas.
Chronic	There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. The reactivity of an epoxide intermediate may be the reason for the cancer-causing properties of halogenated oxiranes. It is reported that 1,1-dichloroethyne, vinyl chloride, trichloroethylene, tetrachloroethylene and chloroprene all cause cancer. Generally speaking, substances with one halogen substitution show higher potential to cause cancer compared to substances with two. Main route of exposure to the gas in the workplace is by inhalation. Fluorocarbons can cause an increased risk of cancer, spontaneous abortion and birth defects. WARNING: Aerosol containers may present pressure related hazards.

CRC Freeze Spray	TOXICITY	IRRITATION
	Not Available	Not Available
1,3,3,3-tetrafluoropropene	TOXICITY	IRRITATION
	Inhalation (Rat) LC50: >1157.752 ppm4h ^[2]	Not Available
Legend:	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

1,3,3,3-TETRAFLUOROPROPENE	Inhalation (rat) NOEL (28 days): >1.5 mg/l * * Vendor HFO-1234ze is not likely to accumulate in the bodies of humans or animals HFO-1234ze is practically non-toxic. Short-term exposures at levels higher than 10% have not induced cardiac sensitization to adrenalin nor induced serious toxic effects. Rats and rabbits did not exhibit any serious toxic, developmental or reproductive effects even with exposures to high levels of HFO-1234ze. Based on a series of mutagenicity and genomics studies, the cancer risk for HFO-1234ze is low, no cardiac sensitisation was observed in dogs with exposures up to 120,000 ppm; repeated dose toxicity in rats (13-wk) found mild effects on the heart (NOEL 5,000ppm); in vitro genotoxicity findings include negative Ames Test and negative human lymphocyte chromosome aberration test; in vivo genotoxicity findings in the mouse micronucleus test were negative (inhalation, mammalian bone-marrow cytogenic test with chromosomal analysis). Inhalation of perfluoroalkenes can cause lung injury, kidney damage, brain changes and death. Repeated exposures may alter blood pressure and the production of blood cells. The potential for causing cancer is the subject of speculation. Fluoroalkanes, in contrast, are less toxic. Disinfection byproducts (DBPs) are formed when disinfectants such as chlorine, chloramines and ozone react with organic and inorganic matter in water. Animal studies have shown that some DBPs cause cancer. To date, several hundred DBPs have been identified. Numerous haloalkanes and haloalkenes have been tested for cancer-causing and mutation-causing activities. In general, the potential to cause genetic toxicity is dependent on the nature, number and position of halogen(s) and the size of the molecule.
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Acute Toxicity	×	Carcinogenicity	×
Skin Irritation/Corrosion	×	Reproductivity	×
Serious Eye Damage/Irritation	×	STOT - Single Exposure	×
Respiratory or Skin sensitisation	×	STOT - Repeated Exposure	×
Mutagenicity	×	Aspiration Hazard	×

Legend: **×** – Data either not available or does not fill the criteria for classification
✓ – Data available to make classification

SECTION 12 Ecological information

Toxicity

CRC Freeze Spray	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
1,3,3,3-tetrafluoropropene	Endpoint	Test Duration (hr)	Species	Value	Source
	ErC50	72h	Algae or other aquatic plants	>170mg/l	2
	LC50	96h	Fish	>117mg/l	2
	EC50	72h	Algae or other aquatic plants	>170mg/l	2
	EC50	48h	Crustacea	>160mg/l	2
	EC50(ECx)	48h	Crustacea	>160mg/l	2
	EC50(ECx)	72h	Algae or other aquatic plants	>10mg/l	2
	EC50	72h	Algae or other aquatic plants	>10mg/l	2
Legend: <i>Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data</i>					

DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
	No Data available for all ingredients	No Data available for all ingredients

Bioaccumulative potential

Ingredient	Bioaccumulation
	No Data available for all ingredients

Mobility in soil

Ingredient	Mobility
	No Data available for all ingredients

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	▶ DO NOT allow wash water from cleaning or process equipment to enter drains. ▶ It may be necessary to collect all wash water for treatment before disposal. ▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▶ Where in doubt contact the responsible authority. ▶ Consult State Land Waste Management Authority for disposal. ▶ Discharge contents of damaged aerosol cans at an approved site. ▶ Allow small quantities to evaporate. ▶ DO NOT incinerate or puncture aerosol cans.
------------------------------	---

Ensure that the hazardous substance is disposed in accordance with the Hazardous Substances (Disposal) Notice 2017

Disposal Requirements

Not applicable as substance/ material is non hazardous.

SECTION 14 Transport information

Labels Required

	
Marine Pollutant	NO
HAZCHEM	Not Applicable

Land transport (UN)

14.1. UN number or ID number	1950	
14.2. UN proper shipping name	AEROSOLS	
14.3. Transport hazard class(es)	Class	2.2
	Subsidiary Hazard	Not Applicable
14.4. Packing group	Not Applicable	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	Special provisions	63; 190; 277; 327; 344; 381
	Limited quantity	1000ml

Air transport (ICAO-IATA / DGR)

14.1. UN number	1950	
14.2. UN proper shipping name	Aerosols, non-flammable	
14.3. Transport hazard class(es)	ICAO/IATA Class	2.2
	ICAO / IATA Subsidiary Hazard	Not Applicable
	ERG Code	2L
14.4. Packing group	Not Applicable	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	Special provisions	A98 A145 A167 A802
	Cargo Only Packing Instructions	203
	Cargo Only Maximum Qty / Pack	150 kg
	Passenger and Cargo Packing Instructions	203
	Passenger and Cargo Maximum Qty / Pack	75 kg
	Passenger and Cargo Limited Quantity Packing Instructions	Y203
	Passenger and Cargo Limited Maximum Qty / Pack	30 kg G

Sea transport (IMDG-Code / GGVSee)

14.1. UN number	1950	
14.2. UN proper shipping name	AEROSOLS	
14.3. Transport hazard class(es)	IMDG Class	2.2
	IMDG Subsidiary Hazard	Not Applicable
14.4. Packing group	Not Applicable	
14.5. Environmental hazard	Not Applicable	
14.6. Special precautions for user	EMS Number	F-D , S-U
	Special provisions	63 190 277 327 344 381 959
	Limited Quantities	1000 ml

14.7.1. Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

14.7.2. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
1,3,3,3-tetrafluoropropene	Not Available

14.7.3. Transport in bulk in accordance with the IGC Code

Product name	Ship Type
1,3,3,3-tetrafluoropropene	Not Available

SECTION 15 Regulatory information

Safety, health and environmental regulations / legislation specific for the substance or mixture

This substance is to be managed using the conditions specified in an applicable Group Standard

HSR Number	Group Standard
HSR002519	Aerosols (Subsidiary Hazard) Group Standard 2020

Please refer to Section 8 of the SDS for any applicable tolerable exposure limit or Section 12 for environmental exposure limit.

1,3,3,3-tetrafluoropropene is found on the following regulatory lists

Not Applicable

Additional Regulatory Information

Not Applicable

Hazardous Substance Location

Subject to the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Hazard Class	Quantities
Not Applicable	Not Applicable

Certified Handler

Subject to Part 4 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Class of substance	Quantities
Not Applicable	Not Applicable

Refer Group Standards for further information

Maximum quantities of certain hazardous substances permitted on passenger service vehicles

Subject to Regulation 13.14 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Hazard Class	Gas (aggregate water capacity in mL)	Liquid (L)	Solid (kg)	Maximum quantity per package for each classification
Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

Tracking Requirements

Not Applicable

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	Yes
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	No (1,3,3,3-tetrafluoropropene)
Philippines - PICCS	No (1,3,3,3-tetrafluoropropene)
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	No (1,3,3,3-tetrafluoropropene)
Vietnam - NCI	Yes
Russia - FBEPH	No (1,3,3,3-tetrafluoropropene)
Legend:	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

SECTION 16 Other information

Revision Date	16/08/2022
Initial Date	30/08/2018

SDS Version Summary

Version	Date of Update	Sections Updated
3.1	01/11/2019	One-off system update. NOTE: This may or may not change the GHS classification
4.1	20/08/2021	Classification change due to full database hazard calculation/update.

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

- PC_T TWA: Permissible Concentration-Time Weighted Average
- PC_T STEL: Permissible Concentration-Short Term Exposure Limit
- IARC: International Agency for Research on Cancer
- ACGIH: American Conference of Governmental Industrial Hygienists
- STEL: Short Term Exposure Limit
- TEEL: Temporary Emergency Exposure Limit
- IDLH: Immediately Dangerous to Life or Health Concentrations
- ES: Exposure Standard
- OSF: Odour Safety Factor
- NOAEL: No Observed Adverse Effect Level
- LOAEL: Lowest Observed Adverse Effect Level
- TLV: Threshold Limit Value
- LOD: Limit Of Detection
- OTV: Odour Threshold Value
- BCF: BioConcentration Factors
- BEI: Biological Exposure Index
- DNEL: Derived No-Effect Level
- PNEC: Predicted no-effect concentration

- AIIC: Australian Inventory of Industrial Chemicals
- DSL: Domestic Substances List
- NDSL: Non-Domestic Substances List
- IECSC: Inventory of Existing Chemical Substance in China
- EINECS: European INventory of Existing Commercial chemical Substances
- ELINCS: European List of Notified Chemical Substances
- NLP: No-Longer Polymers
- ENCS: Existing and New Chemical Substances Inventory
- KECI: Korea Existing Chemicals Inventory
- NZIoC: New Zealand Inventory of Chemicals
- PICCS: Philippine Inventory of Chemicals and Chemical Substances
- TSCA: Toxic Substances Control Act
- TCSI: Taiwan Chemical Substance Inventory
- INSQ: Inventario Nacional de Sustancias Químicas
- NCI: National Chemical Inventory
- FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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SAFETY DATA SHEET

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SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : FULAFOAM FIRE RESISTANT
Product code : 100000013386

Manufacturer or supplier's details

Company : H.B. Fuller Company Australia Pty. Ltd.

Address : 16-22 Red Gum Drive Dandenong South, VIC 3175

Telephone : +611800423855

Emergency telephone number : 1800 033 111(AU) 0800 734 607(NZ)

Recommended use of the chemical and restrictions on use

Recommended use : Adhesive

Restrictions on use : For industrial use only.

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

Flammable liquids : Category 1

Acute toxicity (Oral) : Category 4

Acute toxicity (Inhalation) : Category 4

Skin corrosion/irritation : Category 2

Serious eye damage/eye irritation : Category 2A

Respiratory sensitisation : Category 1

Skin sensitisation : Category 1

Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

Specific target organ toxicity - repeated exposure : Category 2

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GHS label elements

Hazard pictograms



Signal word

: Danger

Hazard statements

: H224 Extremely flammable liquid and vapour.
H302 + H332 Harmful if swallowed or if inhaled.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 May cause respiratory irritation.
H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

: **Prevention:**

P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves/ eye protection/ face protection.
P285 In case of inadequate ventilation wear respiratory protection.

Response:

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P312 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.

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P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P342 + P311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/ physician.
P362 Take off contaminated clothing and wash before reuse.
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards which do not result in classification

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
Diphenylmethanediisocyanate, polymeric	9016-87-9	>= 30 -< 60
Phosphate-based flame retardant	1244733-77-4	>= 10 -< 30
Halogenated polyether polyol molecular mass 468 g/mol	86675-46-9	>= 10 -< 30
dimethyl ether (Vapour and gas)	115-10-6	< 10
isobutane	75-28-5	< 10
propane	74-98-6	< 10
triethyl phosphate	78-40-0	< 10

SECTION 4. FIRST AID MEASURES

General advice : Show this safety data sheet to the doctor in attendance.

If inhaled : Move to fresh air.

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	Keep patient warm and at rest. Consult a physician after significant exposure.
In case of skin contact	: Wash off immediately with soap and plenty of water. Call a physician if irritation develops or persists.
In case of eye contact	: Rinse immediately with plenty of water, also under the eyelids. Seek medical advice.
If swallowed	: If swallowed, call a poison control centre or doctor immediately. Do not induce vomiting without medical advice.
Most important symptoms and effects, both acute and delayed	: None known.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media	: Carbon dioxide (CO ₂) Sand Foam
Unsuitable extinguishing media	: Water
Hazardous combustion products	: No hazardous combustion products are known
Specific extinguishing methods	: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Special protective equipment for firefighters	: Wear an approved positive pressure self-contained breathing apparatus in addition to standard fire fighting gear.
Hazchem Code	: 2YE

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: Refer to protective measures listed in sections 7 and 8. Ensure adequate ventilation.
Environmental precautions	: Prevent product from entering drains. Do not flush into surface water or sanitary sewer system.
Methods and materials for containment and cleaning up	: Ventilate the area. Soak up with inert absorbent material. Shovel or sweep up.

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SECTION 7. HANDLING AND STORAGE

Local/Total ventilation : Use only with adequate ventilation.

Advice on protection against fire and explosion : Keep away from direct sunlight.
Keep away from heat and sources of ignition.

Advice on safe handling : Wear personal protective equipment.
Do not get on skin or clothing.
Keep away from heat and flame.

Hygiene measures : Avoid contact with skin, eyes and clothing.

Conditions for safe storage : Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50 °C. Do not pierce or burn, even after use.
Keep in a cool, well-ventilated place.

Materials to avoid : Do not store together with oxidizing and self-igniting products.

Further information on storage stability : The pressure in sealed containers can increase under the influence of heat.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Diphenylmethanediisocyanate, polymeric	9016-87-9	TWA	0.02 mg/m ³ (As -NCO)	AU OEL
	Further information: Sensitiser			
		STEL	0.07 mg/m ³ (As -NCO)	AU OEL
	Further information: Sensitiser			
		TWA	0.02 mg/m ³ (NCO)	AU OEL
	Further information: Sensitiser			
		STEL	0.07 mg/m ³ (NCO)	AU OEL
	Further information: Sensitiser			
dimethyl ether (Vapour and gas)	115-10-6	TWA	400 ppm 760 mg/m ³	AU OEL
		STEL	500 ppm 950 mg/m ³	AU OEL

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isobutane	75-28-5	TWA	1,000 ppm	ACGIH
		TWA	1,000 ppm	ACGIH
		STEL	1,000 ppm	ACGIH
propane	74-98-6	TWA	1,000 ppm	ACGIH

Personal protective equipment

Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.

Filter type : Combined particulates and organic vapour type

Hand protection
Material : Nitrile rubber

Eye protection : Tightly fitting safety goggles
Ensure that eyewash stations and safety showers are close to the workstation location.

Skin and body protection : Long sleeved clothing
Preventive skin protection

Protective measures : Avoid contact with skin.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : aerosol

Odour Threshold : No data available

Melting point/freezing point : is not determined

Boiling point/boiling range : -12 °C

is not determined

Flash point : -83 °C

Evaporation rate : is not determined

Flammability (solid, gas) : Not classified as a flammability hazard

Upper explosion limit / Upper flammability limit : Upper flammability limit
is not determined

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Lower explosion limit / Lower flammability limit : Lower flammability limit is not determined

Density : 1,050 kg/m³

Solubility(ies)
Water solubility : is not determined

Partition coefficient: n-octanol/water : No data available

Auto-ignition temperature : is not determined

Viscosity
Viscosity, dynamic : is not determined

Viscosity, kinematic : is not determined

SECTION 10. STABILITY AND REACTIVITY

Chemical stability : The product is chemically stable.

Hazardous decomposition products : Nitrogen oxides (NO_x)
Sulphur oxides

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Product:

Acute oral toxicity : Acute toxicity estimate: 717.36 mg/kg
Method: Calculation method

Acute inhalation toxicity : Acute toxicity estimate: 2.5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

Components:

Diphenylmethanediisocyanate, polymeric:

Acute inhalation toxicity : LC₅₀ (Rat): 0.49 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

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Chronic toxicity

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

No data available

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : To the best of our knowledge, this product does not meet the definition of hazardous waste. Solidify and dispose of in an approved landfill. Consult state, local or provincial authorities for more restrictive requirements.
The hazard and precautionary statements displayed on the label also apply to any residues left in the container.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number	: UN 1950
Proper shipping name	: AEROSOLS
Class	: 2.1
Packing group	: Not assigned by regulation
Labels	: 2.1

IATA-DGR

Not permitted for transport

IMDG-Code

UN number	: UN 1950
Proper shipping name	: AEROSOLS
Class	: 2.1
Packing group	: Not assigned by regulation
Labels	: 2.1

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EmS Code : F-D, S-U
Marine pollutant : no

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

ADG

UN number : UN 1950
Proper shipping name : AEROSOLS
Class : 2.1
Packing group : Not assigned by regulation
Labels : 2.1
Hazchem Code : 2YE

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

Standard for the Uniform : Schedule 6
Scheduling of Medicines and
Poisons

Prohibition/Licensing Requirements : There is no applicable prohibition, authorisation and restricted use requirements, including for carcinogens referred to in Schedule 10 of the model WHS Act and Regulations.

The components of this product are reported in the following inventories:

TSCA : Product contains substance(s) not listed on TSCA inventory.
DSL : This product contains the following components that are not on the Canadian DSL nor NDSL.

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REACH	:	Not in compliance with the inventory
AICS	:	On the inventory, or in compliance with the inventory
NZIoC	:	On the inventory, or in compliance with the inventory
ENCS	:	Not in compliance with the inventory
KECI	:	Not in compliance with the inventory
PICCS	:	Not in compliance with the inventory
IECSC	:	Not in compliance with the inventory
TCSI	:	Not in compliance with the inventory

SECTION 16. OTHER INFORMATION

Further information

Revision Date	:	08.02.2021
Contact Point	:	Prepared by: Global Regulatory Department - phone: 1-651-236-5842 - email: msds.request@hbfuller.com
Date format	:	dd.mm.yyyy

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
AU OEL	:	Australia. Workplace Exposure Standards for Airborne Contaminants.
ACGIH / TWA	:	8-hour, time-weighted average
ACGIH / STEL	:	Short-term exposure limit
AU OEL / TWA	:	Exposure standard - time weighted average
AU OEL / STEL	:	Exposure standard - short term exposure limit

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemi-

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cal Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

AU / EN

SAFETY DATA SHEET



Castrol Garden 4T 10W-30

Section 1. Identification

GHS product identifier Castrol Garden 4T 10W-30

Product code 465942-TH01

SDS no. 465942

Relevant identified uses of the substance or mixture and uses advised against

**Use of the substance/
mixture** Engine Oils.
For specific application advice see appropriate Technical Data Sheet or consult our company representative.

Manufacturer

Supplier Castrol Australia Pty Ltd
Level 17, 717 Bourke Street
Docklands, Victoria 3008
ABN 87 008 459 407
www.castrol.com.au

Tel: +61 (03) 9268 4111

**EMERGENCY TELEPHONE
NUMBER** +61 2801 44558 (or 1800 14 14 74 within Australia)

**OTHER PRODUCT
INFORMATION** Technical Advice Helpline Number: 1300 557 998

Section 2. Hazard(s) identification

**Classification of the
substance or mixture** Not classified.

GHS label elements

Signal word No signal word.

Hazard statements No known significant effects or critical hazards.

Precautionary statements

Prevention Not applicable.

Response Not applicable.

Storage Not applicable.

Disposal Not applicable.

**Supplemental label
elements** Not applicable.

**Other hazards which do not
result in classification** None known.

Section 3. Composition and ingredient information

Substance/mixture Mixture

Highly refined base oil (IP 346 DMSO extract < 3%). Proprietary performance additives.

Ingredient name	% (w/w)	CAS number
Distillates (petroleum), hydrotreated heavy paraffinic	≥90	64742-54-7
Distillates (petroleum), solvent-dewaxed heavy paraffinic	≤3	64742-65-0

Product name Castrol Garden 4T 10W-30

Product code 465942-TH01 **Page:** 1/9

Version 3.02 **Date of issue** 8/16/2023

Format Australia
(Australia)

Language ENGLISH
(ENGLISH)

Section 3. Composition and ingredient information

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention.
Inhalation	If inhaled, remove to fresh air. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. Get medical attention if symptoms occur.
Skin contact	Wash skin thoroughly with soap and water or use recognised skin cleanser. Remove contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.
Ingestion	Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	Treatment should in general be symptomatic and directed to relieving any effects. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Specific treatments	No specific treatment.
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training.

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media	In case of fire, use foam, dry chemical or carbon dioxide extinguisher or spray.
Unsuitable extinguishing media	Do not use water jet.

Specific hazards arising from the chemical

Hazardous thermal decomposition products	In a fire or if heated, a pressure increase will occur and the container may burst. Combustion products may include the following: carbon oxides (CO, CO ₂) (carbon monoxide, carbon dioxide) nitrogen oxides (NO, NO ₂ etc.)
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Special protective actions for fire-fighters

No action shall be taken involving any personal risk or without suitable training. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire.

Special protective equipment for fire-fighters

Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Put on appropriate personal protective equipment. Floors may be slippery; use care to avoid falling.

For emergency responders

If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions

Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

Small spill

Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill

Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

Precautions for safe handling

Protective measures

Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Store and use only in equipment/containers designed for use with this product. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Not suitable

Prolonged exposure to elevated temperature

Section 8. Exposure controls and personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Distillates (petroleum), hydrotreated heavy paraffinic	Safe Work Australia (Australia). [Oil mist, refined mineral] TWA: 5 mg/m ³ 8 hours. Issued/Revised: 5/1995 Form: Mist
Distillates (petroleum), solvent-dewaxed heavy paraffinic	Safe Work Australia (Australia). [Oil mist, refined mineral] TWA: 5 mg/m ³ 8 hours. Issued/Revised: 5/1995 Form: Mist

Biological exposure indices

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Section 8. Exposure controls and personal protection

No exposure indices known.

Appropriate engineering controls

All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained.

Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards.

Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits.

The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

Safety glasses with side shields.

Skin protection

Hand protection

Wear protective gloves if prolonged or repeated contact is likely. Wear chemical resistant gloves. Recommended: Nitrile gloves. The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures). Most gloves provide only a short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Gloves should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

Skin protection

Use of protective clothing is good industrial practice.

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Cotton or polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin. Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g. when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required.

Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

The correct choice of respiratory protection depends upon the chemicals being handled, the conditions of work and use, and the condition of the respiratory equipment. Safety procedures should be developed for each intended application. Respiratory protection equipment should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

Section 8. Exposure controls and personal protection

Refer to standards:

Respiratory protection:AS/NZS 1715 and AS/NZS 1716

Gloves:AS/NZS 2161.1

Eye protection:AS/NZS 1336 and AS/NZS 1337

Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state

Liquid.

Colour

Brown.

Odour

Not available.

Odour threshold

Not available.

pH

Not applicable.

Melting point

Not available.

Boiling point, initial boiling point, and boiling range

Not available.

Flash point

Closed cup: 200°C (392°F) [Pensky-Martens]

Evaporation rate

Not available.

Not applicable. Based on - Physical state

Lower and upper explosion limit/flammability limit

Not available.

Vapour pressure

Ingredient name	Vapour Pressure at 20°C			Vapour pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
Distillates (petroleum), hydrotreated heavy paraffinic	<0.08	<0.011	ASTM D 5191			
Distillates (petroleum), solvent-dewaxed heavy paraffinic	<0.08	<0.011	ASTM D 5191			

Relative vapour density

Not available.

Relative density

Not available.

Density

<1000 kg/m³ (<1 g/cm³) at 15°C

Solubility(ies)

Media	Result
water	Not soluble

Solubility in water

Not available.

Partition coefficient: n-octanol/water

Not applicable.

Auto-ignition temperature

Not available.

Decomposition temperature

Not available.

Viscosity

Kinematic: 66.2 mm²/s (66.2 cSt) at 40°C

Kinematic: 10 to 11 mm²/s (10 to 11 cSt) at 100°C

Particle characteristics

Median particle size

Not applicable.

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Section 10. Stability and reactivity

Reactivity	No specific test data available for this product. Refer to Conditions to avoid and Incompatible materials for additional information.
Chemical stability	The product is stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur. Under normal conditions of storage and use, hazardous polymerisation will not occur.
Conditions to avoid	Avoid all possible sources of ignition (spark or flame).
Incompatible materials	Reactive or incompatible with the following materials: oxidising materials.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Information on likely routes of exposure	Routes of entry anticipated: Dermal, Inhalation, Eyes.
Potential acute health effects	
Eye contact	No known significant effects or critical hazards.
Inhalation	Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Skin contact	Defatting to the skin. May cause skin dryness and irritation.
Ingestion	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	No specific data.
Inhalation	No specific data.
Skin contact	Adverse symptoms may include the following: irritation dryness cracking
Ingestion	No specific data.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Eye contact	Potential risk of transient stinging or redness if accidental eye contact occurs.
Skin contact	Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
Ingestion	Ingestion of large quantities may cause nausea and diarrhoea.
General	USED ENGINE OILS Combustion products resulting from the operation of internal combustion engines contaminate engine oils during use. Used engine oil may contain hazardous components which have the potential to cause skin cancer. Frequent or prolonged contact with all types and makes of used engine oil must therefore be avoided and a high standard of personal hygiene maintained.
Carcinogenicity	No known significant effects or critical hazards.
Mutagenicity	No known significant effects or critical hazards.
Teratogenicity	No known significant effects or critical hazards.
Developmental effects	No known significant effects or critical hazards.
Fertility effects	No known significant effects or critical hazards.

Section 12. Ecological information

Persistence and degradability

Expected to be biodegradable.

Bioaccumulative potential

This product is not expected to bioaccumulate through food chains in the environment.

Mobility in soil

Soil/water partition
coefficient (K_{oc})

Not available.

Mobility

Spillages may penetrate the soil causing ground water contamination.

Other ecological information

Spills may form a film on water surfaces causing physical damage to organisms.
Oxygen transfer could also be impaired.

Section 13. Disposal considerations

Disposal methods

The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Special Precautions for Landfill or Incineration

No additional special precautions identified.

Section 14. Transport information

	ADG	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Additional information	-	-	-

Special precautions for user

Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

Not regulated.

Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

International lists

National inventory

REACH Status

For the REACH status of this product please consult your company contact, as identified in Section 1.

Australia inventory (AIC)

All components are listed or exempted.

Canada inventory

All components are listed or exempted.

China inventory (IECSC)

All components are listed or exempted.

Japan inventory (CSCL)

All components are listed or exempted.

Korea inventory (KECI)

All components are listed or exempted.

Philippines inventory (PICCS)

All components are listed or exempted.

Taiwan Chemical Substances Inventory (TCSI)

All components are listed or exempted.

United States inventory (TSCA 8b)

All components are active or exempted.

Section 16. Any other relevant information

History

Date of printing 8/16/2023

Date of issue/Date of revision 8/16/2023

Date of previous issue 8/15/2023

Version 3.02

Prepared by Product Stewardship

Key to abbreviations

ADG = Australian Dangerous Goods

ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

IATA = International Air Transport Association

IBC = Intermediate Bulk Container

IMDG = International Maritime Dangerous Goods

LogPow = logarithm of the octanol/water partition coefficient

MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)

NOHSC = National Occupational Health and Safety Commission

REACH = Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation [Regulation (EC) No. 1907/2006]

STEL = Short term exposure limit

SUSMP = Standard Uniform Schedule of Medicine and Poisons

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Section 16. Any other relevant information

UN = United Nations

TWA = Time weighted average

VOC = Volatile Organic Compound

SADT = Self-Accelerating Decomposition Temperature

Varies = may contain one or more of the following 64741-88-4, 64741-89-5, 64741-95-3, 64741-96-4, 64742-01-4, 64742-44-5, 64742-45-6, 64742-52-5, 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-57-0, 64742-58-1, 64742-62-7, 64742-63-8, 64742-65-0, 64742-70-7, 72623-85-9, 72623-86-0, 72623-87-1

Procedure used to derive the classification

Classification	Justification
Not classified.	

📌 Indicates information that has changed from previously issued version.

Notice to reader

All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.

The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from BP Group.

It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The BP Group shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material. Purchasers of the product for supply to a third party for use at work, have a duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet. Employers have a duty to tell employees and others who may be affected of any hazards described in this sheet and of any precautions that should be taken. You can contact the BP Group to ensure that this document is the most current available. Alteration of this document is strictly prohibited.



SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
GHS: The Globally Harmonized System of Classification and Labeling of Chemicals

BOSTIK SIL. INDUSTRIAL GRADE CLEAR
Revision Number 3.03

Revision date 25-Oct-2021
Supersedes Date: 21-Sep-2021

Section 1: Identification

Product identifier

Product Name BOSTIK SIL. INDUSTRIAL GRADE CLEAR

Other means of identification

Recommended use of the chemical and restrictions on use

Recommended use Sealant

Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier

Bostik New Zealand Limited
19 Eastern Hutt Road Wingate,
Lower Hutt, New Zealand
Tel: 04-567 5119
Fax: 04-567 5412

Manufacturer

Bostik New Zealand Limited
19 Eastern Hutt Road Wingate,
Lower Hutt, New Zealand
Tel: 04-567 5119
Fax: 04-567 5412

E-mail address SDS.AP@Bostik.com

Emergency telephone number

Emergency Telephone 24 Hr: 0800 243 622
+64 4 917 9888
Poison Centre : 0800 764 766

Section 2: Hazard identification

GHS Classification

Acute toxicity - Oral	Category 5 (HSNO - 6.1E)
Skin corrosion/irritation	Category 3 (HSNO - 6.3B)
Serious eye damage/eye irritation	Category 2 (HSNO - 6.4A)
Skin sensitization	Category 1 (HSNO - 6.5B)
Carcinogenicity	Category 2 (HSNO - 6.7B)
Specific target organ toxicity (repeated exposure)	Category 2 (HSNO - 6.9B)

Label elements



Signal word
Warning

Hazard statements

H303 - May be harmful if swallowed
H316 - Causes mild skin irritation

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H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H351 - Suspected of causing cancer
H373 - May cause damage to organs through prolonged or repeated exposure

Precautionary Statements - Prevention

Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Wear protective gloves/protective clothing/eye protection/face protection
Wash face, hands and any exposed skin thoroughly after handling
Contaminated work clothing should not be allowed out of the workplace
Do not breathe dust/fume/gas/mist/vapors/spray

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

If eye irritation persists: Get medical advice/attention

Skin

IF ON SKIN: Wash with plenty of water and soap

If skin irritation or rash occurs: Get medical advice/attention

Take off contaminated clothing and wash it before reuse

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other hazards which do not result in classification

Small amounts of 2-butanone, oxime (CAS 96-29-7) are formed by hydrolysis and released upon curing.

Section 3: Composition/information on ingredients

Chemical name	CAS No	Weight-%
2-Butanone, O,O',O''-(methylsilyldiyl)trioxime	22984-54-9	1 - <5
2-Butanone, oxime	96-29-7	1 - <3
Non-hazardous ingredients	Proprietary	Balance

Section 4: First-aid measures

Description of first aid measures

General advice	Show this safety data sheet to the doctor in attendance. If medical advice is needed, have product container or label at hand.
Inhalation	Remove to fresh air. If symptoms persist, call a physician.
Eye contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Consult an ophthalmologist.
Skin contact	Wash with soap and water. May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a physician.
Ingestion	Never give anything by mouth to an unconscious person. Rinse mouth thoroughly with water. Drink 1 or 2 glasses of water. Do NOT induce vomiting.
Self-protection of the first aider	Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

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Most important symptoms and effects, both acute and delayed

Symptoms None known.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

Section 5: Fire-fighting measures

Suitable Extinguishing Media

Suitable Extinguishing Media Water spray, carbon dioxide (CO₂), dry chemical, alcohol-resistant foam.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Full water jet.

Specific hazards arising from the chemical

Specific hazards arising from the chemical Thermal decomposition can lead to release of irritating gases and vapors.

Hazardous combustion products Nitrogen oxides (NO_x).

Special protective actions for fire-fighters

Special protective equipment and precautions for fire-fighters Wear self contained breathing apparatus for fire fighting if necessary.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Do not get in eyes, on skin, or on clothing. Use personal protective equipment as required. Ensure adequate ventilation.

Other information Refer to protective measures listed in Sections 7 and 8.

For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

Environmental precautions Prevent product from entering drains. Do not allow to enter into soil/subsoil. See Section 12 for additional Ecological Information.

Methods and material for containment and cleaning up

Methods for containment Do not scatter spilled material with high pressure water streams.

Methods for cleaning up Pick up and transfer to properly labeled containers.

Precautions to prevent secondary hazards

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

Section 7: Handling and storage

Precautions for safe handling

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Advice on safe handling	Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Do not eat, drink or smoke when using this product. Take off contaminated clothing and wash before reuse.
General hygiene considerations	Do not eat, drink or smoke when using this product. Wash hands before breaks and after work. Take off contaminated clothing and wash it before reuse.

Conditions for safe storage, including any incompatibilities

Storage Conditions	Protect from moisture. Keep away from food, drink and animal feeding stuffs.
Incompatible materials	Strong oxidizing agents.

Section 8: Exposure controls/personal protection

Control parameters

Exposure Limits	This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.
Biological occupational exposure limits	This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Appropriate engineering controls

Engineering controls	Showers Eyewash stations Ventilation systems.
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Individual protection measures, such as personal protective equipment

Eye/face protection	Wear safety glasses with side shields (or goggles).
Hand protection	Wear suitable gloves.
Skin and body protection	Wear suitable protective clothing.
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
Environmental exposure controls	No information available.

Section 9: Physical and chemical properties

Information on basic physical and chemical properties

Physical state	Paste / Gel Liquid
Appearance	Paste
Color	Clear, colorless
Odor	Characteristic.
Odor threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	No data available	Not applicable Insoluble in water
Melting point / freezing point	No data available	None known
Initial boiling point and boiling range	No data available	None known

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Flash point	No data available	None known
Evaporation rate	No data available	None known
Flammability	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapor pressure	No data available	None known
Relative vapor density	No data available	None known
Relative density	No data available	None known
Water solubility	No data available	None known
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature		None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Explosive properties	No information available.	
Oxidizing properties	No information available.	
Other information		
Softening Point	No information available	
Molecular weight	No information available	
VOC Content (%)	No information available	
Density	1	
Bulk density	No information available	
Particle characteristics		

Section 10: Stability and reactivity

Reactivity

Reactivity Product cures with moisture.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

Conditions to avoid

Conditions to avoid Product cures with moisture. Protect from moisture. Exposure to air or moisture over prolonged periods. Do not freeze. Keep away from open flames, hot surfaces and sources of ignition.

Incompatible materials

Incompatible materials Strong oxidizing agents.

Hazardous decomposition products

Hazardous decomposition products None known based on information supplied.

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Section 11: Toxicological information

Acute toxicity

Information on likely routes of exposure

Product Information

Inhalation	Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract.
Eye contact	Specific test data for the substance or mixture is not available. Causes serious eye irritation. (based on components). May cause redness, itching, and pain.
Skin contact	May cause sensitization by skin contact. Specific test data for the substance or mixture is not available. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons. (based on components). May cause irritation. Prolonged contact may cause redness and irritation. Causes mild skin irritation.
Ingestion	Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May be harmful if swallowed.
Symptoms	Itching. Rashes. Hives. May cause redness and tearing of the eyes. Prolonged contact may cause redness and irritation.

Acute toxicity

Numerical measures of toxicity

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	4,547.60 mg/kg
ATEmix (dermal)	23,429.20 mg/kg

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
2-Butanone, O,O',O''-(methylsilylidyne)trioxi me	LD50 = 2463 mg/Kg (Rattus) (OECD 401)	LD50 >2000 mg/Kg (Rattus) (OECD 402)	-
2-Butanone, oxime	=100 mg/kg (ATE)	1000 - 1800 mg/kg (Oryctolagus cuniculus)	>4.83 mg/L (Rattus) 4 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation	May cause skin irritation. Classification based on data available for ingredients.
Serious eye damage/eye irritation	Classification based on data available for ingredients. Causes serious eye irritation.
Respiratory or skin sensitization	May cause sensitization by skin contact.
Germ cell mutagenicity	Based on available data, the classification criteria are not met.
Carcinogenicity	Contains a known or suspected carcinogen. Classification based on data available for ingredients. Suspected of causing cancer.

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Method	Species	Results
OECD Test No. 453: Combined Chronic Toxicity/Carcinogenicity Studies	Rat	Carcinogenic

Reproductive toxicity Based on available data, the classification criteria are not met.

STOT - single exposure Based on available data, the classification criteria are not met.

Respiratory irritation No information available.

Narcotic effects No information available.

STOT - repeated exposure May cause damage to organs through prolonged or repeated exposure.

Aspiration hazard Based on available data, the classification criteria are not met.

Section 12: Ecological information

Ecotoxicity

Ecotoxicity

Aquatic ecotoxicity

Chemical name	Algae/aquatic plants	Fish	Crustacea
2-Butanone, O,O',O''-(methylsilyldiylne)trioxime	EC50 (72h) = 94 mg/L (Pseudokirchneriella subcapitata) OECD 201	EC50 (96h) >120 mg/L (Oncorhynchus mykiss) Freshwater static (OECD guideline 203)	EC50 (48h) > 120 mg/L (Daphnia magna) OECD 202
2-Butanone, oxime	EC50: =83mg/L (72h, Desmodesmus subspicatus)	LC50: =760mg/L (96h, Poecilia reticulata) LC50: 777 - 914mg/L (96h, Pimephales promelas) LC50: 320 - 1000mg/L (96h, Leuciscus idus)	EC50: =750mg/L (48h, Daphnia magna)

Terrestrial ecotoxicity There is no data for this product.

Persistence and degradability No information available.

Bioaccumulative potential

Bioaccumulation There is no data for this product.

Component Information

Chemical name	Partition coefficient
2-Butanone, O,O',O''-(methylsilyldiylne)trioxime	1.69
2-Butanone, oxime	0.65

Mobility in soil

Other adverse effects

No information available.

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Supersedes Date: 21-Sep-2021

Section 13: Disposal considerations

Disposal methods

Waste from residues/unused products

Dispose of product in packaging in a way that is consistent with the EPA Consolidation 30 April 2021 of the Hazardous Substances (Disposal) Notice 2017 and the Act. Treat the substance using a method that changes the characteristics or composition of the substance so that the substance is no longer a hazardous substance; or export the substance from New Zealand as waste. Substances which are hazardous to human health or corrosive to metals – may be discharged into the environment if a tolerable exposure limit has been set for the substance (or a component of that substance); and the discharge does not, after reasonable mixing, result in the concentration of the substance in an environmental medium exceeding the tolerable exposure limit. If there is no tolerable exposure limit for the substance, then it may only be discharged into the environment if the substance is very rapidly converted to substances that are not hazardous substances. Uncured product should be disposed of as hazardous waste. Dispose of contents/container in accordance with local, regional, national, and international regulations as applicable.

Contaminated packaging

Handle contaminated packages in the same way as the product itself.

Section 14: Transport information

IATA Not regulated

IMDG Not regulated

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
No information available

ADR Not regulated

Section 15: Regulatory information

Safety, health and environmental regulations/legislation specific for the substance or mixture

New Zealand

ERMA Group HSR002679

Chemical name	New Zealand HSNO Chemical Classification
2-Butanone, oxime - 96-29-7	- 3.1C,6.1D (All),6.1D (O),6.1D (D),6.1D (I),6.3B,6.4A,6.5B,6.7B,6.9B (All),6.9B (I),6.9B (O),9.1C (A),9.1C (All),9.2A,9.3B (HSR001191) 10-18% in a non hazardous diluent - 6.3B,6.4A,6.5B,6.7B,6.9B (All),6.9B (O),6.9B (I),9.2B,9.3C (HSR006484)

National regulations

There are no applicable tolerable exposure limits or environmental exposure limits according to the EPA Controls for Hazardous Substances

Certified handlers, tracking and controlled substance license requirements

Certified handlers are required for some substances. This includes substances requiring a controlled substance license, and most explosives, vertebrates toxic agents, and certain fumigants. Acutely toxic substances which are a Category 1 or 2, such as pesticides also require Certified handlers. Please check the Health and Safety at Work Act 2015 for further information
Tracking is required for some highly hazardous substances. These substances need to be under the control of an appropriately trained person or appropriately secured. Please

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check the Health and Safety at Work Act 2015 for further information
Controlled substance licenses are required to possess certain explosives, vertebrate
toxic agents and fumigants. See Part 7 of the Health and Safety at Work Regulation
2017 for more information

**EPA New Zealand HSNO approval
code or group standard**

International Regulations

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

Section 16: Other information

Revision date 25-Oct-2021

Revision Note

The symbol (*) in the margin of this SDS indicates that this line has been revised.

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
C	Carcinogen		

Key literature references and sources for data used to compile the SDS

EPA (Environmental Protection Agency)
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
World Health Organization

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet

ANDREW ISOPROPYL ALCOHOL

Damar Industries Limited

Version No: 7.10

Safety Data Sheet according to the Health and Safety at Work (Hazardous Substances) Regulations 2017

Chemwatch Hazard Alert Code: 4

Issue Date: 11/05/2021

Print Date: 20/01/2022

L.GHS.NZL.EN

SECTION 1 Identification of the substance / mixture and of the company / undertaking

Product Identifier

Product name	ANDREW ISOPROPYL ALCOHOL
Chemical Name	isopropanol
Synonyms	ALK0130; ALG0130
Proper shipping name	ISOPROPANOL (ISOPROPYL ALCOHOL)
Chemical formula	C ₃ H ₈ O
Other means of identification	NA, ALX0130
CAS number	67-63-0*

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Cleaning solvents, thinner for certain types of paints.
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Details of the supplier of the safety data sheet

Registered company name	Damar Industries Limited
Address	800 Te Ngae Road, Eastgate Park, Rotorua 3042 New Zealand
Telephone	+64 7 345 6007
Fax	+64 7 345 6019
Website	www.damarindustries.com
Email	info@damarindustries.co.nz

Emergency telephone number

Association / Organisation	CHEMCALL
Emergency telephone numbers	0800 243 622
Other emergency telephone numbers	1800 127 406 (outside New Zealand)

SECTION 2 Hazards identification

Classification of the substance or mixture

Considered a Hazardous Substance according to the criteria of the New Zealand Hazardous Substances New Organisms legislation.
Classified as Dangerous Goods for transport purposes.

ChemWatch Hazard Ratings

	Min	Max
Flammability	3	
Toxicity	1	
Body Contact	2	
Reactivity	0	
Chronic	4	

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

Classification [1]	Flammable Liquids Category 2, Serious Eye Damage/Eye Irritation Category 2, Aspiration Hazard Category 1
Legend:	1. Classified by Chemwatch; 2. Classification drawn from CCID EPA NZ; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI
Determined by Chemwatch using GHS/HSNO criteria	3.1B, 6.1E (aspiration), 6.4A

Label elements

Hazard pictogram(s)	
Signal word	Danger

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Hazard statement(s)

H225	Highly flammable liquid and vapour.
H319	Causes serious eye irritation.
H304	May be fatal if swallowed and enters airways.

Precautionary statement(s) Prevention

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting/intrinsically safe equipment.
P242	Use non-sparking tools.
P243	Take action to prevent static discharges.
P280	Wear protective gloves, protective clothing, eye protection and face protection.
P264	Wash all exposed external body areas thoroughly after handling.

Precautionary statement(s) Response

P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician/first aider.
P331	Do NOT induce vomiting.
P370+P378	In case of fire: Use alcohol resistant foam or normal protein foam to extinguish.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

Precautionary statement(s) Storage

P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.
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SECTION 3 Composition / information on ingredients

Substances

CAS No	%[weight]	Name
67-63-0	>99.8	<u>isopropanol</u>

Legend: 1. Classified by Chemwatch; 2. Classification drawn from CCID EPA NZ; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 4. Classification drawn from C&L; * EU IOELVs available

Mixtures

See section above for composition of Substances

SECTION 4 First aid measures

Description of first aid measures

Eye Contact	If this product comes in contact with the eyes: - Wash out immediately with fresh running water. - Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. - Seek medical attention without delay; if pain persists or recurs seek medical attention. - Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin or hair contact occurs: - Flush skin and hair with running water (and soap if available). - Seek medical attention in event of irritation.
Inhalation	- If fumes, aerosols or combustion products are inhaled remove from contaminated area. - Other measures are usually unnecessary.
Ingestion	- Immediately give a glass of water. - First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor. - If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.

Indication of any immediate medical attention and special treatment needed

Any material aspirated during vomiting may produce lung injury. Therefore emesis should not be induced mechanically or pharmacologically. Mechanical means should be used if it is considered necessary to evacuate the stomach contents; these include gastric lavage after endotracheal intubation. If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours.

For acute or short term repeated exposures to isopropanol:

- Rapid onset respiratory depression and hypotension indicates serious ingestions that require careful cardiac and respiratory monitoring together with immediate intravenous access.
- Rapid absorption precludes the usefulness of emesis or lavage 2 hours post-ingestion. Activated charcoal and cathartics are not clinically useful. Ipecac is most useful when given

Continued...

ANDREW ISOPROPYL ALCOHOL

- 30 mins. post-ingestion.
- There are no antidotes.
- Management is supportive. Treat hypotension with fluids followed by vasopressors.
- Watch closely, within the first few hours for respiratory depression; follow arterial blood gases and tidal volumes.
- Ice water lavage and serial haemoglobin levels are indicated for those patients with evidence of gastrointestinal bleeding.

SECTION 5 Firefighting measures

Extinguishing media

- Alcohol stable foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

Special hazards arising from the substrate or mixture

Fire Incompatibility

- Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Advice for firefighters

Fire Fighting

- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
- Wear breathing apparatus plus protective gloves in the event of a fire.
- Prevent, by any means available, spillage from entering drains or water course.
- Consider evacuation (or protect in place).
- Fight fire from a safe distance, with adequate cover.
- If safe, switch off electrical equipment until vapour fire hazard removed.
- Use water delivered as a fine spray to control the fire and cool adjacent area.
- Avoid spraying water onto liquid pools.
- Do not approach containers suspected to be hot.**
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.

Fire/Explosion Hazard

- Liquid and vapour are highly flammable.
 - Severe fire hazard when exposed to heat, flame and/or oxidisers.
 - Vapour may travel a considerable distance to source of ignition.
 - Heating may cause expansion or decomposition leading to violent rupture of containers.
 - On combustion, may emit toxic fumes of carbon monoxide (CO).
- Combustion products include:
- carbon dioxide (CO₂)
 - other pyrolysis products typical of burning organic material.
- WARNING:** Long standing in contact with air and light may result in the formation of potentially explosive peroxides.

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact with the substance, by using protective equipment.
- Contain and absorb small quantities with vermiculite or other absorbent material.
- Wipe up.
- Collect residues in a flammable waste container.

Major Spills

Chemical Class: alcohols and glycols

For release onto land: recommended sorbents listed in order of priority.

SORBENT TYPE	RANK	APPLICATION	COLLECTION	LIMITATIONS
LAND SPILL - SMALL				
cross-linked polymer - particulate	1	shovel	shovel	R, W, SS
cross-linked polymer - pillow	1	throw	pitchfork	R, DGC, RT
sorbent clay - particulate	2	shovel	shovel	R, I, P
wood fiber - pillow	3	throw	pitchfork	R, P, DGC, RT
treated wood fiber - pillow	3	throw	pitchfork	DGC, RT
foamed glass - pillow	4	throw	pitchfork	R, P, DGC, RT
LAND SPILL - MEDIUM				
cross-linked polymer - particulate	1	blower	skiploader	R, W, SS
polypropylene - particulate	2	blower	skiploader	W, SS, DGC

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sorbent clay - particulate	2	blower	skiploader	R, I, W, P, DGC
polypropylene - mat	3	throw	skiploader	DGC, RT
expanded mineral - particulate	3	blower	skiploader	R, I, W, P, DGC
polyurethane - mat	4	throw	skiploader	DGC, RT

Legend

DGC: Not effective where ground cover is dense

R; Not reusable

I: Not incinerable

P: Effectiveness reduced when rainy

RT: Not effective where terrain is rugged

SS: Not for use within environmentally sensitive sites

W: Effectiveness reduced when windy

Reference: Sorbents for Liquid Hazardous Substance Cleanup and Control;

R.W Melvold et al: Pollution Technology Review No. 150: Noyes Data Corporation 1988

- ▶ Clear area of personnel and move upwind.
- ▶ Alert Fire Brigade and tell them location and nature of hazard.
- ▶ May be violently or explosively reactive.
- ▶ Wear breathing apparatus plus protective gloves.
- ▶ Prevent, by any means available, spillage from entering drains or water course.
- ▶ Consider evacuation (or protect in place).
- ▶ No smoking, naked lights or ignition sources.
- ▶ Increase ventilation.
- ▶ Stop leak if safe to do so.
- ▶ Water spray or fog may be used to disperse /absorb vapour.
- ▶ Contain spill with sand, earth or vermiculite.
- ▶ Use only spark-free shovels and explosion proof equipment.
- ▶ Collect recoverable product into labelled containers for recycling.
- ▶ Absorb remaining product with sand, earth or vermiculite.
- ▶ Collect solid residues and seal in labelled drums for disposal.
- ▶ Wash area and prevent runoff into drains.
- ▶ If contamination of drains or waterways occurs, advise emergency services.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	▶ Containers, even those that have been emptied, may contain explosive vapours. ▶ Do NOT cut, drill, grind, weld or perform similar operations on or near containers. ▶ Avoid all personal contact, including inhalation. ▶ Wear protective clothing when risk of exposure occurs. ▶ Use in a well-ventilated area. ▶ Prevent concentration in hollows and sumps. ▶ DO NOT enter confined spaces until atmosphere has been checked. ▶ Avoid smoking, naked lights, heat or ignition sources. ▶ When handling, DO NOT eat, drink or smoke. ▶ Vapour may ignite on pumping or pouring due to static electricity. ▶ DO NOT use plastic buckets. ▶ Earth and secure metal containers when dispensing or pouring product. ▶ Use spark-free tools when handling. ▶ Avoid contact with incompatible materials. ▶ Keep containers securely sealed. ▶ Avoid physical damage to containers. ▶ Always wash hands with soap and water after handling. ▶ Work clothes should be laundered separately. ▶ Use good occupational work practice. ▶ Observe manufacturer's storage and handling recommendations contained within this SDS. ▶ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.
Other information	▶ Store in original containers in approved flame-proof area. ▶ No smoking, naked lights, heat or ignition sources. ▶ DO NOT store in pits, depressions, basements or areas where vapours may be trapped. ▶ Keep containers securely sealed. ▶ Store away from incompatible materials in a cool, dry well ventilated area. ▶ Protect containers against physical damage and check regularly for leaks. ▶ Observe manufacturer's storage and handling recommendations contained within this SDS.

Conditions for safe storage, including any incompatibilities

Suitable container	▶ DO NOT use aluminium or galvanised containers ▶ Packing as supplied by manufacturer. ▶ Plastic containers may only be used if approved for flammable liquid. ▶ Check that containers are clearly labelled and free from leaks. ▶ For low viscosity materials (i) : Drums and jerry cans must be of the non-removable head type. (ii) : Where a can is to be used as an inner package, the can must have a screwed enclosure. ▶ For materials with a viscosity of at least 2680 cSt. (23 deg. C) ▶ For manufactured product having a viscosity of at least 250 cSt. (23 deg. C) ▶ Manufactured product that requires stirring before use and having a viscosity of at least 20 cSt (25 deg. C): (i) Removable head packaging; (ii) Cans with friction closures and (iii) low pressure tubes and cartridges may be used. ▶ Where combination packages are used, and the inner packages are of glass, there must be sufficient inert cushioning material in contact with inner and outer packages ▶ In addition, where inner packagings are glass and contain liquids of packing group I there must be sufficient inert absorbent to absorb any spillage, unless the outer packaging is a close fitting moulded plastic box and the substances are not incompatible with the plastic.
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ANDREW ISOPROPYL ALCOHOL

Storage incompatibility

Isopropanol (syn: isopropyl alcohol, IPA):

- forms ketones and unstable peroxides on contact with air or oxygen; the presence of ketones especially methyl ethyl ketone (MEK, 2-butanone) will accelerate the rate of peroxidation
- reacts violently with strong oxidisers, powdered aluminium (exothermic), crotonaldehyde, diethyl aluminium bromide (ignition), dioxygenyl tetrafluoroborate (ignition/ ambient temperature), chromium trioxide (ignition), potassium-tert-butoxide (ignition), nitroform (possible explosion), oleum (pressure increased in closed container), cobalt chloride, aluminium triisopropoxide, hydrogen plus palladium dust (ignition), oxygen gas, phosgene, phosgene plus iron salts (possible explosion), sodium dichromate plus sulfuric acid (exothermic/ incandescence), triisobutyl aluminium
- reacts with phosphorus trichloride forming hydrogen chloride gas
- reacts, possibly violently, with alkaline earth and alkali metals, strong acids, strong caustics, acid anhydrides, halogens, aliphatic amines, aluminium isopropoxide, isocyanates, acetaldehyde, barium perchlorate (forms highly explosive perchloric ester compound), benzoyl peroxide, chromic acid, dialkylzincs, dichlorine oxide, ethylene oxide (possible explosion), hexamethylene diisocyanate (possible explosion), hydrogen peroxide (forms explosive compound), hypochlorous acid, isopropyl chlorocarbonate, lithium aluminium hydride, lithium tetrahydroaluminate, nitric acid, nitrogen dioxide, nitrogen tetraoxide (possible explosion), pentafluoroguanidine, perchloric acid (especially hot), permonosulfuric acid, phosphorus pentasulfide, tangerine oil, triethylaluminium, triisobutylaluminium, trinitromethane
- attacks some plastics, rubber and coatings
- reacts with metallic aluminium at high temperature
- may generate electrostatic charges

Alcohols

- are incompatible with strong acids, acid chlorides, acid anhydrides, oxidising and reducing agents.
- reacts, possibly violently, with alkaline metals and alkaline earth metals to produce hydrogen
- react with strong acids, strong caustics, aliphatic amines, isocyanates, acetaldehyde, benzoyl peroxide, chromic acid, chromium oxide, dialkylzincs, dichlorine oxide, ethylene oxide, hypochlorous acid, isopropyl chlorocarbonate, lithium tetrahydroaluminate, nitrogen dioxide, pentafluoroguanidine, phosphorus halides, phosphorus pentasulfide, tangerine oil, triethylaluminium, triisobutylaluminium
- should not be heated above 49 deg. C. when in contact with aluminium equipment

Secondary alcohols and some branched primary alcohols may produce potentially explosive peroxides after exposure to light and/ or heat.

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
New Zealand Workplace Exposure Standards (WES)	isopropanol	Isopropyl alcohol	400 ppm / 983 mg/m3	1230 mg/m3 / 500 ppm	Not Available	Not Available

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
isopropanol	400 ppm	2000* ppm	12000** ppm

Ingredient	Original IDLH	Revised IDLH
isopropanol	2,000 ppm	Not Available

MATERIAL DATA

Odour Threshold Value: 3.3 ppm (detection), 7.6 ppm (recognition)

Exposure at or below the recommended isopropanol TLV-TWA and STEL is thought to minimise the potential for inducing narcotic effects or significant irritation of the eyes or upper respiratory tract. It is believed, in the absence of hard evidence, that this limit also provides protection against the development of chronic health effects. The limit is intermediate to that set for ethanol, which is less toxic, and n-propyl alcohol, which is more toxic, than isopropanol

Exposure controls

Appropriate engineering controls

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.

Employers may need to use multiple types of controls to prevent employee overexposure.

For flammable liquids and flammable gases, local exhaust ventilation or a process enclosure ventilation system may be required. Ventilation equipment should be explosion-resistant.

Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Type of Contaminant:	Air Speed:
solvent, vapours, degreasing etc., evaporating from tank (in still air).	0.25-0.5 m/s (50-100 f/min.)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5-1 m/s (100-200 f/min.)
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min.)

Within each range the appropriate value depends on:

Lower end of the range	Upper end of the range
1: Room air currents minimal or favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only.	2: Contaminants of high toxicity

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	3: Intermittent, low production. 4: Large hood or large air mass in motion 3: High production, heavy use 4: Small hood-local control only Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min.) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.
Personal protection	
Eye and face protection	▶ Safety glasses with side shields. ▶ Chemical goggles. ▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]
Skin protection	See Hand protection below
Hands/feet protection	The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended. Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: · frequency and duration of contact, · chemical resistance of glove material, · glove thickness and · dexterity Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent). · When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. · When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. · Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use. · Contaminated gloves should be replaced. As defined in ASTM F-739-96 in any application, gloves are rated as: · Excellent when breakthrough time > 480 min · Good when breakthrough time > 20 min · Fair when breakthrough time < 20 min · Poor when glove material degrades For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended. It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times. Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers technical data should always be taken into account to ensure selection of the most appropriate glove for the task. Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example: · Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of. · Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended. ▶ Wear chemical protective gloves, e.g. PVC. ▶ Wear safety footwear or safety gumboots, e.g. Rubber
Body protection	See Other protection below
Other protection	▶ Overalls. ▶ PVC Apron. ▶ PVC protective suit may be required if exposure severe. ▶ Eyewash unit. ▶ Ensure there is ready access to a safety shower. ▶ Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity. ▶ For large scale or continuous use wear tight-weave non-static clothing (no metallic fasteners, cuffs or pockets). ▶ Non sparking safety or conductive footwear should be considered. Conductive footwear describes a boot or shoe with a sole made from a conductive compound chemically bound to the bottom components, for permanent control to electrically ground the foot and shall dissipate static electricity from the body to reduce the possibility of ignition of volatile compounds. Electrical resistance must range between 0 to 500,000 ohms. Conductive shoes should be stored in lockers close to the room in which they are worn. Personnel who have been issued conductive footwear should not wear them from their place of work to their homes and return.

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

"Forsberg Clothing Performance Index".

The effect(s) of the following substance(s) are taken into account in the *computer-*

Respiratory protection

Type A Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.

Continued...

ANDREW ISOPROPYL ALCOHOL

generated selection:

ANDREW ISOPROPYL ALCOHOL

Material	CPI
NEOPRENE	A
NITRILE	A
NITRILE+PVC	A
PE/EVAL/PE	A
PVC	B
NAT+NEOPR+NITRILE	C
NATURAL RUBBER	C
NATURAL+NEOPRENE	C

* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	Air-line*	A-2	A-PAPR-2 ^
up to 20 x ES	-	A-3	-
20+ x ES	-	Air-line**	-

* - Continuous-flow; ** - Continuous-flow or positive pressure demand

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance	THIN CLEAR LIQUID WITH A STRONG SOLVENT ODOUR		
Physical state	Liquid	Relative density (Water = 1)	0.79
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	456
pH (as supplied)	Not Available	Decomposition temperature	Not Available
Melting point / freezing point (°C)	-90	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	80-83	Molecular weight (g/mol)	Not Available
Flash point (°C)	11.7	Taste	Not Available
Evaporation rate	Not Available BuAC = 1	Explosive properties	Not Available
Flammability	HIGHLY FLAMMABLE.	Oxidising properties	Not Available
Upper Explosive Limit (%)	12	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	1.8	Volatile Component (%vol)	100
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Miscible	pH as a solution (Not Available%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	790

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	- Unstable in the presence of incompatible materials. - Product is considered stable. - Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
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Continued...

ANDREW ISOPROPYL ALCOHOL

	Exposure to aliphatic alcohols with more than 3 carbons may produce central nervous system effects such as headache, dizziness, drowsiness, muscle weakness, delirium, CNS depression, coma, seizure, and neurobehavioural changes. Symptoms are more acute with higher alcohols. Respiratory tract involvement may produce irritation of the mucosa, respiratory insufficiency, respiratory depression secondary to CNS depression, pulmonary oedema, chemical pneumonitis and bronchitis. Cardiovascular involvement may result in arrhythmias and hypotension. Gastrointestinal effects may include nausea and vomiting. Kidney and liver damage may result following massive exposures. The alcohols are potential irritants being, generally, stronger irritants than similar organic structures that lack functional groups (e.g. alkanes) but are much less irritating than the corresponding amines, aldehydes or ketones. Alcohols and glycols (diols) rarely represent serious hazards in the workplace, because their vapour concentrations are usually less than the levels which produce significant irritation which, in turn, produce significant central nervous system effects as well. The odour of isopropanol may give some warning of exposure, but odour fatigue may occur. Inhalation of isopropanol may produce irritation of the nose and throat with sneezing, sore throat and runny nose. The effects in animals subject to a single exposure, by inhalation, included inactivity or anaesthesia and histopathological changes in the nasal canal and auditory canal. Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual.
Ingestion	Swallowing of the liquid may cause aspiration of vomit into the lungs with the risk of haemorrhaging, pulmonary oedema, progressing to chemical pneumonitis; serious consequences may result. Signs and symptoms of chemical (aspiration) pneumonitis may include coughing, gasping, choking, burning of the mouth, difficult breathing, and bluish coloured skin (cyanosis). Effects on the nervous system characterise over-exposure to higher aliphatic alcohols. These include headache, muscle weakness, giddiness, ataxia, (loss of muscle coordination), confusion, delirium and coma. Gastrointestinal effects may include nausea, vomiting and diarrhoea. In the absence of effective treatment, respiratory arrest is the most common cause of death in animals acutely poisoned by the higher alcohols. Aspiration of liquid alcohols produces an especially toxic response as they are able to penetrate deeply in the lung where they are absorbed and may produce pulmonary injury. Those possessing lower viscosity elicit a greater response. The result is a high blood level and prompt death at doses otherwise tolerated by ingestion without aspiration. In general the secondary alcohols are less toxic than the corresponding primary isomers. As a general observation, alcohols are more powerful central nervous system depressants than their aliphatic analogues. In sequence of decreasing depressant potential, tertiary alcohols with multiple substituent OH groups are more potent than secondary alcohols, which, in turn, are more potent than primary alcohols. The potential for overall systemic toxicity increases with molecular weight (up to C7), principally because the water solubility is diminished and lipophilicity is increased. Within the homologous series of aliphatic alcohols, narcotic potency may increase even faster than lethality Only scanty toxicity information is available about higher homologues of the aliphatic alcohol series (greater than C7) but animal data establish that lethality does not continue to increase with increasing chain length. Aliphatic alcohols with 8 carbons are less toxic than those immediately preceding them in the series. 10 -Carbon n-decyl alcohol has low toxicity as do the solid fatty alcohols (e.g. lauryl, myristyl, cetyl and stearyl). However the rat aspiration test suggests that decyl and melted dodecyl (lauryl) alcohols are dangerous if they enter the trachea. In the rat even a small quantity (0.2 ml) of these behaves like a hydrocarbon solvent in causing death from pulmonary oedema. Primary alcohols are metabolised to corresponding aldehydes and acids; a significant metabolic acidosis may occur. Secondary alcohols are converted to ketones, which are also central nervous system depressants and which, in the case of the higher homologues persist in the blood for many hours. Tertiary alcohols are metabolised slowly and incompletely so their toxic effects are generally persistent. The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. The material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern. Following ingestion, a single exposure to isopropyl alcohol produced lethargy and non-specific effects such as weight loss and irritation. Ingestion of near-lethal doses of isopropanol produces histopathological changes of the stomach, lungs and kidneys, incoordination, lethargy, gastrointestinal tract irritation, and inactivity or anaesthesia. Swallowing 10 ml. of isopropanol may cause serious injury; 100 ml. may be fatal if not promptly treated. The adult single lethal doses is approximately 250 ml. The toxicity of isopropanol is twice that of ethanol and the symptoms of intoxication appear to be similar except for the absence of an initial euphoric effect; gastritis and vomiting are more prominent. Ingestion may cause nausea, vomiting, and diarrhoea. There is evidence that a slight tolerance to isopropanol may be acquired. Accidental ingestion of the material may be damaging to the health of the individual.
Skin Contact	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting. Most liquid alcohols appear to act as primary skin irritants in humans. Significant percutaneous absorption occurs in rabbits but not apparently in man. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected. 511ipa
Eye	Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals. Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur. Isopropanol vapour may cause mild eye irritation at 400 ppm. Splashes may cause severe eye irritation, possible corneal burns and eye damage. Eye contact may cause tearing or blurring of vision.
Chronic	Long-term exposure to the product is not thought to produce chronic effects adverse to health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course. Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed. Serious damage (clear functional disturbance or morphological change which may have toxicological significance) is likely to be caused by repeated or prolonged exposure. As a rule the material produces, or contains a substance which produces severe lesions. Such damage may become apparent following direct application in subchronic (90 day) toxicity studies or following sub-acute (28 day) or chronic (two-year) toxicity tests. Long term or repeated ingestion exposure of isopropanol may produce incoordination, lethargy and reduced weight gain. Repeated inhalation exposure to isopropanol may produce narcosis, incoordination and liver degeneration. Animal data show developmental effects only at exposure levels that produce toxic effects in the adult animals. Isopropanol does not cause genetic damage in bacterial or mammalian cell cultures or in animals. There are inconclusive reports of human sensitisation from skin contact with isopropanol. Chronic alcoholics are more tolerant of systemic isopropanol than are persons who do not consume alcohol; alcoholics have survived as much as 500 ml. of 70% isopropanol. Continued voluntary drinking of a 2.5% aqueous solution through two successive generations of rats produced no reproductive effects. NOTE: Commercial isopropanol does not contain "isopropyl oil". An excess incidence of sinus and laryngeal cancers in isopropanol production workers has been shown to be caused by the byproduct "isopropyl oil". Changes in the production processes now ensure that no byproduct is formed. Production changes include use of dilute sulfuric acid at higher temperatures.

ANDREW ISOPROPYL ALCOHOL

ANDREW ISOPROPYL ALCOHOL	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: 12800 mg/kg ^[2]	Not Available
	Inhalation(Mouse) LC50; 53 mg/L4h ^[2]	
isopropanol	Oral (Mouse) LD50; 3600 mg/kg ^[2]	
	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: 12800 mg/kg ^[2]	Eye (rabbit): 10 mg - moderate
	Inhalation(Mouse) LC50; 53 mg/L4h ^[2]	Eye (rabbit): 100 mg - SEVERE
	Oral (Mouse) LD50; 3600 mg/kg ^[2]	Eye (rabbit): 100mg/24hr-moderate
		Skin (rabbit): 500 mg - mild
Legend:	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

ISOPROPANOL	Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production. The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis. The substance is classified by IARC as Group 3: NOT classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing.
ANDREW ISOPROPYL ALCOHOL & ISOPROPANOL	For isopropanol (IPA): Acute toxicity: Isopropanol has a low order of acute toxicity. It is irritating to the eyes, but not to the skin. Very high vapor concentrations are irritating to the eyes, nose, and throat, and prolonged exposure may produce central nervous system depression and narcosis. Human volunteers reported that exposure to 400 ppm isopropanol vapors for 3 to 5 min. caused mild irritation of the eyes, nose and throat. Although isopropanol produced little irritation when tested on the skin of human volunteers, there have been reports of isolated cases of dermal irritation and/or sensitization. The use of isopropanol as a sponge treatment for the control of fever has resulted in cases of intoxication, probably the result of both dermal absorption and inhalation. There have been a number of cases of poisoning reported due to the intentional ingestion of isopropanol, particularly among alcoholics or suicide victims. These ingestions typically result in a comatose condition. Pulmonary difficulty, nausea, vomiting, and headache accompanied by various degrees of central nervous system depression are typical. In the absence of shock, recovery usually occurred. Repeat dose studies: The systemic (non-cancer) toxicity of repeated exposure to isopropanol has been evaluated in rats and mice by the inhalation and oral routes. The only adverse effects-in addition to clinical signs identified from these studies were to the kidney. Reproductive toxicity: A recent two-generation reproductive study characterised the reproductive hazard for isopropanol associated with oral gavage exposure. This study found that the only reproductive parameter apparently affected by isopropanol exposure was a statistically significant decrease in male mating index of the F1 males. It is possible that the change in this reproductive parameter was treatment related and significant, although the mechanism of this effect could not be discerned from the results of the study. However, the lack of a significant effect of the female mating index in either generation, the absence of any adverse effect on litter size, and the lack of histopathological findings of the testes of the high-dose males suggest that the observed reduction in male mating index may not be biologically meaningful. Developmental toxicity: The developmental toxicity of isopropanol has been characterized in rat and rabbit developmental toxicity studies. These studies indicate that isopropanol is not a selective developmental hazard. Isopropanol produced developmental toxicity in rats, but not in rabbits. In the rat, the developmental toxicity occurred only at maternally toxic doses and consisted of decreased foetal body weights, but no teratogenicity. Genotoxicity: All genotoxicity assays reported for isopropanol have been negative Carcinogenicity: rodent inhalation studies were conducted to evaluate isopropanol for cancer potential. The only tumor rate increase seen was for interstitial (Leydig) cell tumors in the male rats. Interstitial cell tumors of the testis is typically the most frequently observed spontaneous tumor in aged male Fischer 344 rats. These studies demonstrate that isopropanol does not exhibit carcinogenic potential relevant to humans. Furthermore, there was no evidence from this study to indicate the development of carcinomas of the testes in the male rat, nor has isopropanol been found to be genotoxic. Thus, the testicular tumors seen in the isopropanol exposed male rats are considered of no significance in terms of human cancer risk assessment

Acute Toxicity	✗	Carcinogenicity	✗
Skin Irritation/Corrosion	✗	Reproductivity	✗
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	✗
Respiratory or Skin sensitisation	✗	STOT - Repeated Exposure	✗
Mutagenicity	✗	Aspiration Hazard	✓

Legend: ✗ – Data either not available or does not fill the criteria for classification
✓ – Data available to make classification

SECTION 12 Ecological information

Toxicity

ANDREW ISOPROPYL ALCOHOL	Endpoint	Test Duration (hr)	Species	Value	Source
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Continued...

ANDREW ISOPROPYL ALCOHOL

	EC50(ECx)	24h	Algae or other aquatic plants	0.011mg/L	4
	LC50	96h	Fish	4200mg/l	4
	EC50	72h	Algae or other aquatic plants	>1000mg/l	1
	EC50	48h	Crustacea	7550mg/l	4
	EC50	96h	Algae or other aquatic plants	>1000mg/l	1
isopropanol	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50(ECx)	24h	Algae or other aquatic plants	0.011mg/L	4
	LC50	96h	Fish	4200mg/l	4
	EC50	72h	Algae or other aquatic plants	>1000mg/l	1
	EC50	48h	Crustacea	7550mg/l	4
	EC50	96h	Algae or other aquatic plants	>1000mg/l	1

Legend: Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

For isopropanol (IPA):
log Kow : -0.16- 0.28
Half-life (hr) air : 33-84
Half-life (hr) H2O surface water : 130
Henry's atm m3 /mol: 8.07E-06
BOD 5: 1.19,60%
COD : 1.61-2.30,97%
ThOD : 2.4
BOD 20: >70% * [Akzo Nobel]

Environmental Fate
Based on calculated results from a lever 1 fugacity model,IPA is expected to partition primarily to the aquatic compartment (77.7%) with the remainder to the air (22.3%). IPA has been shown to biodegrade rapidly in aerobic, aqueous biodegradation tests and therefore, would not be expected to persist in aquatic habitats. IPA is also not expected to persist in surface soils due to rapid evaporation to the air. In the air, physical degradation will occur rapidly due to hydroxy radical (OH) attack. Overall, IPA presents a low potential hazard to aquatic or terrestrial biota.
IPA is expected to volatilise slowly from water based on a calculated Henry s Law constant of 7.52 x 10 -6 atm.m 3 /mole. The calculated half-life for the volatilisation from surface water (1 meter depth) is predicted to range from 4 days (from a river) to 31 days (from a lake). Hydrolysis is not considered a significant degradation process for IPA. However, aerobic biodegradation of IPA has been shown to occur rapidly under non-acclimated conditions, based on a result of 49% biodegradation from a 5 day BOD test. Additional biodegradation data developed using standardized test methods show that IPA is readily biodegradable in both freshwater and saltwater media (72 to 78% biodegradation in 20 days). IPA will evaporate quickly from soil due to its high vapor pressure (43 hPa at 20°C), and is not expected to partition to the soil based on a calculated soil adsorption coefficient (log Koc) of 0.03.
IPA has the potential to leach through the soil due to its low soil adsorption
In the air, isopropanol is subject to oxidation predominantly by hydroxy radical attack. The room temperature rate constants determined by several investigators are in good agreement for the reaction of IPA with hydroxy radicals. The atmospheric half-life is expected to be 10 to 25 hours, based on measured degradation rates ranging from 5.1 to 7.1 x 10 -12 cm3 /molecule-sec, and an OH concentration of 1.5 x 106 molecule/cm3 , which is a commonly used default value for calculating atmospheric half-lives. Using OH concentrations representative of polluted (3 x 106) and pristine (3 x 105) air, the atmospheric half-life of IPA would range from 9 to 126 hours, respectively. Direct photolysis is not expected to be an important transformation process for the degradation of IPA.
Ecotoxicity:
IPA has been shown to have a low order of acute aquatic toxicity. Results from 24- to 96-hour LC50 studies range from 1,400 to more than 10,000 mg/L for freshwater and saltwater fish and invertebrates. In addition, 16-hour to 8-day toxicity threshold levels (equivalent to 3% inhibition in cell growth) ranging from 104 to 4,930 mg/L have been demonstrated for various microorganisms.
Chronic aquatic toxicity has also been shown to be of low concern, based on 16- to 21-day NOEC values of 141 to 30 mg/L, respectively, for a freshwater invertebrate.
Bioconcentration of IPA in aquatic organisms is not expected to occur based on a measured log octanol/water partition coefficient (log Kow) of 0.05, a calculated bioconcentration factor of 1 for a freshwater fish, and the unlikelihood of constant, long-term exposures.
Toxicity to Plants
Toxicity of IPA to plants is expected to be low, based on a 7-day toxicity threshold value of 1,800 mg/L for a freshwater algae, and an EC50 value of 2,100 mg/L from a lettuce seed germination test.
DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
isopropanol	LOW (Half-life = 14 days)	LOW (Half-life = 3 days)

Bioaccumulative potential

Ingredient	Bioaccumulation
isopropanol	LOW (LogKOW = 0.05)

Mobility in soil

Ingredient	Mobility
isopropanol	HIGH (KOC = 1.06)

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. A Hierarchy of Controls seems to be common - the user should investigate: ▶ Reduction ▶ Reuse
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ANDREW ISOPROPYL ALCOHOL

- ▶ Recycling
- ▶ Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

- ▶ **DO NOT allow wash water from cleaning or process equipment to enter drains.**
- ▶ It may be necessary to collect all wash water for treatment before disposal.
- ▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- ▶ Where in doubt contact the responsible authority.
- ▶ Recycle wherever possible.
- ▶ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
- ▶ Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or Incineration in a licensed apparatus (after admixture with suitable combustible material).
- ▶ Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

Ensure that the hazardous substance is disposed in accordance with the Hazardous Substances (Disposal) Notice 2017

Disposal Requirements

Packages that have been in direct contact with the hazardous substance must be only disposed if the hazardous substance was appropriately removed and cleaned out from the package. The package must be disposed according to the manufacturer's directions taking into account the material it is made of. Packages which hazardous content have been appropriately treated and removed may be recycled.

The hazardous substance must only be disposed if it has been treated by a method that changed the characteristics or composition of the substance and it is no longer hazardous.

DO NOT deposit the hazardous substance into or onto a landfill or a sewage facility.

Burning the hazardous substance must happen under controlled conditions with no person or place exposed to

(1) a blast overpressure of more than 9 kPa; or

(2) an unsafe level of heat radiation.

The disposed hazardous substance must not come into contact with class 1 or 5 substances.

SECTION 14 Transport information**Labels Required**

	
Marine Pollutant	NO
HAZCHEM	*2YE

Land transport (UN)

UN number	1219	
UN proper shipping name	ISOPROPANOL (ISOPROPYL ALCOHOL)	
Transport hazard class(es)	Class	3
	Subrisk	Not Applicable
Packing group	II	
Environmental hazard	Not Applicable	
Special precautions for user	Special provisions	Not Applicable
	Limited quantity	1 L

Air transport (ICAO-IATA / DGR)

UN number	1219	
UN proper shipping name	Isopropyl alcohol; Isopropanol	
Transport hazard class(es)	ICAO/IATA Class	3
	ICAO / IATA Subrisk	Not Applicable
	ERG Code	3L
Packing group	II	
Environmental hazard	Not Applicable	
Special precautions for user	Special provisions	A180
	Cargo Only Packing Instructions	364
	Cargo Only Maximum Qty / Pack	60 L
	Passenger and Cargo Packing Instructions	353
	Passenger and Cargo Maximum Qty / Pack	5 L
	Passenger and Cargo Limited Quantity Packing Instructions	Y341
	Passenger and Cargo Limited Maximum Qty / Pack	1 L

Sea transport (IMDG-Code / GGVSee)

UN number	1219		
UN proper shipping name	ISOPROPANOL (ISOPROPYL ALCOHOL)		
Transport hazard class(es)	IMDG Class	3	
	IMDG Subrisk	Not Applicable	
Packing group	II		
Environmental hazard	Not Applicable		
Special precautions for user	EMS Number	F-E , S-D	
	Special provisions	Not Applicable	
	Limited Quantities	1 L	

Transport in bulk according to Annex II of MARPOL and the IBC code

Product name	Pollution Category	Ship Type
Oxygenated aliphatic hydrocarbon mixture	Z	3

Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
isopropanol	Not Available

Transport in bulk in accordance with the ICG Code

Product name	Ship Type
isopropanol	Not Available

SECTION 15 Regulatory information

Safety, health and environmental regulations / legislation specific for the substance or mixture

This substance is to be managed using the conditions specified in an applicable Group Standard

HSR Number	Group Standard
HSR001180	Isopropanol

Please refer to Section 8 of the SDS for any applicable tolerable exposure limit or Section 12 for environmental exposure limit.

isopropanol is found on the following regulatory lists

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs	New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data
New Zealand Approved Hazardous Substances with controls	New Zealand Inventory of Chemicals (NZIoC)
New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals	New Zealand Workplace Exposure Standards (WES)

Hazardous Substance Location

Subject to the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Hazard Class	Quantity (Closed Containers)	Quantity (Open Containers)
3.1B	100 L in containers more than 5 L	50 L
3.1B	250 L in containers up to and including 5 L	50 L

Certified Handler

Subject to Part 4 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Class of substance	Quantities
Not Applicable	Not Applicable

Refer Group Standards for further information

Maximum quantities of certain hazardous substances permitted on passenger service vehicles

Subject to Regulation 13.14 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Hazard Class	Gas (aggregate water capacity in mL)	Liquid (L)	Solid (kg)	Maximum quantity per package for each classification
3.1B				1 L

Tracking Requirements

Not Applicable

National Inventory Status

National Inventory	Status
Australia - AICC / Australia	Yes

ANDREW ISOPROPYL ALCOHOL

National Inventory	Status
Non-Industrial Use	
Canada - DSL	Yes
Canada - NDSL	No (isopropanol)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	Yes
Legend:	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

SECTION 16 Other information

Revision Date	11/05/2021
Initial Date	12/06/2014

SDS Version Summary

Version	Date of Update	Sections Updated
6.10	11/05/2021	Acute Health (skin), Classification, First Aid (skin), Handling Procedure, Ingredients, Personal Protection (hands/feet), Synonyms

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average
 PC—STEL: Permissible Concentration-Short Term Exposure Limit
 IARC: International Agency for Research on Cancer
 ACGIH: American Conference of Governmental Industrial Hygienists
 STEL: Short Term Exposure Limit
 TEEL: Temporary Emergency Exposure Limit.
 IDLH: Immediately Dangerous to Life or Health Concentrations
 ES: Exposure Standard
 OSF: Odour Safety Factor
 NOAEL :No Observed Adverse Effect Level
 LOAEL: Lowest Observed Adverse Effect Level
 TLV: Threshold Limit Value
 LOD: Limit Of Detection
 OTV: Odour Threshold Value
 BCF: BioConcentration Factors
 BEI: Biological Exposure Index
 AIC: Australian Inventory of Industrial Chemicals
 DSL: Domestic Substances List
 NDSL: Non-Domestic Substances List
 IECSC: Inventory of Existing Chemical Substance in China
 EINECS: European INventory of Existing Commercial chemical Substances
 ELINCS: European List of Notified Chemical Substances
 NLP: No-Longer Polymers
 ENCS: Existing and New Chemical Substances Inventory
 KECI: Korea Existing Chemicals Inventory
 NZIoC: New Zealand Inventory of Chemicals
 PICCS: Philippine Inventory of Chemicals and Chemical Substances
 TSCA: Toxic Substances Control Act
 TCSI: Taiwan Chemical Substance Inventory
 INSQ: Inventario Nacional de Sustancias Químicas
 NCI: National Chemical Inventory
 FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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CRC (NZ) 2018 Lectra Clean (Aerosol)

CRC Industries (CRC Industries New Zealand)

Chemwatch: 4546-62

Version No: 11.1

Safety Data Sheet according to the Health and Safety at Work (Hazardous Substances) Regulations 2017

Chemwatch Hazard Alert Code: 4

Issue Date: 10/03/2023

Print Date: 25/04/2024

S.GHS.NZL.EN

SECTION 1 Identification of the substance / mixture and of the company / undertaking

Product Identifier

Product name	CRC (NZ) 2018 Lectra Clean (Aerosol)
Chemical Name	Not Applicable
Synonyms	Not Available
Proper shipping name	AEROSOLS
Chemical formula	Not Applicable
Other means of identification	Not Available

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Cleaner and degreaser. Application is by spray atomisation from a hand held aerosol pack
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Details of the manufacturer or supplier of the safety data sheet

Registered company name	CRC Industries (CRC Industries New Zealand)
Address	10 Highbrook Drive East Tamaki Auckland New Zealand
Telephone	+64 9 272 2700
Fax	+64 9 274 9696
Website	www.crc.co.nz
Email	info.nz@crc.co.nz

Emergency telephone number

Association / Organisation	CRC Industries (CRC Industries New Zealand)	CHEMWATCH EMERGENCY RESPONSE (24/7)
Emergency telephone numbers	NZ Poisons Centre 0800 POISON (0800 764 766)	+64 800 700 112
Other emergency telephone numbers	111 (NZ Emergency Services)	+61 3 9573 3188

Once connected and if the message is not in your preferred language then please dial 01

SECTION 2 Hazards identification

Classification of the substance or mixture

Classification [1]	Aerosols Category 3, Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 2, Acute Toxicity (Inhalation) Category 4, Specific Target Organ Toxicity - Single Exposure (Narcotic Effects) Category 3, Germ Cell Mutagenicity Category 2, Carcinogenicity Category 1, Specific Target Organ Toxicity - Repeated Exposure Category 2, Hazardous to the Aquatic Environment Acute Hazard Category 1, Hazardous to the Aquatic Environment Long-Term Hazard Category 1
Legend:	1. Classified by Chemwatch; 2. Classification drawn from CCID EPA NZ; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI
Determined by Chemwatch using GHS/HSNO criteria	6.1D (inhalation), 6.3A, 6.4A, 6.6B, 6.7A, 6.9B, 9.1A

Label elements

Hazard pictogram(s)	
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Signal word	Danger
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Hazard statement(s)

H229	Pressurised container: May burst if heated.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H336	May cause drowsiness or dizziness.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H373	May cause damage to organs through prolonged or repeated exposure.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statement(s) Prevention

P201	Obtain special instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P251	Do not pierce or burn, even after use.
P260	Do not breathe mist/vapours/spray.

Precautionary statement(s) Response

P308+P313	IF exposed or concerned: Get medical advice/ attention.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.
P337+P313	If eye irritation persists: Get medical advice/attention.

Precautionary statement(s) Storage

P405	Store locked up.
P410+P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.
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SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
79-01-6	>60	<u>trichloroethylene</u>
127-18-4	10-30	<u>tetrachloroethylene</u>
124-38-9	1-9	<u>carbon dioxide</u>
Not Available		NOTE: Manufacturer has supplied full ingredient
Not Available		information to allow CHEMWATCH assessment.

Legend: 1. Classified by Chemwatch; 2. Classification drawn from CCID EPA NZ; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 4. Classification drawn from C&L; * EU IOELVs available

SECTION 4 First aid measures

Description of first aid measures

Eye Contact	If aerosols come in contact with the eyes:
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	▶ Immediately hold the eyelids apart and flush the eye continuously for at least 15 minutes with fresh running water. ▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▶ Transport to hospital or doctor without delay. ▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If solids or aerosol mists are deposited upon the skin: ▶ Flush skin and hair with running water (and soap if available). ▶ Remove any adhering solids with industrial skin cleansing cream. ▶ DO NOT use solvents. ▶ Seek medical attention in the event of irritation.
Inhalation	If aerosols, fumes or combustion products are inhaled: ▶ Remove to fresh air. ▶ Lay patient down. Keep warm and rested. ▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▶ If breathing is shallow or has stopped, ensure clear airway and apply resuscitation, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▶ Transport to hospital, or doctor.
Ingestion	Not considered a normal route of entry. If poisoning occurs, contact a doctor or Poisons Information Centre. ▶ Avoid giving milk or oils. ▶ Avoid giving alcohol.

Indication of any immediate medical attention and special treatment needed

for intoxication due to Freons/ Halons;

A: Emergency and Supportive Measures

- ▶ Maintain an open airway and assist ventilation if necessary
- ▶ Treat coma and arrhythmias if they occur. Avoid (adrenaline) epinephrine or other sympathomimetic amines that may precipitate ventricular arrhythmias. Tachyarrhythmias caused by increased myocardial sensitisation may be treated with propranolol, 1-2 mg IV or esmolol 25-100 microgm/kg/min IV.
- ▶ Monitor the ECG for 4-6 hours

B: Specific drugs and antidotes:

- ▶ There is no specific antidote

C: Decontamination

- ▶ Inhalation; remove victim from exposure, and give supplemental oxygen if available.
- ▶ Ingestion; (a) Prehospital: Administer activated charcoal, if available. **DO NOT** induce vomiting because of rapid absorption and the risk of abrupt onset CNS depression. (b) Hospital: Administer activated charcoal, although the efficacy of charcoal is unknown. Perform gastric lavage only if the ingestion was very large and recent (less than 30 minutes)

D: Enhanced elimination:

- ▶ There is no documented efficacy for diuresis, haemodialysis, haemoperfusion, or repeat-dose charcoal.

POISONING and DRUG OVERDOSE, Californian Poison Control System Ed. Kent R Olson; 3rd Edition

- ▶ Do not administer sympathomimetic drugs unless absolutely necessary as material may increase myocardial irritability.
- ▶ No specific antidote.
- ▶ Because rapid absorption may occur through lungs if aspirated and cause systematic effects, the decision of whether to induce vomiting or not should be made by an attending physician.
- ▶ If lavage is performed, suggest endotracheal and/or esophageal control.
- ▶ Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach.
- ▶ Treatment based on judgment of the physician in response to reactions of the patient

Treat symptomatically.

DO NOT administer sympathomimetic drugs as they may cause ventricular arrhythmias.

For acute or short term repeated exposures to perchloroethylene:

- ▶ Tetrachloroethylene / perchloroethylene is well absorbed through the lungs with peak levels more important than duration in determining blood concentration. Lungs excrete most of the absorbed tetrachloroethylene in an unchanged state; about 3% is converted by the liver to form trichloroacetic acid and subsequently excreted by the kidney. Exhaled material has a biological half-life of 65 hours.

INHALATION:

- ▶ The treatment of acute inhalation exposures is supportive with initial attention directed to evaluation / support of ventilation and circulation. As with all hydrocarbons care must be taken to reduce the risk of aspiration by proper positioning and medical observation.

INGESTION:

- ▶ The ingestion level at which emesis should be induced is difficult to predict in the absence of extensive human studies.
- ▶ The role of charcoal and cathartics remains uncertain.

[Ellenhorn and Barceloux: Medical Toxicology]

BIOLOGICAL EXPOSURE INDEX - BEI

These represent the determinants observed in specimens collected from a healthy worker who has been exposed at the Exposure Standard (ES or TLV):

Determinant	Index	Sampling Time	Comments
1. Perchloroethylene in end-exhaled air	10 ppm	Prior to last shift of work-week	
2. Perchloroethylene in blood	1 mg/L	Prior to last shift of work-week	
3. Trichloroacetic acid in urine	7 mg/L	End of work-week	NS, SQ

NS: Non-specific determinant; also seen after exposure to other materials

SQ: Semi-quantitative determinant - Interpretation may be ambiguous; should be used as a screening test or confirmatory test.

Following acute or short-term continued exposures to trichloroethylene:

- ▶ Trichloroethylene concentration in expired air correlates with exposure. 8 hours exposure to 100 ppm produces levels of 25 ppm immediately and 1 ppm 16 hours after exposure.
- ▶ Most mild exposures respond to removal from the source and supportive care. Serious toxicity most often results from hypoxemia or cardiac dysrhythmias so that oxygen, intubation, intravenous lines and cardiac monitoring should be started initially as the clinical situation dictates.

- ▶ Ipecac syrup should be given to alert patients who ingest more than a minor amount and present within 2 hours.
- ▶ The efficacy of activated charcoal and cathartics is unclear.
- ▶ The metabolites, trichloroacetic acid, trichloroethanol and to a lesser degree, chloral hydrate, may be detected in the urine up to 16 days postexposure.

[Ellenhorn and Barceloux; Medical Toxicology]

BIOLOGICAL EXPOSURE INDEX - BEI

These represent the determinants observed in specimens collected from a healthy worker exposed at the Exposure Standard (ES or TLV):

Determinant	Index	Sampling Time	Comments
1. Trichloroacetic acid in urine	10 mg/gm creatinine	End of work-week	NS
2. Trichloroacetic acid AND Trichloroethanol in urine	300mg/mg creatinine	End of shift at end of work-week	NS
3. Free Trichloroethanol in blood	4 mg/L	End of shift at end of work-week	NS
4. Trichloroethylene in end-exhaled air			SQ
5. Trichloroethylene in blood			SQ

NS: Non-specific determinant; also seen after exposure to other materials

SQ: Semi-quantitative determinant - Interpretation may be ambiguous; should be used as a screening test or confirmatory test.

SECTION 5 Firefighting measures

Extinguishing media

SMALL FIRE:

- ▶ Water spray, dry chemical or CO₂

LARGE FIRE:

- ▶ Water spray or fog.

Special hazards arising from the substrate or mixture

Fire Incompatibility	▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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Advice for firefighters

Fire Fighting	▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ May be violently or explosively reactive. ▶ Wear breathing apparatus plus protective gloves. ▶ Prevent, by any means available, spillage from entering drains or water course.
Fire/Explosion Hazard	▶ Non combustible. ▶ Not considered to be a significant fire risk. ▶ Heating may cause expansion or decomposition leading to violent rupture of containers. ▶ Aerosol cans may explode on exposure to naked flames. Decomposition may produce toxic fumes of: carbon monoxide (CO) Combustion products include: carbon dioxide (CO₂) hydrogen chloride phosgene other pyrolysis products typical of burning organic material. Contains low boiling substance: Closed containers may rupture due to pressure buildup under fire conditions. ▶ Non flammable liquid. ▶ However vapour will burn when in contact with high temperature flame. ▶ Ignition ceases on removal of flame. ▶ May form a flammable / explosive mixture in an oxygen enriched atmosphere ▶ Heating may cause expansion/vapourisation with violent rupture of containers ▶ Decomposes on heating and produces corrosive fumes of hydrochloric acid, carbon monoxide and small amounts of toxic phosgene.

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	▶ Clean up all spills immediately. ▶ Avoid breathing vapours and contact with skin and eyes. ▶ Wear protective clothing, impervious gloves and safety glasses. ▶ Shut off all possible sources of ignition and increase ventilation.
Major Spills	▶ DO NOT exert excessive pressure on valve; DO NOT attempt to operate damaged valve. ▶ Clear area of personnel and move upwind.

- ▶ Alert Fire Brigade and tell them location and nature of hazard.
- ▶ May be violently or explosively reactive.
- ▶ Wear breathing apparatus plus protective gloves.
- ▶ Remove leaking cylinders to a safe place if possible.
- ▶ Release pressure under safe, controlled conditions by opening the valve.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	▶ Avoid all personal contact, including inhalation. ▶ Wear protective clothing when risk of exposure occurs. ▶ Use in a well-ventilated area. ▶ Prevent concentration in hollows and sumps.
Other information	▶ Keep dry to avoid corrosion of cans. Corrosion may result in container perforation and internal pressure may eject contents of can

Conditions for safe storage, including any incompatibilities

Suitable container	▶ DO NOT use aluminium or galvanised containers ▶ Aerosol dispenser. ▶ Check that containers are clearly labelled.
Storage incompatibility	▶ Haloalkenes are highly reactive. ▶ Some of the more lightly substituted lower members are highly flammable; many members of the group are peroxidisable and polymerisable. ▶ Avoid reaction or contact with potassium or its alloys - although apparently stable on contact with a wide range of halocarbons, reaction products may be shock-sensitive and may explode with great violence on light impact. Severity generally increases with the degree of halocarbon substitution and potassium-sodium alloys give extremely sensitive mixtures. ▶ Haloacetylenes should be used with exceptional precautions. ▶ Explosions may occur during distillation when bath temperatures are too high or if air is admitted to a hot vacuum-distillation as evidenced by experience with bromoacetylenes. BREITHERICK L.: Handbook of Reactive Chemical Hazards Tetrachloroethylene: ▶ decomposes slowly in contact with water or moisture forming trichloroacetic acid and hydrochloric acid ▶ reacts violently with concentrated nitric acid (producing carbon dioxide), strong oxidisers, strong alkalis, powdered chemically active metals such as aluminium, barium, beryllium, lithium, zinc ▶ is incompatible with nitrogen tetroxide, finely divided metals ▶ decomposes in UV light, on contact with red-hot metals, and at temperatures above 150 C, releasing hydrogen chloride, carbon monoxide and phosgene ▶ corrodes metals in the presence of moisture ▶ can oxidise in presence of air and light. The presence of 0.5% trichloroethylene as an impurity caused generation of dichloroacetylene during unheated drying over solid sodium hydroxide. Subsequent fractional distillation produced an explosion. Trichloroethylene: ▶ reacts violently with caustics (e.g. lye, potassium hydroxide, sodium hydroxide, etc.) ▶ produces spontaneously explosive dichloroacetylene in presence of caustics, epichlorohydrin, epoxides ▶ forms an explosive mixture with nitrogen tetroxide ▶ reacts violently with finely divided chemically active metals ▶ may undergo self-accelerating polymerisation in presence of magnesium, titanium, aluminium ▶ may ignite on contact with alkaline metal earths ▶ reacts explosively with sodium, potassium, lithium ▶ may decompose with formation of chlorine gas, hydrogen chloride gas and phosgene at high temperatures, in contact with hot metals, open flame and high intensity UV light ▶ slowly decomposes in light, in the presence of moisture, forming hydrochloric acid ▶ reacts, possibly violently, with aluminium tripropyl, antimony triethyl, antimony trimethyl, dimethylformamide, liquid oxygen, ozone, potassium nitrate, trimethylaluminium ▶ attacks metals, coatings, and plastics in presence of moisture ▶ attacks natural rubber ▶ may accumulate static charge and cause ignition of vapors Avoid storage with strong oxidisers (particularly oxygen in gas or liquid form and nitrogen dioxide), strong bases, acetone, sodium/sodium-potassium alloys, zinc. ▶ Avoid strong bases. ▶ Compressed gases may contain a large amount of kinetic energy over and above that potentially available from the energy of reaction produced by the gas in chemical reaction with other substances

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
New Zealand Workplace Exposure Standards (WES)	trichloroethylene	Trichloroethylene	10 ppm / 55 mg/m3	135 mg/m3 / 25 ppm	Not Available	carcinogen category 1 - Known or presumed human carcinogen oto - Ototoxin
New Zealand Workplace Exposure Standards (WES)	tetrachloroethylene	Perchloroethylene (Tetrachloroethylene)	20 ppm / 136 mg/m3	271 mg/m3 / 40 ppm	Not Available	carcinogen category 1 - Known or presumed human carcinogen (skin) - Skin absorption
New Zealand Workplace Exposure Standards (WES)	carbon dioxide	Carbon dioxide	5000 ppm / 9000 mg/m3	54000 mg/m3 / 30000 ppm	Not Available	Not Available

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
trichloroethylene	Not Available	Not Available	Not Available
tetrachloroethylene	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
trichloroethylene	1,000 ppm	Not Available
tetrachloroethylene	150 ppm	Not Available
carbon dioxide	40,000 ppm	Not Available

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.
Individual protection measures, such as personal protective equipment	
Eye and face protection	▸ Safety glasses with side shields. ▸ Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent] ▸ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.
Skin protection	See Hand protection below
Hands/feet protection	▸ Polyethylene gloves ▸ No special equipment needed when handling small quantities. ▸ OTHERWISE: ▸ For potentially moderate exposures: ▸ Wear general protective gloves, eg. light weight rubber gloves. ▸ For potentially heavy exposures: ▸ Wear chemical protective gloves, eg. PVC. and safety footwear.
Body protection	See Other protection below
Other protection	▸ Employees working with confirmed human carcinogens should be provided with, and be required to wear, clean, full body protective clothing (smocks, coveralls, or long-sleeved shirt and pants), shoe covers and gloves prior to entering the regulated area. [AS/NZS ISO 6529:2006 or national equivalent] ▸ Employees engaged in handling operations involving carcinogens should be provided with, and required to wear and use half-face filter-type respirators with filters for dusts, mists and fumes, or air purifying canisters or cartridges. A respirator affording higher levels of protection may be substituted. [AS/NZS 1715 or national equivalent] ▸ Emergency deluge showers and eyewash fountains, supplied with potable water, should be located near, within sight of, and on the same level with locations where direct exposure is likely. ▸ Prior to each exit from an area containing confirmed human carcinogens, employees should be required to remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to place used clothing and equipment in impervious containers at the point of exit for purposes of decontamination or disposal. The contents of such impervious containers must be identified with suitable labels. For maintenance and decontamination activities, authorized employees entering the area should be provided with and required to wear clean, impervious garments, including gloves, boots and continuous-air supplied hood. ▸ Prior to removing protective garments the employee should undergo decontamination and be required to shower upon removal of the garments and hood. No special equipment needed when handling small quantities. OTHERWISE: ▸ Overalls. ▸ Skin cleansing cream.

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

"Forsberg Clothing Performance Index".

The effect(s) of the following substance(s) are taken into account in the

computer-generated selection:

CRC (NZ) 2018 Lectra Clean (Aerosol)

Material	CPI
PE/EVAL/PE	A
PVA	A
TEFLON	B
VITON	B
BUTYL	C
CPE	C
HYPALON	C
NEOPRENE	C
NITRILE	C
NITRILE+PVC	C
PVC	C
SARANEX-23	C
SARANEX-23 2-PLY	C
VITON/CHLOROBUTYL	C
VITON/NEOPRENE	C
VITON/NITRILE	C

* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Ansell Glove Selection

Glove — <i>In order of recommendation</i>
AlphaTec® 38-612
AlphaTec® 58-005
AlphaTec® 53-001
AlphaTec® 58-530B
AlphaTec® 58-530W
AlphaTec® Solvex® 37-175
BioClean™ Emerald BENS
BioClean™ Extra BLAS
BioClean™ Fusion (Sterile) S-BFAP
BioClean™ N-Plus BNPS

The suggested gloves for use should be confirmed with the glove supplier.

Respiratory protection

Type A Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required. Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	A-AUS	-	A-PAPR-AUS / Class 1
up to 50 x ES	-	A-AUS / Class 1	-
up to 100 x ES	-	A-2	A-PAPR-2 ^

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Clear liquid with an ethereal odour; partially miscible with water. Soluble with most organic solvents. Supplied as an aerosol pack. Contents under PRESSURE. Contains carbon dioxide propellant.		
Physical state	Liquid	Relative density (Water = 1)	1.51

Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	Not Applicable	Decomposition temperature (°C)	Not Available
Melting point / freezing point (°C)	<0	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	86 initial	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	Not Available	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Available	Oxidising properties	Not Available
Upper Explosive Limit (%)	90	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	12.5	Volatile Component (%vol)	100
Vapour pressure (kPa)	6.4 @ 20C	Gas group	Not Available
Solubility in water	Immiscible	pH as a solution (1%)	Not Applicable
Vapour density (Air = 1)	>1	VOC g/L	Not Available

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	▶ Elevated temperatures. ▶ Presence of open flame. ▶ Product is considered stable. ▶ Hazardous polymerisation will not occur. ▶ Presence of elevated temperatures. ▶ Presence of heat source and ignition source
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled	Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo. Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual. There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Inhalation of toxic gases may cause: ▶ Central Nervous System effects including depression, headache, confusion, dizziness, stupor, coma and seizures; ▶ respiratory: acute lung swellings, shortness of breath, wheezing, rapid breathing, other symptoms and respiratory arrest; ▶ heart: collapse, irregular heartbeats and cardiac arrest; ▶ gastrointestinal: irritation, ulcers, nausea and vomiting (may be bloody), and abdominal pain. Inhalation hazard is increased at higher temperatures. Acute intoxication by halogenated aliphatic hydrocarbons appears to take place over two stages. Signs of a reversible narcosis are evident in the first stage and in the second stage signs of injury to organs may become evident, a single organ alone is (almost) never involved. Inhalation of high concentrations of gas/vapour causes lung irritation with coughing and nausea, central nervous depression with headache and dizziness, slowing of reflexes, fatigue and inco-ordination. Depression of the central nervous system is the most outstanding effect of most halogenated aliphatic hydrocarbons. Inebriation and excitation, passing into narcosis, is a typical reaction. In severe acute exposures there is always a danger of death from respiratory failure or cardiac arrest due to a tendency to make the heart more susceptible to catecholamines (adrenalin) Material is highly volatile and may quickly form a concentrated atmosphere in confined or unventilated areas. The vapour may displace and replace air in breathing zone, acting as a simple asphyxiant. This may happen with little warning of overexposure. Symptoms of asphyxia (suffocation) may include headache, dizziness, shortness of breath, muscular weakness, drowsiness and ringing in the ears. If the asphyxia is allowed to progress, there may be nausea and vomiting, further physical weakness and unconsciousness and, finally, convulsions, coma and death. WARNING: Intentional misuse by concentrating/inhaling contents may be lethal. Exposure to high levels of tetrachloroethylene by oral or inhalation may cause dose dependent light-headedness, mood and behavioural changes, seizure, unconsciousness, abnormal bilirubin level, liver and kidney damage in workers. Sudden death
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	may result from anaesthetic doses probably due to depression of the respiratory centre or heart dysfunction. Human studies showed dose dependent neurologic symptoms. It may cause irritation of the eyes, airways and skin. Anaesthetics and narcotic effects (with dulling of senses and odour fatigue) are a consequence of exposure to chlorinated solvents. Individual response varies widely; odour may not be considered objectionable at levels which quickly induce central nervous system effects. High vapour concentrations may give a feeling of euphoria. This may result in reduced responses, followed by rapid onset of unconsciousness, possible respiratory arrest and death.
Ingestion	Accidental ingestion of the material may be damaging to the health of the individual. Not normally a hazard due to physical form of product. Considered an unlikely route of entry in commercial/industrial environments When tetrachloroethylene is used in the treatment of hookworm (4.5 to 6.5 gm orally) the only adverse effect is a drunken-like state. Transient liver toxicity in patients given single oral doses of up to 5 ml had been recorded. At sufficiently high doses the material may be hepatotoxic (i.e. poisonous to the liver). At sufficiently high doses the material may be nephrotoxic (i.e. poisonous to the kidney).
Skin Contact	The material may cause severe inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterised by redness, swelling and blistering. Repeated exposure may cause skin cracking, flaking or drying following normal handling and use. Skin contact with the material may damage the health of the individual; systemic effects may result following absorption. Spray mist may produce discomfort Open cuts, abraded or irritated skin should not be exposed to this material Industrial experience shows that exposure to tetrachloroethylene produces localised skin irritation while prolonged skin contact can cause chemical burns and blistering. Absorption by skin may readily exceed vapour inhalation exposure. Symptoms for skin absorption are the same as for inhalation.
Eye	This material may produce eye irritation in some persons and produce eye damage 24 hours or more after instillation. Moderate inflammation may be expected with redness; conjunctivitis may occur with prolonged exposure. Not considered to be a risk because of the extreme volatility of the gas. Irritation of the eyes may produce a heavy secretion of tears (lachrymation). Exposure to high concentrations of tetrachloroethylene vapour causes mild to severe eye irritation, burning or stinging sensations depending on the dose and duration of exposure. Colour vision has equally been reported which is attributed to neurological rather than a direct effect on the eyes.
Chronic	Strong evidence exists that this substance may cause irreversible mutations (though not lethal) even following a single exposure. There is ample evidence that this material can be regarded as being able to cause cancer in humans based on experiments and other information. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. There is some evidence from animal testing that exposure to this material may result in reduced fertility. There is some evidence from animal testing that exposure to this material may result in toxic effects to the unborn baby. The reactivity of an epoxide intermediate may be the reason for the cancer-causing properties of halogenated oxiranes. It is reported that 1,1-dichloroethyne, vinyl chloride, trichloroethylene, tetrachloroethylene and chloroprene all cause cancer. Generally speaking, substances with one halogen substitution show higher potential to cause cancer compared to substances with two. Main route of exposure to the gas in the workplace is by inhalation. Exposure to tetrachloroethylene noted in dry cleaners causes menstrual disorder and miscarriage, liver dysfunction, headache and dizziness. Studies done showed high mortality rate resulting from cancers of the lung, cervix, gullet, kidney, skin, lymph/blood system, and colon in dry cleaners and laundry workers. Liver cancer was detected in females but none in male laundry and dry cleaners. However, there is not sufficient statistical data to make an absolute conclusion.

CRC (NZ) 2018 Lectra Clean (Aerosol)	TOXICITY	IRRITATION
	Not Available	Not Available
trichloroethylene	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >20000 mg/kg ^[2]	Eye(rabbit): 20 mg/24h - SEVERE
	Inhalation (Rat) LC50: 35.175 mg/L4h ^[2]	Skin(rabbit): 500 mg/24h - SEVERE
	Oral (Rat) LD50: 5650 mg/kg ^[2]	
tetrachloroethylene	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >10000 mg/kg ^[1]	Eye (rabbit): 162 mg -mild
	Inhalation(Mouse) LC50; 35 mg/l4h ^[2]	Eye: adverse effect observed (irritating) ^[1]
	Oral (Rat) LD50: 2629 mg/kg ^[2]	Skin (rabbit): 810 mg/24h -SEVERE
		Skin: adverse effect observed (irritating) ^[1]
		Skin: no adverse effect observed (not irritating) ^[1]
carbon dioxide	TOXICITY	IRRITATION
	Not Available	Not Available
Legend:	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

TRICHLOROETHYLENE	WARNING: This substance has been classified by the IARC as Group 1: CARCINOGENIC TO HUMANS. Tenth Annual Report on Carcinogens: Substance known to be Carcinogenic [National Toxicology Program: U.S. Dep. of Health and Human Services 2002]
TETRACHLOROETHYLENE	The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. WARNING: This substance has been classified by the IARC as Group 2A: Probably Carcinogenic to Humans.
CRC (NZ) 2018 Lectra Clean (Aerosol) & TRICHLOROETHYLENE	The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. Overexposure to trichloroethylene fumes causes liver damage, irregular heartbeat, brain depression and death. Deaths due to this substances have been reported in the workplace, often in degreasing operations, and have been attributed mostly to irregularities in heart rhythm or depression of the central nervous system. Repeated oral intake produces appetite loss, nausea and vomiting. A rare disease of the small intestine, seen in Japanese lens cleaners and polishers were attributed to exposure in the workplace.
CRC (NZ) 2018 Lectra Clean (Aerosol) & TRICHLOROETHYLENE & TETRACHLOROETHYLENE	The material may cause severe skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. Repeated exposures may produce severe ulceration.
TRICHLOROETHYLENE & TETRACHLOROETHYLENE	Disinfection byproducts (DBPs) are formed when disinfectants such as chlorine, chloramines and ozone react with organic and inorganic matter in water. Animal studies have shown that some DBPs cause cancer. To date, several hundred DBPs have been identified. Numerous haloalkanes and haloalkenes have been tested for cancer-causing and mutation-causing activities. In general, the potential to cause genetic toxicity is dependent on the nature, number and position of halogen(s) and the size of the molecule.

Acute Toxicity	✓	Carcinogenicity	✓
Skin Irritation/Corrosion	✓	Reproductivity	✗
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	✓
Respiratory or Skin sensitisation	✗	STOT - Repeated Exposure	✓
Mutagenicity	✓	Aspiration Hazard	✗

Legend: ✗ – Data either not available or does not fill the criteria for classification
✓ – Data available to make classification

SECTION 12 Ecological information

Toxicity

CRC (NZ) 2018 Lectra Clean (Aerosol)	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
trichloroethylene	Endpoint	Test Duration (hr)	Species	Value	Source
	ErC50	72h	Algae or other aquatic plants	>160mg/l	1
	NOEC(ECx)	240h	Crustacea	0.001mg/L	4
	BCF	1008h	Fish	4-16	7
	EC50	72h	Algae or other aquatic plants	35.1-38.2mg/l	4
	EC50	96h	Algae or other aquatic plants	79-143mg/L	4
	EC50	48h	Crustacea	2.2mg/l	1
	LC50	96h	Fish	3.1mg/L	4
tetrachloroethylene	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96h	Fish	>3<6mg/l	4
	BCF	1344h	Fish	25.8-77.1	7
	EC50	72h	Algae or other aquatic plants	~0.2mg/L	4
	EC50	48h	Crustacea	22mg/l	1
	EC50(ECx)	24h	Crustacea	3.2mg/l	1
	EC50	96h	Algae or other aquatic plants	500mg/l	1
carbon dioxide	Endpoint	Test Duration (hr)	Species	Value	Source

	LC50	96h	Fish	35mg/l	1
Legend:	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data				

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.

Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

For carbon dioxide:

Environmental Fate: Carbon dioxide in earth's atmosphere is considered a trace gas. There are seasonal fluctuations of atmospheric concentrations of carbon dioxide primarily due to CO2 absorbed during seasonal plant growth. Due to human activities such as the combustion of fossil fuels and deforestation, the concentration of atmospheric carbon dioxide has increased by about 35% since preindustrial times. Carbon dissolved in the oceans is about 50 times greater than CO2 found in the atmosphere.

Substances containing unsaturated carbons are ubiquitous in indoor environments. They result from many sources (see below). Most are reactive with environmental ozone and many produce stable products which are thought to adversely affect human health. The potential for surfaces in an enclosed space to facilitate reactions should be considered.

Source of unsaturated substances Unsaturated substances (Reactive Emissions) Major Stable Products produced following reaction with ozone.

For Haloalkanes:

Atmospheric Fate: Fully, or partially, fluorinated haloalkanes released to the air can restrict heat loss from the Earth's atmosphere by absorbing infrared emissions from the surface. The major fate of haloalkanes in the atmosphere is via breakdown by hydroxyl radicals. These substances react with atmospheric ozone and nitrates, which also causes them to change, (transform). Chlorofluorocarbons, (CFC), haloalkanes can break down into chlorine atoms in the air, which also contribute to ozone destruction.

For Tetrachloroethylene (Synonym: Perchloroethylene): log Koc: 2.38 - 2.9. 7; Koc: 209 – 1685; Half-life (hr) H2O surface water: 26.4-2664; Henry's atm m3 /mol: 1.49E-02; BOD 5: 0.06; COD: 0.39; BCF: 38.9-226; Log BCF: 1.59.

Atmospheric Fate: Long-range global transport of tetrachloroethylene is likely. Dry deposition does not appear to be a significant removal process, although substantial evaporation from dry surfaces can be predicted.

For Trichloroethylene:

log Kow: 2.2-3.3; log Koc: 2; log Koc: 2;

Henry's atm m3/mol: 0.0103;

BCF: 17-1160.

Drinking Water Standards: Trichloroethylene: 30 mg/l (UK max.); 70 mg/L. (WHO provisional guideline); Hydrocarbon total: 10 ug/l (UK max.); Soil Guidelines - Dutch Criteria: 0.001 mg/kg (target), 60 mg/kg (intervention); Air Quality Standards: 1 mg/m3, averaging time 24 hours (WHO Guideline).

Atmospheric Fate: Trichloroethylene reacts quickly in air, especially under smog conditions, with an atmospheric residence time of up to 5 days.

DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
trichloroethylene	HIGH (Half-life = 1653 days)	LOW (Half-life = 11.33 days)
tetrachloroethylene	HIGH (Half-life = 720 days)	MEDIUM (Half-life = 160.13 days)
carbon dioxide	LOW	LOW

Bioaccumulative potential

Ingredient	Bioaccumulation
trichloroethylene	HIGH (BCF = 5370)
tetrachloroethylene	LOW (BCF = 77.1)
carbon dioxide	LOW (LogKOW = 0.83)

Mobility in soil

Ingredient	Mobility
trichloroethylene	LOW (Log KOC = 67.7)
tetrachloroethylene	LOW (Log KOC = 106.8)
carbon dioxide	HIGH (Log KOC = 1.498)

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	▶ DO NOT allow wash water from cleaning or process equipment to enter drains. ▶ It may be necessary to collect all wash water for treatment before disposal. ▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▶ Where in doubt contact the responsible authority. ▶ Consult State Land Waste Management Authority for disposal. ▶ Discharge contents of damaged aerosol cans at an approved site. ▶ Allow small quantities to evaporate.
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► **DO NOT** incinerate or puncture aerosol cans.

Ensure that the hazardous substance is disposed in accordance with the Hazardous Substances (Disposal) Notice 2017

Disposal Requirements

Packages that have been in direct contact with the hazardous substance must be only disposed if the hazardous substance was appropriately removed and cleaned out from the package. The package must be disposed according to the manufacturer's directions taking into account the material it is made of. Packages which hazardous content have been appropriately treated and removed may be recycled.

The hazardous substance must only be disposed if it has been treated by a method that changed the characteristics or composition of the substance and it is no longer hazardous.

SECTION 14 Transport information

Labels Required

	
Marine Pollutant	
HAZCHEM	Not Applicable

Land transport (UN)

14.1. UN number or ID number	1950	
14.2. UN proper shipping name	AEROSOLS	
14.3. Transport hazard class(es)	Class	2.2
	Subsidiary Hazard	Not Applicable
14.4. Packing group	Not Applicable	
14.5. Environmental hazard	Environmentally hazardous	
14.6. Special precautions for user	Special provisions	63; 190; 277; 327; 344; 381
	Limited quantity	1000ml

Air transport (ICAO-IATA / DGR)

14.1. UN number	1950	
14.2. UN proper shipping name	Aerosols, non-flammable	
14.3. Transport hazard class(es)	ICAO/IATA Class	2.2
	ICAO / IATA Subsidiary Hazard	Not Applicable
	ERG Code	2L
14.4. Packing group	Not Applicable	
14.5. Environmental hazard	Environmentally hazardous	
14.6. Special precautions for user	Special provisions	A98 A145 A167 A802
	Cargo Only Packing Instructions	203
	Cargo Only Maximum Qty / Pack	150 kg
	Passenger and Cargo Packing Instructions	203
	Passenger and Cargo Maximum Qty / Pack	75 kg
	Passenger and Cargo Limited Quantity Packing Instructions	Y203
	Passenger and Cargo Limited Maximum Qty / Pack	30 kg G

Sea transport (IMDG-Code / GGVSee)

14.1. UN number	1950		
14.2. UN proper shipping name	AEROSOLS		
14.3. Transport hazard class(es)	IMDG Class	2.2	
	IMDG Subsidiary Hazard	Not Applicable	
14.4. Packing group	Not Applicable		
14.5 Environmental hazard	Marine Pollutant		
14.6. Special precautions for user	EMS Number	F-D , S-U	
	Special provisions	63 190 277 327 344 381 959	
	Limited Quantities	1000 ml	

14.7.1. Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

14.7.2. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
trichloroethylene	Not Available
tetrachloroethylene	Not Available
carbon dioxide	Not Available

14.7.3. Transport in bulk in accordance with the IGC Code

Product name	Ship Type
trichloroethylene	Not Available
tetrachloroethylene	Not Available
carbon dioxide	Not Available

SECTION 15 Regulatory information

Safety, health and environmental regulations / legislation specific for the substance or mixture

This substance is to be managed using the conditions specified in an applicable Group Standard

HSR Number	Group Standard
HSR002679	Surface Coatings and Colourants Carcinogenic Group Standard 2020
HSR002560	Dental Products Carcinogenic Group Standard 2020
HSR002520	Aerosols (Toxic [6.7]) Group Standard 2017

Please refer to Section 8 of the SDS for any applicable tolerable exposure limit or Section 12 for environmental exposure limit.

trichloroethylene is found on the following regulatory lists

- Chemical Footprint Project - Chemicals of High Concern List
- International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
- International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 1: Carcinogenic to humans
- New Zealand Approved Hazardous Substances with controls
- New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals
- New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data
- New Zealand Inventory of Chemicals (NZIoC)
- New Zealand Workplace Exposure Standards (WES)

tetrachloroethylene is found on the following regulatory lists

- Chemical Footprint Project - Chemicals of High Concern List
- International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
- International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2A: Probably carcinogenic to humans
- New Zealand Approved Hazardous Substances with controls
- New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals
- New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data
- New Zealand Inventory of Chemicals (NZIoC)
- New Zealand Workplace Exposure Standards (WES)

carbon dioxide is found on the following regulatory lists

- FEI Equine Prohibited Substances List - Controlled Medication

Additional Regulatory Information

Not Applicable

Hazardous Substance Location

Subject to the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Hazard Class	Quantities
Not Applicable	Not Applicable

Certified Handler

Subject to Part 4 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Class of substance	Quantities
Not Applicable	Not Applicable

Refer Group Standards for further information

Maximum quantities of certain hazardous substances permitted on passenger service vehicles

Subject to Regulation 13.14 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Hazard Class	Gas (aggregate water capacity in mL)	Liquid (L)	Solid (kg)	Maximum quantity per package for each classification
Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

Tracking Requirements

Not Applicable

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (trichloroethylene; tetrachloroethylene; carbon dioxide)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	Yes
Legend:	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

SECTION 16 Other information

Revision Date	10/03/2023
Initial Date	12/11/2001

SDS Version Summary

Version	Date of Update	Sections Updated
10.1	10/12/2021	Classification change due to full database hazard calculation/update.
11.1	10/03/2023	Classification change due to full database hazard calculation/update.

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

- PC_T TWA: Permissible Concentration-Time Weighted Average
- PC_T STEL: Permissible Concentration-Short Term Exposure Limit
- IARC: International Agency for Research on Cancer
- ACGIH: American Conference of Governmental Industrial Hygienists
- STEL: Short Term Exposure Limit
- TEEL: Temporary Emergency Exposure Limit
- IDLH: Immediately Dangerous to Life or Health Concentrations
- ES: Exposure Standard
- OSF: Odour Safety Factor
- NOAEL: No Observed Adverse Effect Level
- LOAEL: Lowest Observed Adverse Effect Level
- TLV: Threshold Limit Value
- LOD: Limit Of Detection
- OTV: Odour Threshold Value
- BCF: BioConcentration Factors
- BEI: Biological Exposure Index
- DNEL: Derived No-Effect Level
- PNEC: Predicted no-effect concentration

- AIIC: Australian Inventory of Industrial Chemicals
- DSL: Domestic Substances List
- NDSL: Non-Domestic Substances List
- IECSC: Inventory of Existing Chemical Substance in China
- EINECS: European Inventory of Existing Commercial chemical Substances
- ELINCS: European List of Notified Chemical Substances
- NLP: No-Longer Polymers
- ENCS: Existing and New Chemical Substances Inventory
- KECI: Korea Existing Chemicals Inventory
- NZIoC: New Zealand Inventory of Chemicals
- PICCS: Philippine Inventory of Chemicals and Chemical Substances
- TSCA: Toxic Substances Control Act
- TCSI: Taiwan Chemical Substance Inventory
- INSQ: Inventario Nacional de Sustancias Químicas
- NCI: National Chemical Inventory
- FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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TEL (+61 3) 9572 4700.



Safety Data Sheet according to (EC) No 1907/2006 as amended

Page 1 of 22

LOCTITE 660

SDS No.: 164196

V009.0

Revision: 07.12.2021

printing date: 23.02.2022

Replaces version from: 17.07.2018

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

LOCTITE 660

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use:

Anaerobic Adhesive

1.3. Details of the supplier of the safety data sheet

Henkel Ltd

Adhesives

Wood Lane End

HP2 4RQ Hemel Hempstead

Great Britain

Phone: +44 (1442) 278000

Fax-no.: +44 (1442) 278071

ua-productsafety.uk@henkel.com

For Safety Data Sheet updates please visit our website <https://mysds.henkel.com/index.html#/appSelection> or www.henkel-adhesives.com.

1.4. Emergency telephone number

24 Hours Emergency Tel: +44 (0)1442 278497

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (CLP):

Serious eye irritation

Category 2

H319 Causes serious eye irritation.

Skin sensitizer

Category 1

H317 May cause an allergic skin reaction.

Specific target organ toxicity - single exposure

Category 3

H335 May cause respiratory irritation.

Target organ: respiratory tract irritation

Chronic hazards to the aquatic environment

Category 4

H413 May cause long lasting harmful effects to aquatic life.

2.2. Label elements

Label elements (CLP):

Hazard pictogram:**Contains**

Hydroxypropyl methacrylate

Cumene hydroperoxide
maleic acid

Acetic acid, 2-phenylhydrazide

Signal word:

Warning

Hazard statement:

H317 May cause an allergic skin reaction.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

H413 May cause long lasting harmful effects to aquatic life.

Precautionary statement:

**** For consumer use only: P101 If medical advice is needed, have product container or label at hand. P102 Keep out of reach of children. P501 Dispose of contents/container in accordance with national regulation.***

**Precautionary statement:
Prevention**

P261 Avoid breathing vapors.

P273 Avoid release to the environment.

P280 Wear protective gloves.

**Precautionary statement:
Response**

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P337+P313 If eye irritation persists: Get medical advice/attention.

2.3. Other hazards

None if used properly.

Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.

SECTION 3: Composition/information on ingredients

3.2. Mixtures**General chemical description:**

Anaerobic Sealant

Declaration of the ingredients according to CLP (EC) No 1272/2008:

Hazardous components CAS-No.	EC Number REACH-Reg No.	content	Classification
Ethoxylated bisphenol A dimethacrylate esters 41637-38-1	609-946-4 01-2119980659-17	25- 50 %	Aquatic Chronic 4 H413
Hydroxypropyl methacrylate 27813-02-1	248-666-3 01-2119490226-37	25- 50 %	Skin Sens. 1 H317 Eye Irrit. 2 H319
Cumene hydroperoxide 80-15-9	201-254-7 01-2119475796-19	0,25- < 2,5 %	STOT RE 2 H373 Skin Corr. 1B H314 Acute Tox. 2; Inhalation H330 Aquatic Chronic 2 H411 Acute Tox. 4; Oral H302 Acute Tox. 4; Dermal H312 Org. Perox. E H242 STOT SE 3 H335
maleic acid 110-16-7	203-742-5 01-2119488705-25	0,1- < 1 %	Acute Tox. 4; Oral H302 Eye Irrit. 2 H319 STOT SE 3 H335 Skin Irrit. 2 H315 Skin Sens. 1 H317 Acute Tox. 4; Dermal H312
methacrylic acid 79-41-4	201-204-4 01-2119463884-26	0,1- < 1 %	Acute Tox. 4; Oral H302 Acute Tox. 3; Dermal H311 Acute Tox. 4; Inhalation H332 Skin Corr. 1A H314 Eye Dam. 1 H318 STOT SE 3 H335
N,N-Diethyl-p-toluidine 613-48-9	210-345-0	0,1- < 1 %	Acute Tox. 3; Oral H301 Acute Tox. 3; Dermal H311 Acute Tox. 3; Inhalation H331 STOT RE 2 H373 Aquatic Chronic 3 H412
Acetic acid, 2-phenylhydrazide 114-83-0	204-055-3	0,1- < 1 %	Acute Tox. 3; Oral H301 Skin Irrit. 2 H315 Skin Sens. 1 H317 Eye Irrit. 2 H319 STOT SE 3; Inhalation H335 Carc. 2 H351
Titanium dioxide 13463-67-7	236-675-5 01-2119489379-17	0,1- < 1 %	Carc. 2; Inhalation H351
N,N-dimethyl-o-toluidine	210-199-8	0,1- < 1 %	Acute Tox. 3; Inhalation

609-72-3			H331 Acute Tox. 3; Dermal H311 Acute Tox. 3; Oral H301 STOT RE 2 H373 Aquatic Chronic 3 H412
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For full text of the H - statements and other abbreviations see section 16 "Other information".
Substances without classification may have community workplace exposure limits available.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

Move to fresh air. If symptoms persist, seek medical advice.

Skin contact:

Rinse with running water and soap.

Obtain medical attention if irritation persists.

Eye contact:

Rinse immediately with plenty of running water (for 10 minutes), seek medical attention from a specialist.

Ingestion:

Rinse mouth, drink 1-2 glasses of water, do not induce vomiting, consult a doctor.

4.2. Most important symptoms and effects, both acute and delayed

SKIN: Rash, Urticaria.

EYE: Irritation, conjunctivitis.

RESPIRATORY: Irritation, coughing, shortness of breath, chest tightness.

4.3. Indication of any immediate medical attention and special treatment needed

See section: Description of first aid measures

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:

water, carbon dioxide, foam, powder

Extinguishing media which must not be used for safety reasons:

High pressure waterjet

5.2. Special hazards arising from the substance or mixture

In the event of a fire, carbon monoxide (CO), carbon dioxide (CO₂) and nitrogen oxides (NO_x) can be released.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear.

Additional information:

In case of fire, keep containers cool with water spray.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid contact with skin and eyes.
Wear protective equipment.
Ensure adequate ventilation.
Keep away from sources of ignition.

6.2. Environmental precautions

Do not empty into drains / surface water / ground water.

6.3. Methods and material for containment and cleaning up

Dispose of contaminated material as waste according to Section 13.
For small spills wipe up with paper towel and place in container for disposal.
For large spills absorb onto inert absorbent material and place in sealed container for disposal.

6.4. Reference to other sections

See advice in section 8

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

Avoid skin and eye contact.
See advice in section 8

Hygiene measures:

Wash hands before work breaks and after finishing work.
Do not eat, drink or smoke while working.
Good industrial hygiene practices should be observed.

7.2. Conditions for safe storage, including any incompatibilities

Refer to Technical Data Sheet

7.3. Specific end use(s)

Anaerobic Adhesive

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational Exposure Limits

Valid for
Great Britain

Ingredient [Regulated substance]	ppm	mg/m ³	Value type	Short term exposure limit category / Remarks	Regulatory list
Silicon dioxide 112945-52-5 [SILICA, AMORPHOUS, INHALABLE DUST]		6	Time Weighted Average (TWA):		EH40 WEL
Silicon dioxide 112945-52-5 [SILICA, AMORPHOUS, RESPIRABLE DUST]		2,4	Time Weighted Average (TWA):		EH40 WEL
Silicon dioxide 112945-52-5 [Dust, respirable dust]		4	Time Weighted Average (TWA):		EH40 WEL
Silicon dioxide 112945-52-5 [Dust, inhalable dust]		10	Time Weighted Average (TWA):		EH40 WEL
Methacrylic acid 79-41-4 [METHACRYLIC ACID]	20	72	Time Weighted Average (TWA):		EH40 WEL
Methacrylic acid 79-41-4 [METHACRYLIC ACID]	40	143	Short Term Exposure Limit (STEL):	15 minutes	EH40 WEL
Titanium dioxide 13463-67-7 [TITANIUM DIOXIDE, RESPIRABLE]		4	Time Weighted Average (TWA):		EH40 WEL
Titanium dioxide 13463-67-7 [TITANIUM DIOXIDE, TOTAL INHALABLE]		10	Time Weighted Average (TWA):		EH40 WEL

Occupational Exposure Limits

Valid for
Ireland

Ingredient [Regulated substance]	ppm	mg/m ³	Value type	Short term exposure limit category / Remarks	Regulatory list
Silicon dioxide 112945-52-5 [SILICA, AMORPHOUS]		6	Time Weighted Average (TWA):		IR_OEL
Silicon dioxide 112945-52-5 [SILICA, AMORPHOUS]		2,4	Time Weighted Average (TWA):		IR_OEL
Silicon dioxide 112945-52-5 [DUSTS NON-SPECIFIC]		10	Time Weighted Average (TWA):		IR_OEL
Silicon dioxide 112945-52-5 [DUSTS NON-SPECIFIC]		4	Time Weighted Average (TWA):		IR_OEL
Methacrylic acid 79-41-4 [METHACRYLIC ACID]	20	70	Time Weighted Average (TWA):		IR_OEL
Methacrylic acid 79-41-4 [METHACRYLIC ACID]	40	140	Short Term Exposure Limit (STEL):	15 minutes	IR_OEL
Titanium dioxide 13463-67-7 [TITANIUM DIOXIDE]		10	Time Weighted Average (TWA):		IR_OEL
Titanium dioxide 13463-67-7 [TITANIUM DIOXIDE]		4	Time Weighted Average (TWA):		IR_OEL

Predicted No-Effect Concentration (PNEC):

Name on list	Environmental Compartment	Exposure period	Value				Remarks
			mg/l	ppm	mg/kg	others	
Bisphenol A, 2-EO dimethacrylate 41637-38-1	aqua (freshwater)						no hazard identified
Bisphenol A, 2-EO dimethacrylate 41637-38-1	aqua (marine water)						no hazard identified
Bisphenol A, 2-EO dimethacrylate 41637-38-1	sewage treatment plant (STP)						no hazard identified
Bisphenol A, 2-EO dimethacrylate 41637-38-1	sediment (freshwater)						
Bisphenol A, 2-EO dimethacrylate 41637-38-1	sediment (marine water)						
Bisphenol A, 2-EO dimethacrylate 41637-38-1	Air						no hazard identified
Bisphenol A, 2-EO dimethacrylate 41637-38-1	soil						
Bisphenol A, 2-EO dimethacrylate 41637-38-1	Predator						
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	aqua (freshwater)		0,904 mg/l				
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	aqua (marine water)		0,904 mg/l				
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	sewage treatment plant (STP)		10 mg/l				
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	aqua (intermittent releases)		0,972 mg/l				
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	sediment (freshwater)				6,28 mg/kg		
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	sediment (marine water)				6,28 mg/kg		
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	Soil				0,727 mg/kg		
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	Marine water - intermittent		0,972 mg/l				
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	Air						no hazard identified
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	Predator						no potential for bioaccumulation
.alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9	aqua (freshwater)		0,0031 mg/l				
.alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9	aqua (marine water)		0,00031 mg/l				
.alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9	aqua (intermittent releases)		0,031 mg/l				
.alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9	Sewage treatment plant		0,35 mg/l				
.alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9	sediment (freshwater)				0,023 mg/kg		
.alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9	sediment (marine water)				0,0023 mg/kg		
.alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9	Soil				0,0029 mg/kg		
Maleic acid 110-16-7	aqua (freshwater)		0,1 mg/l				

Maleic acid 110-16-7	aqua (intermittent releases)		0,4281 mg/l				
Maleic acid 110-16-7	sediment (freshwater)				0,334 mg/kg		
Maleic acid 110-16-7	sewage treatment plant (STP)		44,6 mg/l				
Maleic acid 110-16-7	aqua (marine water)		0,01 mg/l				
Maleic acid 110-16-7	sediment (marine water)				0,0334 mg/kg		
Maleic acid 110-16-7	Soil				0,0415 mg/kg		
methacrylic acid 79-41-4	aqua (freshwater)		0,82 mg/l				
methacrylic acid 79-41-4	aqua (marine water)		0,82 mg/l				
methacrylic acid 79-41-4	sewage treatment plant (STP)		10 mg/l				
methacrylic acid 79-41-4	aqua (intermittent releases)		0,82 mg/l				
methacrylic acid 79-41-4	Soil				1,2 mg/kg		
Titanium dioxide 13463-67-7	aqua (freshwater)						no hazard identified
Titanium dioxide 13463-67-7	aqua (marine water)						no hazard identified
Titanium dioxide 13463-67-7	sewage treatment plant (STP)						no hazard identified
Titanium dioxide 13463-67-7	sediment (freshwater)						no hazard identified
Titanium dioxide 13463-67-7	sediment (marine water)						no hazard identified
Titanium dioxide 13463-67-7	Soil						no hazard identified
Titanium dioxide 13463-67-7	Aquatic (intermit. releases)						no hazard identified
Titanium dioxide 13463-67-7	Predator						no hazard identified

Derived No-Effect Level (DNEL):

Name on list	Application Area	Route of Exposure	Health Effect	Exposure Time	Value	Remarks
Bisphenol A, 2-EO dimethacrylate 41637-38-1	Workers	inhalation	Long term exposure - systemic effects		3,52 mg/m3	no hazard identified
Bisphenol A, 2-EO dimethacrylate 41637-38-1	Workers	dermal	Long term exposure - systemic effects		2 mg/kg	no hazard identified
Bisphenol A, 2-EO dimethacrylate 41637-38-1	General population	inhalation	Long term exposure - systemic effects		0,87 mg/m3	no hazard identified
Bisphenol A, 2-EO dimethacrylate 41637-38-1	General population	dermal	Long term exposure - systemic effects		1 mg/kg	no hazard identified
Bisphenol A, 2-EO dimethacrylate 41637-38-1	General population	oral	Long term exposure - systemic effects		0,5 mg/kg	no hazard identified
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	Workers	dermal	Long term exposure - systemic effects		4,2 mg/kg	no hazard identified
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	Workers	Inhalation	Long term exposure - systemic effects		14,7 mg/m3	no hazard identified
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	General population	dermal	Long term exposure - systemic effects		2,5 mg/kg	no hazard identified
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	General population	Inhalation	Long term exposure - systemic effects		8,8 mg/m3	no hazard identified
Methacrylic acid, monoester with propane-1,2-diol 27813-02-1	General population	oral	Long term exposure - systemic effects		2,5 mg/kg	no hazard identified
.alpha.,.alpha.-Dimethylbenzyl hydroperoxide 80-15-9	Workers	inhalation	Long term exposure - systemic effects		6 mg/m3	
Maleic acid 110-16-7	Workers	dermal	Acute/short term exposure - local effects		0,55 mg/cm2	
Maleic acid 110-16-7	Workers	dermal	Long term exposure - local effects		0,04 mg/cm2	
Maleic acid 110-16-7	Workers	dermal	Acute/short term exposure - systemic effects		58 mg/kg	
Maleic acid 110-16-7	Workers	dermal	Long term exposure - systemic effects		3,3 mg/kg	
Maleic acid 110-16-7	Workers	inhalation	Acute/short term exposure - local effects		3 mg/m3	
Maleic acid 110-16-7	Workers	inhalation	Long term exposure - systemic effects		3 mg/m3	
Maleic acid 110-16-7	Workers	inhalation	Long term exposure - local effects		3 mg/m3	
Maleic acid 110-16-7	Workers	inhalation	Acute/short term exposure - systemic effects		3 mg/m3	
methacrylicacid 79-41-4	Workers	Inhalation	Long term exposure - local effects		88 mg/m3	
methacrylicacid 79-41-4	Workers	Inhalation	Long term exposure - systemic effects		29,6 mg/m3	
methacrylicacid 79-41-4	Workers	dermal	Long term exposure - systemic effects		4,25 mg/kg	
methacrylicacid 79-41-4	General population	Inhalation	Long term exposure - local effects		6,55 mg/m3	
methacrylicacid 79-41-4	General population	Inhalation	Long term exposure -		6,3 mg/m3	

methacrylicacid 79-41-4	General population	dermal	systemic effects Long term exposure - systemic effects		2,55 mg/kg	
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Biological Exposure Indices:

None

8.2. Exposure controls:

Engineering controls:

Ensure good ventilation/extraction.

Respiratory protection:

Ensure adequate ventilation.

An approved mask or respirator fitted with an organic vapour cartridge should be worn if the product is used in a poorly ventilated area

Filter type: A (EN 14387)

Hand protection:

Chemical-resistant protective gloves (EN 374).

Suitable materials for short-term contact or splashes (recommended: at least protection index 2, corresponding to > 30 minutes permeation time as per EN 374):

nitrile rubber (NBR; ≥ 0.4 mm thickness)

Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374):

nitrile rubber (NBR; ≥ 0.4 mm thickness)

This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced.

Eye protection:

Safety glasses with sideshields or chemical safety goggles should be worn if there is a risk of splashing.

Protective eye equipment should conform to EN166.

Skin protection:

Wear suitable protective clothing.

Protective clothing should conform to EN 14605 for liquid splashes or to EN 13982 for dusts.

Advices to personal protection equipment:

The information provided on personal protective equipment is for guidance purposes only. A full risk assessment should be conducted prior to using this product to determine the appropriate personal protective equipment to suit local conditions.

Personal protective equipment should conform to the relevant EN standard.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance

paste

Odor

grey

characteristic

Odour threshold

No data available / Not applicable

pH

No data available / Not applicable

Melting point

No data available / Not applicable

Solidification temperature

No data available / Not applicable

Initial boiling point

> 149 °C (> 300.2 °F)

Flash point

> 93 °C (> 199.4 °F); Tagliabue closed cup

Evaporation rate

No data available / Not applicable

Flammability

No data available / Not applicable

Explosive limits

No data available / Not applicable

Vapour pressure (26 °C (78.8 °F))	< 7 mbar
Vapour pressure (50 °C (122 °F))	< 300 mbar
Relative vapour density:	No data available / Not applicable
Density ()	1,098 g/cm ³
Bulk density	No data available / Not applicable
Solubility	No data available / Not applicable
Solubility (qualitative) (Solvent: Water)	Slight
Partition coefficient: n-octanol/water	No data available / Not applicable
Auto-ignition temperature	No data available / Not applicable
Decomposition temperature	No data available / Not applicable
Viscosity	No data available / Not applicable
Viscosity (kinematic)	No data available / Not applicable
Explosive properties	No data available / Not applicable
Oxidising properties	No data available / Not applicable

9.2. Other information

No data available / Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity

Reacts with strong oxidants.

Acids.

Reducing agents.

Strong bases.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

See section reactivity

10.4. Conditions to avoid

Stable under normal conditions of storage and use.

10.5. Incompatible materials

See section reactivity.

10.6. Hazardous decomposition products

carbon oxides.

Hydrocarbons

nitrogen oxides

Rapid polymerisation may generate excessive heat and pressure.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Species	Method
Ethoxylated bisphenol A dimethacrylate esters 41637-38-1	LD50	> 2.000 mg/kg	rat	OECD Guideline 423 (Acute Oral toxicity)
Hydroxypropyl methacrylate 27813-02-1	LD50	> 2.000 mg/kg	rat	OECD Guideline 401 (Acute Oral Toxicity)
Cumene hydroperoxide 80-15-9	LD50	382 mg/kg	rat	other guideline:
maleic acid 110-16-7	LD50	708 mg/kg	rat	not specified
methacrylic acid 79-41-4	LD50	1.320 mg/kg	rat	equivalent or similar to OECD Guideline 401 (Acute Oral Toxicity)
Acetic acid, 2- phenylhydrazide 114-83-0	LD50	270 mg/kg	rat	not specified
Titanium dioxide 13463-67-7	LD50	> 5.000 mg/kg	rat	OECD Guideline 425 (Acute Oral Toxicity: Up-and-Down Procedure)

Acute dermal toxicity:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Species	Method
Ethoxylated bisphenol A dimethacrylate esters 41637-38-1	LD50	> 2.000 mg/kg	rat	OECD Guideline 402 (Acute Dermal Toxicity)
Hydroxypropyl methacrylate 27813-02-1	LD50	> 5.000 mg/kg	rabbit	not specified
Cumene hydroperoxide 80-15-9	Acute toxicity estimate (ATE)	1.100 mg/kg		Expert judgement
maleic acid 110-16-7	LD50	1.560 mg/kg	rabbit	not specified
methacrylic acid 79-41-4	LD50	500 - 1.000 mg/kg	rabbit	Dermal Toxicity Screening
methacrylic acid 79-41-4	Acute toxicity estimate (ATE)	500 mg/kg		Expert judgement
Titanium dioxide 13463-67-7	LD50	≥ 10.000 mg/kg	hamster	not specified

Acute inhalative toxicity:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Test atmosphere	Exposure time	Species	Method
Cumene hydroperoxide 80-15-9	LC50	1,370 mg/l	vapour	4 h	rat	not specified
methacrylic acid 79-41-4	LC50	> 3,6 mg/l	dust/mist	4 h	rat	OECD Guideline 403 (Acute Inhalation Toxicity)
methacrylic acid 79-41-4	Acute toxicity estimate (ATE)	3,61 mg/l				Expert judgement
Titanium dioxide 13463-67-7	LC50	> 6,82 mg/l	dust	4 h	rat	not specified

Skin corrosion/irritation:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Exposure time	Species	Method
Ethoxylated bisphenol A dimethacrylate esters 41637-38-1	not irritating	15 min	Human, EpiSkin™ (SM), Reconstructed Human Epidermis (RHE)	OECD Guideline 439 (In Vitro Skin Irritation: Reconstructed Human Epidermis (RHE) Test Method)
Hydroxypropyl methacrylate 27813-02-1	not irritating	24 h	rabbit	Draize Test
Cumene hydroperoxide 80-15-9	corrosive		rabbit	Draize Test
maleic acid 110-16-7	irritating	24 h	human	Patch Test
methacrylic acid 79-41-4	corrosive	3 min	rabbit	OECD Guideline 404 (Acute Dermal Irritation / Corrosion)
Titanium dioxide 13463-67-7	not irritating	4 h	rabbit	equivalent or similar to OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

Serious eye damage/irritation:

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Exposure time	Species	Method
Ethoxylated bisphenol A dimethacrylate esters 41637-38-1	not irritating		Bovine, cornea, in vitro test	OECD Guideline 437 (BCOP)
Hydroxypropyl methacrylate 27813-02-1	Category 2B (mildly irritating to eyes)		rabbit	Draize Test
maleic acid 110-16-7	highly irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)
methacrylic acid 79-41-4	corrosive		rabbit	Draize Test
Titanium dioxide 13463-67-7	not irritating		rabbit	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

Respiratory or skin sensitization:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Test type	Species	Method
Ethoxylated bisphenol A dimethacrylate esters 41637-38-1	not sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
Hydroxypropyl methacrylate 27813-02-1	not sensitising	Mouse local lymphnode assay (LLNA)	mouse	equivalent or similar to OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
Hydroxypropyl methacrylate 27813-02-1	sensitising	Guinea pig maximisation test	guinea pig	not specified
maleic acid 110-16-7	sensitising	Mouse local lymphnode assay (LLNA)	mouse	OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)
maleic acid 110-16-7	sensitising	Mouse local lymphnode assay (LLNA)	guinea pig	OECD Guideline 406 (Skin Sensitisation)
methacrylic acid 79-41-4	not sensitising	Buehler test	guinea pig	equivalent or similar to OECD Guideline 406 (Skin Sensitisation)
Titanium dioxide 13463-67-7	not sensitising	Mouse local lymphnode assay (LLNA)	mouse	equivalent or similar to OECD Guideline 429 (Skin Sensitisation: Local Lymph Node Assay)

Germ cell mutagenicity:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result	Type of study / Route of administration	Metabolic activation / Exposure time	Species	Method
Ethoxylated bisphenol A dimethacrylate esters 41637-38-1	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Ethoxylated bisphenol A dimethacrylate esters 41637-38-1	negative	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
Ethoxylated bisphenol A dimethacrylate esters 41637-38-1	negative	in vitro mammalian cell micronucleus test	with and without		OECD Guideline 487 (In vitro Mammalian Cell Micronucleus Test)
Hydroxypropyl methacrylate 27813-02-1	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Hydroxypropyl methacrylate 27813-02-1	positive	in vitro mammalian chromosome aberration test	with and without		Chromosome Aberration Test
Hydroxypropyl methacrylate 27813-02-1	negative	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
Cumene hydroperoxide 80-15-9	positive	bacterial reverse mutation assay (e.g Ames test)	without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
maleic acid 110-16-7	negative	bacterial reverse mutation assay (e.g Ames test)	no data		Ames Test
maleic acid 110-16-7	negative	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)
methacrylic acid 79-41-4	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		equivalent or similar to OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Titanium dioxide 13463-67-7	negative	bacterial reverse mutation assay (e.g Ames test)	with and without		OECD Guideline 471 (Bacterial Reverse Mutation Assay)
Titanium dioxide 13463-67-7	negative	in vitro mammalian chromosome aberration test	with and without		OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)
Titanium dioxide 13463-67-7	negative	mammalian cell gene mutation assay	with and without		OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)

Carcinogenicity

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous components CAS-No.	Result	Route of application	Exposure time / Frequency of treatment	Species	Sex	Method
Hydroxypropyl methacrylate 27813-02-1	not carcinogenic	inhalation	2 y 6 h/d, 5 d/w	rat	male	equivalent or similar OECD Guideline 451 (Carcinogenicity Studies)
maleic acid 110-16-7	not carcinogenic	oral: feed	2 y daily	rat	male/female	OECD Guideline 451 (Carcinogenicity Studies)
methacrylic acid 79-41-4	not carcinogenic	inhalation	2 y	mouse	male/female	OECD Guideline 451 (Carcinogenicity Studies)
Titanium dioxide 13463-67-7	not carcinogenic	inhalation	24 m 6 h/d; 5 d/w	rat	male/female	OECD Guideline 453 (Combined Chronic Toxicity/ Carcinogenicity Studies)

Reproductive toxicity:

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result / Value	Test type	Route of application	Species	Method
Ethoxylated bisphenol A dimethacrylate esters 41637-38-1	NOAEL P 1.000 mg/kg NOAEL F1 1.000 mg/kg	screening	oral: gavage	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction/ Developmental Toxicity Screening Test)
Hydroxypropyl methacrylate 27813-02-1	NOAEL P 300 mg/kg NOAEL F1 1.000 mg/kg	screening	oral: gavage	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction/ Developmental Toxicity Screening Test)
Hydroxypropyl methacrylate 27813-02-1	NOAEL P 400 mg/kg NOAEL F1 400 mg/kg	two- generation study	oral: gavage	rat	OECD Guideline 416 (Two- Generation Reproduction Toxicity Study)
maleic acid 110-16-7	NOAEL F1 150 mg/kg NOAEL F2 55 mg/kg	Two generation study	oral: gavage	rat	OECD Guideline 416 (Two- Generation Reproduction Toxicity Study)
methacrylic acid 79-41-4	NOAEL P 50 mg/kg NOAEL F1 400 mg/kg NOAEL F2 400 mg/kg	Two generation study	oral: gavage	rat	OECD Guideline 416 (Two- Generation Reproduction Toxicity Study)
Titanium dioxide 13463-67-7	NOAEL P > 1.000 mg/kg NOAEL F1 > 1.000 mg/kg		oral: gavage	rat	OECD Guideline 421 (Reproduction / Developmental Toxicity Screening Test)

STOT-single exposure:

No data available.

STOT-repeated exposure::

The mixture is classified based on threshold limits referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Result / Value	Route of application	Exposure time / Frequency of treatment	Species	Method
Ethoxylated bisphenol A dimethacrylate esters 41637-38-1	NOAEL 1.000 mg/kg	oral: gavage	13 weeks daily	rat	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
Hydroxypropyl methacrylate 27813-02-1	NOAEL 300 mg/kg	oral: gavage	49 d daily	rat	OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
Hydroxypropyl methacrylate 27813-02-1	NOAEL 0,352 mg/l	inhalation	90 d 6 h/d, 5 d/w	rat	OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day)
Cumene hydroperoxide 80-15-9		inhalation: aerosol	6 h/d 5 d/w	rat	not specified
maleic acid 110-16-7	NOAEL $\geq$ 40 mg/kg	oral: feed	90 d daily	rat	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
methacrylic acid 79-41-4		inhalation	90 d 6 h/d, 5 d/w	rat	OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day)
Titanium dioxide 13463-67-7	NOAEL 1.000 mg/kg	oral: gavage	90 d daily	rat	OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)

Aspiration hazard:

No data available.

SECTION 12: Ecological information

General ecological information:

Do not empty into drains / surface water / ground water.

12.1. Toxicity

Toxicity (Fish):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Ethoxylated bisphenol A dimethacrylate esters 41637-38-1	LL50	Toxicity > Water solubility	96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)
Hydroxypropyl methacrylate 27813-02-1	LC50	493 mg/l	48 h	Leuciscus idus melanotus	DIN 38412-15
Cumene hydroperoxide 80-15-9	LC50	3,9 mg/l	96 h	Oncorhynchus mykiss	OECD Guideline 203 (Fish, Acute Toxicity Test)
maleic acid 110-16-7	LC50	> 245 mg/l	48 h	Leuciscus idus	DIN 38412-15
methacrylic acid 79-41-4	LC50	85 mg/l	96 h	Salmo gairdneri (new name: Oncorhynchus mykiss)	EPA OTS 797.1400 (Fish Acute Toxicity Test)
Titanium dioxide 13463-67-7	LC50	Toxicity > Water solubility	48 h	Leuciscus idus	OECD Guideline 203 (Fish, Acute Toxicity Test)
N,N-dimethyl-o-toluidine 609-72-3	LC 50	46 mg/l	96 h	Fathead minnow (Pimephales promelas)	

Toxicity (Daphnia):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Ethoxylated bisphenol A dimethacrylate esters 41637-38-1	EL50	Toxicity > Water solubility	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Hydroxypropyl methacrylate 27813-02-1	EC50	> 143 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Cumene hydroperoxide 80-15-9	EC50	18,84 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
maleic acid 110-16-7	EC50	42,81 mg/l	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
methacrylic acid 79-41-4	EC50	> 130 mg/l	48 h	Daphnia magna	EPA OTS 797.1300 (Aquatic Invertebrate Acute Toxicity Test, Freshwater Daphnids)
Titanium dioxide 13463-67-7	EC50	Toxicity > Water solubility	48 h	Daphnia magna	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)

Chronic toxicity to aquatic invertebrates

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Ethoxylated bisphenol A dimethacrylate esters 41637-38-1	NOEC	Toxicity > Water solubility	48 day	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
Hydroxypropyl methacrylate 27813-02-1	NOEC	45,2 mg/l	21 d	Daphnia magna	OECD 211 (Daphnia magna, Reproduction Test)
maleic acid 110-16-7	NOEC	10 mg/l	21 d	Daphnia magna	other guideline:

Toxicity (Algae):

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Ethoxylated bisphenol A dimethacrylate esters 41637-38-1	EL50	Toxicity > Water solubility	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Ethoxylated bisphenol A dimethacrylate esters 41637-38-1	EL10	Toxicity > Water solubility	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Hydroxypropyl methacrylate 27813-02-1	EC50	> 97,2 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Hydroxypropyl methacrylate 27813-02-1	NOEC	> 97,2 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
Cumene hydroperoxide 80-15-9	EC50	3,1 mg/l	72 h	Desmodesmus subspicatus (reported as Scenedesmus subspicatus)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Cumene hydroperoxide 80-15-9	NOEC	1 mg/l	72 h	Desmodesmus subspicatus (reported as Scenedesmus subspicatus)	OECD Guideline 201 (Alga, Growth Inhibition Test)
maleic acid 110-16-7	EC50	74,35 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
maleic acid 110-16-7	EC10	11,8 mg/l	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)
methacrylic acid 79-41-4	NOEC	8,2 mg/l	72 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
methacrylic acid 79-41-4	EC50	45 mg/l	72 h	Selenastrum capricornutum (new name: Pseudokirchneriella subcapitata)	OECD Guideline 201 (Alga, Growth Inhibition Test)
Titanium dioxide 13463-67-7	EC50	Toxicity > Water solubility	72 h	Pseudokirchneriella subcapitata	OECD Guideline 201 (Alga, Growth Inhibition Test)

Toxicity to microorganisms

The mixture is classified based on calculation method referring to the classified substances present in the mixture.

Hazardous substances CAS-No.	Value type	Value	Exposure time	Species	Method
Ethoxylated bisphenol A dimethacrylate esters 41637-38-1	EC50	Toxicity > Water solubility	3 h	activated sludge of a predominantly domestic sewage	OECD Guideline 209 (Activated Sludge, Respiration Inhibition Test)
Hydroxypropyl methacrylate 27813-02-1	EC10	1.140 mg/l	16 h		not specified
Cumene hydroperoxide 80-15-9	EC10	70 mg/l	30 min		not specified
maleic acid 110-16-7	EC10	44,6 mg/l	18 h	Pseudomonas putida	DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm- Test)
methacrylic acid 79-41-4	EC10	100 mg/l	17 h		not specified
Titanium dioxide 13463-67-7	EC0	Toxicity > Water solubility	24 h	Pseudomonas fluorescens	DIN 38412, part 8 (Pseudomonas Zellvermehrungshemm- Test)

12.2. Persistence and degradability

Hazardous substances CAS-No.	Result	Test type	Degradability	Exposure time	Method
Ethoxylated bisphenol A dimethacrylate esters 41637-38-1	not readily biodegradable.	aerobic	24 %	28 d	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)
Hydroxypropyl methacrylate 27813-02-1	readily biodegradable	aerobic	94,2 %	28 d	OECD Guideline 301 E (Ready biodegradability: Modified OECD Screening Test)
Cumene hydroperoxide 80-15-9	not readily biodegradable.	aerobic	3 %	28 d	OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test)
maleic acid 110-16-7	readily biodegradable	aerobic	97,08 %	28 d	OECD Guideline 301 B (Ready Biodegradability: CO2 Evolution Test)
methacrylic acid 79-41-4	inherently biodegradable	aerobic	100 %	14 d	OECD Guideline 302 B (Inherent biodegradability: Zahn-Wellens/EMPA Test)
methacrylic acid 79-41-4	readily biodegradable	aerobic	86 %	28 d	OECD Guideline 301 D (Ready Biodegradability: Closed Bottle Test)

12.3. Bioaccumulative potential

Hazardous substances CAS-No.	Bioconcentration factor (BCF)	Exposure time	Temperature	Species	Method
Cumene hydroperoxide 80-15-9	9,1			calculation	OECD Guideline 305 (Bioconcentration: Flow-through Fish Test)

12.4. Mobility in soil

Hazardous substances CAS-No.	LogPow	Temperature	Method
Ethoxylated bisphenol A dimethacrylate esters 41637-38-1	5,3 - 5,62		OECD Guideline 117 (Partition Coefficient (n-octanol/ water), HPLC Method)
Hydroxypropyl methacrylate 27813-02-1	0,97	20 °C	not specified
Cumene hydroperoxide 80-15-9	1,6	25 °C	OECD Guideline 117 (Partition Coefficient (n-octanol/ water), HPLC Method)
maleic acid 110-16-7	-1,3	20 °C	OECD Guideline 107 (Partition Coefficient (n-octanol/ water), Shake Flask Method)
methacrylic acid 79-41-4	0,93	22 °C	OECD Guideline 107 (Partition Coefficient (n-octanol/ water), Shake Flask Method)
Acetic acid, 2-phenylhydrazide 114-83-0	0,74		not specified

12.5. Results of PBT and vPvB assessment

Hazardous substances CAS-No.	PBT/ vPvB
Ethoxylated bisphenol A dimethacrylate esters 41637-38-1	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Hydroxypropyl methacrylate 27813-02-1	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Cumene hydroperoxide 80-15-9	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
maleic acid 110-16-7	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
methacrylic acid 79-41-4	Not fulfilling Persistent, Bioaccumulative and Toxic (PBT), very Persistent and very Bioaccumulative (vPvB) criteria.
Titanium dioxide 13463-67-7	According to Annex XIII of regulation (EC) 1907/2006 a PBT and vPvB assessment shall not be conducted for inorganic substances.

12.6. Other adverse effects

No data available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product disposal:

Do not empty into drains / surface water / ground water.

Dispose of in accordance with local and national regulations.

Disposal of uncleaned packages:

After use, tubes, cartons and bottles containing residual product should be disposed of as chemically contaminated waste in an authorised legal land fill site or incinerated.

Waste code

08 04 09* waste adhesives and sealants containing organic solvents and other dangerous substances

The valid EWC waste code numbers are source-related. The manufacturer is therefore unable to specify EWC waste codes for the articles or products used in the various sectors. The EWC codes listed are intended as a recommendation for users. We will be happy to advise you.

SECTION 14: Transport information

14.1. UN number

ADR	Not dangerous goods
RID	Not dangerous goods
ADN	Not dangerous goods
IMDG	Not dangerous goods
IATA	Not dangerous goods

14.2. UN proper shipping name

ADR	Not dangerous goods
RID	Not dangerous goods
ADN	Not dangerous goods
IMDG	Not dangerous goods
IATA	Not dangerous goods

14.3. Transport hazard class(es)

ADR	Not dangerous goods
RID	Not dangerous goods
ADN	Not dangerous goods
IMDG	Not dangerous goods
IATA	Not dangerous goods

14.4. Packing group

ADR	Not dangerous goods
RID	Not dangerous goods
ADN	Not dangerous goods
IMDG	Not dangerous goods
IATA	Not dangerous goods

14.5. Environmental hazards

ADR	not applicable
RID	not applicable
ADN	not applicable
IMDG	not applicable
IATA	not applicable

14.6. Special precautions for user

ADR	not applicable
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RID	not applicable
ADN	not applicable
IMDG	not applicable
IATA	not applicable

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

not applicable

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**

Ozone Depleting Substance (ODS) (Regulation (EC) No 1005/2009):	Not applicable
Prior Informed Consent (PIC) (Regulation (EU) No 649/2012):	Not applicable
Persistent organic pollutants (Regulation (EU) 2019/1021):	Not applicable
VOC content (2010/75/EC)	< 3,00 %

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out.

SECTION 16: Other information

The labelling of the product is indicated in Section 2. The full text of all abbreviations indicated by codes in this safety data sheet are as follows:

H242 Heating may cause a fire.
H301 Toxic if swallowed.
H302 Harmful if swallowed.
H311 Toxic in contact with skin.
H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H330 Fatal if inhaled.
H331 Toxic if inhaled.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.
H351 Suspected of causing cancer.
H373 May cause damage to organs through prolonged or repeated exposure.
H411 Toxic to aquatic life with long lasting effects.
H412 Harmful to aquatic life with long lasting effects.
H413 May cause long lasting harmful effects to aquatic life.

Further information:

This Safety Data Sheet has been produced for sales from Henkel to parties purchasing from Henkel, is based on Regulation (EC) No 1907/2006 and provides information in accordance with applicable regulations of the European Union only. In that respect, no statement, warranty or representation of any kind is given as to compliance with any statutory laws or regulations of any other jurisdiction or territory other than the European Union. When exporting to territories other than the European Union, please consult with the respective Safety Data Sheet of the concerned territory to ensure compliance or liaise with Henkel's Product Safety and Regulatory Affairs Department (ua-productsafety.de@henkel.com) prior to export to other territories than the European Union.

This information is based on our current level of knowledge and relates to the product in the state in which it is delivered. It is intended to describe our products from the point of view of safety requirements and is not intended to guarantee any particular properties.

Dear Customer,

Henkel is committed to creating a sustainable future by promoting opportunities along the entire value chain. If you would like to contribute by switching from a paper to the electronic version of SDS, please contact the local Customer Service representative. We recommend to use a non-personal email address (e.g. SDS@your_company.com).

Relevant changes in this safety data sheet are indicated by vertical lines at the left margin in the body of this document. Corresponding text is displayed in a different color on shadowed fields.



5.56 Multipurpose Aerosol

CRC Industries (CRC Industries New Zealand)

Chemwatch: 4552-27

Version No: 11.1

Safety Data Sheet according to the Health and Safety at Work (Hazardous Substances) Regulations 2017

Chemwatch Hazard Alert Code: 4

Issue Date: 22/04/2021

Print Date: 22/03/2023

S.GHS.NZL.EN

SECTION 1 Identification of the substance / mixture and of the company / undertaking

Product Identifier

Product name	5.56 Multipurpose Aerosol
Chemical Name	Not Applicable
Synonyms	1751837 5.56 420ml; 1010448 - 5.56 400ml; 1010446 - 5.56 70ml; 1011493 - 5.56 480ml; 1752468 - Race Series 5.56 450g; 1752426 - 5.56 350ml; 1011748 - 5.56 380ml.
Proper shipping name	AEROSOLS
Chemical formula	Not Applicable
Other means of identification	Not Available

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Lubricant and penetrant. Application is by spray atomisation from a hand held aerosol pack
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Details of the manufacturer or supplier of the safety data sheet

Registered company name	CRC Industries (CRC Industries New Zealand)
Address	10 Highbrook Drive East Tamaki Auckland New Zealand
Telephone	+64 9 272 2700
Fax	+64 9 274 9696
Website	www.crc.co.nz
Email	customerservices@crc.co.nz

Emergency telephone number

Association / Organisation	CRC Industries (CRC Industries New Zealand)	CHEMWATCH EMERGENCY RESPONSE (24/7)
Emergency telephone numbers	NZ Poisons Centre 0800 POISON (0800 764 766)	+64 800 700 112
Other emergency telephone numbers	111 (NZ Emergency Services)	+61 3 9573 3188

Once connected and if the message is not in your preferred language then please dial 01

SECTION 2 Hazards identification

Classification of the substance or mixture

Classification ^[1]	Acute Toxicity (Oral) Category 5, Aspiration Hazard Category 1, Skin Corrosion/Irritation Category 3, Specific Target Organ Toxicity - Single Exposure (Narcotic Effects) Category 3, Aerosols Category 1
Legend:	1. Classified by Chemwatch; 2. Classification drawn from CCID EPA NZ; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI
Determined by Chemwatch using GHS/HSNO criteria	2.1.2A, 6.1E (aspiration), 6.1E (oral), 6.3B, 6.9B (narcotic effects)

Label elements

Hazard pictogram(s)	  
Signal word	Danger

Hazard statement(s)

H303	May be harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H316	Causes mild skin irritation.
H336	May cause drowsiness or dizziness.
H222	Extremely flammable aerosol.

Precautionary statement(s) Prevention

P271	Use only outdoors or in a well-ventilated area.
P261	Avoid breathing mist/vapours/spray.

Precautionary statement(s) Response

P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician/first aider.
P331	Do NOT induce vomiting.
P301+P312	IF SWALLOWED: Call a POISON CENTER/doctor/physician/first aider if you feel unwell.
P332+P313	If skin irritation occurs: Get medical advice/attention.

Precautionary statement(s) Storage

P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.
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SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
Various	>=60	<u>liquid hydrocarbons</u>
63748-98-1	10-30	<u>mineral oil</u>
Not Available	1-10	performance additives
68476-85-7.	10-30	<u>LPG (liquefied petroleum gas)</u>

Legend: 1. Classified by Chemwatch; 2. Classification drawn from CCID EPA NZ; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 4. Classification drawn from C&L; * EU IOELVs available

SECTION 4 First aid measures

Description of first aid measures

Eye Contact	If aerosols come in contact with the eyes: ▶ Immediately hold the eyelids apart and flush the eye continuously for at least 15 minutes with fresh running water. ▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▶ Transport to hospital or doctor without delay. ▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If solids or aerosol mists are deposited upon the skin: ▶ Flush skin and hair with running water (and soap if available). ▶ Remove any adhering solids with industrial skin cleansing cream. ▶ DO NOT use solvents. ▶ Seek medical attention in the event of irritation.

Inhalation	If aerosols, fumes or combustion products are inhaled: ▸ Remove to fresh air. ▸ Lay patient down. Keep warm and rested. ▸ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▸ If breathing is shallow or has stopped, ensure clear airway and apply resuscitation, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▸ Transport to hospital, or doctor.
Ingestion	▸ Avoid giving milk or oils. ▸ Avoid giving alcohol. Not considered a normal route of entry.

Indication of any immediate medical attention and special treatment needed

For acute or short term repeated exposures to petroleum distillates or related hydrocarbons:

- Primary threat to life, from pure petroleum distillate ingestion and/or inhalation, is respiratory failure.
- Patients should be quickly evaluated for signs of respiratory distress (e.g. cyanosis, tachypnoea, intercostal retraction, obtundation) and given oxygen. Patients with inadequate tidal volumes or poor arterial blood gases (pO₂ 50 mm Hg) should be intubated.
- Arrhythmias complicate some hydrocarbon ingestion and/or inhalation and electrocardiographic evidence of myocardial injury has been reported; intravenous lines and cardiac monitors should be established in obviously symptomatic patients. The lungs excrete inhaled solvents, so that hyperventilation improves clearance.
- A chest x-ray should be taken immediately after stabilisation of breathing and circulation to document aspiration and detect the presence of pneumothorax.
- Epinephrine (adrenalin) is not recommended for treatment of bronchospasm because of potential myocardial sensitisation to catecholamines. Inhaled cardioselective bronchodilators (e.g. Alupent, Salbutamol) are the preferred agents, with aminophylline a second choice.
- Lavage is indicated in patients who require decontamination; ensure use of cuffed endotracheal tube in adult patients. [Ellenhorn and Barceloux: Medical Toxicology]

Treat symptomatically.

- Heavy and persistent skin contamination over many years may lead to dysplastic changes. Pre-existing skin disorders may be aggravated by exposure to this product.
- In general, emesis induction is unnecessary with high viscosity, low volatility products, i.e. most oils and greases.
- High pressure accidental injection through the skin should be assessed for possible incision, irrigation and/or debridement.

NOTE: Injuries may not seem serious at first, but within a few hours tissue may become swollen, discoloured and extremely painful with extensive subcutaneous necrosis. Product may be forced through considerable distances along tissue planes.

SECTION 5 Firefighting measures

Extinguishing media

SMALL FIRE:

- Water spray, dry chemical or CO₂

LARGE FIRE:

- Water spray or fog.

Special hazards arising from the substrate or mixture

Fire Incompatibility	▸ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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Advice for firefighters

Fire Fighting	▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ May be violently or explosively reactive. ▸ Wear breathing apparatus plus protective gloves. ▸ Prevent, by any means available, spillage from entering drains or water course.
Fire/Explosion Hazard	▸ Liquid and vapour are highly flammable. ▸ Severe fire hazard when exposed to heat or flame. ▸ Vapour forms an explosive mixture with air. ▸ Severe explosion hazard, in the form of vapour, when exposed to flame or spark. Combustion products include: carbon monoxide (CO) carbon dioxide (CO₂) other pyrolysis products typical of burning organic material. Contains low boiling substance: Closed containers may rupture due to pressure buildup under fire conditions. CARE: Water in contact with hot liquid may cause foaming and a steam explosion with wide scattering of hot oil and possible severe burns. Foaming may cause overflow of containers and may result in possible fire.

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	Slippery when spilt. ▸ Clean up all spills immediately. ▸ Avoid breathing vapours and contact with skin and eyes. ▸ Wear protective clothing, impervious gloves and safety glasses. ▸ Shut off all possible sources of ignition and increase ventilation.
Major Spills	Slippery when spilt. ▸ Clear area of personnel and move upwind. ▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ May be violently or explosively reactive. ▸ Wear breathing apparatus plus protective gloves.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	▸ DO NOT allow clothing wet with material to stay in contact with skin ▸ Avoid all personal contact, including inhalation. ▸ Wear protective clothing when risk of exposure occurs. ▸ Use in a well-ventilated area. ▸ Prevent concentration in hollows and sumps.
Other information	▸ Keep dry to avoid corrosion of cans. Corrosion may result in container perforation and internal pressure may eject contents of can ▸ Store in original containers in approved flammable liquid storage area. ▸ DO NOT store in pits, depressions, basements or areas where vapours may be trapped. ▸ No smoking, naked lights, heat or ignition sources. ▸ Keep containers securely sealed.

Conditions for safe storage, including any incompatibilities

Suitable container	▸ Aerosol dispenser. ▸ Check that containers are clearly labelled.
Storage incompatibility	· CARE: Water in contact with heated material may cause foaming or a steam explosion with possible severe burns from wide scattering of hot material. Resultant overflow of containers may result in fire. · Oil leaks in a pressurized circuit may result in a fine flammable spray (the lower flammability limit for oil mist is reached for a concentration of about 45 g/m3 · Autoignition temperatures may be significantly lower under particular conditions (slow oxidation on finely divided materials.. ▸ Avoid reaction with oxidising agents

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
New Zealand Workplace Exposure Standards (WES)	mineral oil	Oil mist, mineral	5 mg/m3	10 mg/m3	Not Available	(om) - Sampled by a method that does not collect vapour
New Zealand Workplace Exposure Standards (WES)	LPG (liquefied petroleum gas)	LPG (Liquefied petroleum gas)	1000 ppm / 1800 mg/m3	Not Available	Not Available	Not Available

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
mineral oil	140 mg/m3	1,500 mg/m3	8,900 mg/m3
LPG (liquefied petroleum gas)	65,000 ppm	2.30E+05 ppm	4.00E+05 ppm

Ingredient	Original IDLH	Revised IDLH
liquid hydrocarbons	Not Available	Not Available
mineral oil	2,500 mg/m3	Not Available
LPG (liquefied petroleum gas)	2,000 ppm	Not Available

Exposure controls

Appropriate engineering	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed
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controls	engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.
Individual protection measures, such as personal protective equipment	
Eye and face protection	No special equipment for minor exposure i.e. when handling small quantities. OTHERWISE: For potentially moderate or heavy exposures: ▸ Safety glasses with side shields. ▸ NOTE: Contact lenses pose a special hazard; soft lenses may absorb irritants and ALL lenses concentrate them.
Skin protection	See Hand protection below
Hands/feet protection	▸ No special equipment needed when handling small quantities. ▸ OTHERWISE: ▸ For potentially moderate exposures: ▸ Wear general protective gloves, eg. light weight rubber gloves. ▸ For potentially heavy exposures: ▸ Wear chemical protective gloves, eg. PVC. and safety footwear.
Body protection	See Other protection below
Other protection	No special equipment needed when handling small quantities. OTHERWISE: ▸ Overalls. ▸ Skin cleansing cream. ▸ Eyewash unit. ▸ The clothing worn by process operators insulated from earth may develop static charges far higher (up to 100 times) than the minimum ignition energies for various flammable gas-air mixtures. This holds true for a wide range of clothing materials including cotton. ▸ Avoid dangerous levels of charge by ensuring a low resistivity of the surface material worn outermost. BREThERICK: Handbook of Reactive Chemical Hazards.

Respiratory protection

Type AX-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.

Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	AX-AUS P2	-	AX-PAPR-AUS / Class 1 P2
up to 50 x ES	-	AX-AUS / Class 1 P2	-
up to 100 x ES	-	AX-2 P2	AX-PAPR-2 P2 ^

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO₂), G = Agricultural chemicals, K = Ammonia(NH₃), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Amber liquid with a pleasant odour; not miscible with water. Supplied as an aerosol pack. Contents under PRESSURE . Contains highly flammable hydrocarbon propellant.		
Physical state	Liquid	Relative density (Water = 1)	0.81
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	550

pH (as supplied)	Not Applicable	Decomposition temperature (°C)	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	193 initial	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	-81 (propellant)	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	HIGHLY FLAMMABLE.	Oxidising properties	Not Available
Upper Explosive Limit (%)	12.0	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	1.4	Volatile Component (%vol)	82
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Immiscible	pH as a solution (1%)	Not Applicable
Vapour density (Air = 1)	>1	VOC g/L	Not Available

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	▸ Elevated temperatures. ▸ Presence of open flame. ▸ Product is considered stable. ▸ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled	Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo. Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual. There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Inhalation hazard is increased at higher temperatures. Central nervous system (CNS) depression may include general discomfort, symptoms of giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech and may progress to unconsciousness. Serious poisonings may result in respiratory depression and may be fatal. Material is highly volatile and may quickly form a concentrated atmosphere in confined or unventilated areas. The vapour may displace and replace air in breathing zone, acting as a simple asphyxiant. This may happen with little warning of overexposure. Symptoms of asphyxia (suffocation) may include headache, dizziness, shortness of breath, muscular weakness, drowsiness and ringing in the ears. If the asphyxia is allowed to progress, there may be nausea and vomiting, further physical weakness and unconsciousness and, finally, convulsions, coma and death. WARNING: Intentional misuse by concentrating/inhaling contents may be lethal. Inhaling high concentrations of mixed hydrocarbons can cause narcosis, with nausea, vomiting and lightheadedness. Low molecular weight (C2-C12) hydrocarbons can irritate mucous membranes and cause incoordination, giddiness, nausea, vertigo, confusion, headache, appetite loss, drowsiness, tremors and stupor. Exposure to hydrocarbons may result in irregularity of heart beat. Symptoms of moderate poisoning may include dizziness, headache, nausea.
Ingestion	Swallowing of the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis; serious consequences may result. (ICSC13733) Accidental ingestion of the material may be damaging to the health of the individual. Not normally a hazard due to physical form of product. Considered an unlikely route of entry in commercial/industrial environments Ingestion of petroleum hydrocarbons can irritate the pharynx, oesophagus, stomach and small intestine, and cause swellings and ulcers of the mucous. Symptoms include a burning mouth and throat; larger amounts can cause nausea and vomiting, narcosis, weakness, dizziness, slow and shallow breathing, abdominal swelling, unconsciousness and convulsions.
Skin Contact	Repeated exposure may cause skin cracking, flaking or drying following normal handling and use. There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons. Spray mist may produce discomfort Open cuts, abraded or irritated skin should not be exposed to this material The material may accentuate any pre-existing dermatitis condition

	Aromatic hydrocarbons may produce sensitivity and redness of the skin. They are not likely to be absorbed into the body through the skin but branched species are more likely to.
Eye	There is some evidence to suggest that this material can cause eye irritation and damage in some persons. Not considered to be a risk because of the extreme volatility of the gas. Direct eye contact with petroleum hydrocarbons can be painful, and the corneal epithelium may be temporarily damaged. Aromatic species can cause irritation and excessive tear secretion.
Chronic	Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Main route of exposure to the gas in the workplace is by inhalation. Constant or exposure over long periods to mixed hydrocarbons may produce stupor with dizziness, weakness and visual disturbance, weight loss and anaemia, and reduced liver and kidney function. Skin exposure may result in drying and cracking and redness of the skin. Oil may contact the skin or be inhaled. Extended exposure can lead to eczema, inflammation of hair follicles, pigmentation of the face and warts on the soles of the feet.

5.56 Multipurpose Aerosol	TOXICITY	IRRITATION
	Not Available	Not Available
liquid hydrocarbons	TOXICITY	IRRITATION
	Not Available	Not Available
mineral oil	TOXICITY	IRRITATION
	Not Available	Not Available
LPG (liquefied petroleum gas)	TOXICITY	IRRITATION
	Inhalation(Rat) LC50: 658 mg/l4h ^[2]	Not Available
Legend:	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

LIQUID HYDROCARBONS	For olefins: Studies have shown that normal alpha olefins have little or no toxic effect on animals except if inhaled in high concentrations. They may produce minimal skin and eye irritation, but do not sensitise the skin. Exposure to very high levels of C6-C16 normal alpha olefin vapours caused central nervous system effects, including anaesthesia (loss of sensation). If C20+ products are heated, fumes may produce nausea and irritation of the upper airway.
MINERAL OIL	The materials included in the Lubricating Base Oils category are related from both process and physical-chemical perspectives; The potential toxicity of a specific distillate base oil is inversely related to the severity or extent of processing the oil has undergone, since: • The adverse effects of these materials are associated with undesirable components, and • The levels of the undesirable components are inversely related to the degree of processing; • Distillate base oils receiving the same degree or extent of processing will have similar toxicities; • The potential toxicity of residual base oils is independent of the degree of processing the oil receives. • The reproductive and developmental toxicity of the distillate base oils is inversely related to the degree of processing. Unrefined & mildly refined distillate base oils contain the highest levels of undesirable components, have the largest variation of hydrocarbon molecules and have shown the highest potential cancer-causing and mutation-causing activities. Highly and severely refined distillate base oils are produced from unrefined and mildly refined oils by removing or transforming undesirable components. In comparison to unrefined and mildly refined base oils, the highly and severely refined distillate base oils have a smaller range of hydrocarbon molecules and have demonstrated very low mammalian toxicity. Testing of residual oils for mutation-causing and cancer-causing potential has shown negative results, supporting the belief that these materials lack biologically active components or the components are largely non-bioavailable due to their molecular size. Toxicity testing has consistently shown that lubricating base oils have low acute toxicities.
LPG (LIQUEFIED PETROLEUM GAS)	inhalation of the gas
LIQUID HYDROCARBONS & LPG (LIQUEFIED PETROLEUM GAS)	No significant acute toxicological data identified in literature search.

Acute Toxicity	✓	Carcinogenicity	✗
Skin Irritation/Corrosion	✓	Reproductivity	✗
Serious Eye Damage/Irritation	✗	STOT - Single Exposure	✓
Respiratory or Skin sensitisation	✗	STOT - Repeated Exposure	✗
Mutagenicity	✗	Aspiration Hazard	✓

Legend: ✗ – Data either not available or does not fill the criteria for classification
✓ – Data available to make classification

SECTION 12 Ecological information

Toxicity

5.56 Multipurpose Aerosol	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
liquid hydrocarbons	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
mineral oil	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
LPG (liquefied petroleum gas)	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
Legend: <i>Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data</i>					

For Hydrocarbons: log Kow 1. BCF~10.
For Aromatics: log Kow 2-3.
BCF 20-200.
Drinking Water Standards: hydrocarbon total: 10 ug/l (UK max.).
DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
	No Data available for all ingredients	No Data available for all ingredients

Bioaccumulative potential

Ingredient	Bioaccumulation
	No Data available for all ingredients

Mobility in soil

Ingredient	Mobility
	No Data available for all ingredients

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. A Hierarchy of Controls seems to be common - the user should investigate: ▸ Reduction ▸ Reuse ▸ Recycling ▸ Disposal (if all else fails) This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. ▸ DO NOT allow wash water from cleaning or process equipment to enter drains. ▸ It may be necessary to collect all wash water for treatment before disposal. ▸ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▸ Where in doubt contact the responsible authority. ▸ Consult State Land Waste Management Authority for disposal. ▸ Discharge contents of damaged aerosol cans at an approved site. ▸ Allow small quantities to evaporate. ▸ DO NOT incinerate or puncture aerosol cans.
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Ensure that the hazardous substance is disposed in accordance with the Hazardous Substances (Disposal) Notice 2017

Disposal Requirements

Packages that have been in direct contact with the hazardous substance must be only disposed if the hazardous substance was appropriately removed and cleaned out from the package. The package must be disposed according to the manufacturer's directions taking into account the material it is made of. Packages which hazardous content have been appropriately treated and removed may be recycled.

The hazardous substance must only be disposed if it has been treated by a method that changed the characteristics or composition of the substance and it is no longer hazardous.

SECTION 14 Transport information

Labels Required

	
Marine Pollutant	NO
HAZCHEM	Not Applicable

Land transport (UN)

UN number or ID number	1950	
UN proper shipping name	AEROSOLS	
Transport hazard class(es)	Class	2.1
	Subsidiary risk	Not Applicable
Packing group	Not Applicable	
Environmental hazard	Not Applicable	
Special precautions for user	Special provisions	63; 190; 277; 327; 344; 381
	Limited quantity	1000ml

Air transport (ICAO-IATA / DGR)

UN number	1950	
UN proper shipping name	Aerosols, flammable	
Transport hazard class(es)	ICAO/IATA Class	2.1
	ICAO / IATA Subrisk	Not Applicable
	ERG Code	10L
Packing group	Not Applicable	
Environmental hazard	Not Applicable	
Special precautions for user	Special provisions	A145 A167 A802
	Cargo Only Packing Instructions	203
	Cargo Only Maximum Qty / Pack	150 kg
	Passenger and Cargo Packing Instructions	203
	Passenger and Cargo Maximum Qty / Pack	75 kg
	Passenger and Cargo Limited Quantity Packing Instructions	Y203
	Passenger and Cargo Limited Maximum Qty / Pack	30 kg G

Sea transport (IMDG-Code / GGVSee)

UN number	1950	
UN proper shipping name	AEROSOLS	
Transport hazard class(es)	IMDG Class	2.1
	IMDG Subrisk	Not Applicable
Packing group	Not Applicable	
Environmental hazard	Not Applicable	
Special precautions for user	EMS Number	F-D, S-U
	Special provisions	63 190 277 327 344 381 959
	Limited Quantities	1000 ml

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
liquid hydrocarbons	Not Available
mineral oil	Not Available
LPG (liquefied petroleum gas)	Not Available

Transport in bulk in accordance with the IGC Code

Product name	Ship Type
liquid hydrocarbons	Not Available
mineral oil	Not Available
LPG (liquefied petroleum gas)	Not Available

SECTION 15 Regulatory information

Safety, health and environmental regulations / legislation specific for the substance or mixture

This substance is to be managed using the conditions specified in an applicable Group Standard

HSR Number	Group Standard
HSR002515	Aerosols (Flammable) Group Standard 2017

Please refer to Section 8 of the SDS for any applicable tolerable exposure limit or Section 12 for environmental exposure limit.

liquid hydrocarbons is found on the following regulatory lists

Not Applicable

mineral oil is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 1: Carcinogenic to humans
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic

New Zealand Approved Hazardous Substances with controls
New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals
New Zealand Workplace Exposure Standards (WES)

LPG (liquefied petroleum gas) is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List
New Zealand Approved Hazardous Substances with controls
New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data
New Zealand Inventory of Chemicals (NZIoC)
New Zealand Workplace Exposure Standards (WES)

Hazardous Substance Location

Subject to the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Hazard Class	Quantity (Closed Containers)	Quantity (Open Containers)
2.1.2A	3 000 L (aggregate water capacity)	3 000 L (aggregate water capacity)

Certified Handler

Subject to Part 4 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Class of substance	Quantities
Not Applicable	Not Applicable

Refer Group Standards for further information

Maximum quantities of certain hazardous substances permitted on passenger service vehicles

Subject to Regulation 13.14 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Hazard Class	Gas (aggregate water capacity in mL)	Liquid (L)	Solid (kg)	Maximum quantity per package for each classification
2.1.2A				1L (aggregate water capacity)

Tracking Requirements

Not Applicable

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	No (mineral oil)
Canada - DSL	No (mineral oil)
Canada - NDSL	No (mineral oil; LPG (liquefied petroleum gas))
China - IECSC	No (mineral oil)
Europe - EINEC / ELINCS / NLP	No (mineral oil)
Japan - ENCS	Yes
Korea - KECI	No (mineral oil)
New Zealand - NZIoC	No (mineral oil)
Philippines - PICCS	No (mineral oil)
USA - TSCA	No (mineral oil)
Taiwan - TCSI	No (mineral oil)
Mexico - INSQ	No (mineral oil)
Vietnam - NCI	No (mineral oil)
Russia - FBEPH	No (mineral oil)
Legend:	<i>Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.</i>

SECTION 16 Other information

Revision Date	22/04/2021
Initial Date	16/06/2004

SDS Version Summary

Version	Date of Update	Sections Updated
10.1	16/03/2020	Identification of the substance / mixture and of the company / undertaking - Synonyms, Name
11.1	22/04/2021	Identification of the substance / mixture and of the company / undertaking - Synonyms, Name

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

- PC—TWA: Permissible Concentration-Time Weighted Average
- PC—STEL: Permissible Concentration-Short Term Exposure Limit
- IARC: International Agency for Research on Cancer
- ACGIH: American Conference of Governmental Industrial Hygienists
- STEL: Short Term Exposure Limit
- TEEL: Temporary Emergency Exposure Limit.
- IDLH: Immediately Dangerous to Life or Health Concentrations
- ES: Exposure Standard
- OSF: Odour Safety Factor
- NOAEL :No Observed Adverse Effect Level
- LOAEL: Lowest Observed Adverse Effect Level
- TLV: Threshold Limit Value
- LOD: Limit Of Detection
- OTV: Odour Threshold Value
- BCF: BioConcentration Factors
- BEL: Biological Exposure Index
- AIIC: Australian Inventory of Industrial Chemicals
- DSL: Domestic Substances List
- NDSL: Non-Domestic Substances List
- IECSC: Inventory of Existing Chemical Substance in China
- EINECS: European INventory of Existing Commercial chemical Substances
- ELINCS: European List of Notified Chemical Substances

NLP: No-Longer Polymers
ENCS: Existing and New Chemical Substances Inventory
KECI: Korea Existing Chemicals Inventory
NZIoC: New Zealand Inventory of Chemicals
PICCS: Philippine Inventory of Chemicals and Chemical Substances
TSCA: Toxic Substances Control Act
TCSI: Taiwan Chemical Substance Inventory
INSQ: Inventario Nacional de Sustancias Químicas
NCI: National Chemical Inventory
FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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TEL (+61 3) 9572 4700.

ANDREW METHYLATED SPIRITS

Damar Industries Limited

Version No: 6.12
Safety Data Sheet according to HSNO Regulations

Chemwatch Hazard Alert Code: 3

Issue Date: 21/05/2018
Print Date: 17/06/2019
S.GHS.NZL.EN

SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Identifier

Product name	ANDREW METHYLATED SPIRITS
Synonyms	ALE0134; ALG0134; ALK0134; ALL0134; ALP0134; ALQ0134; ALT0134
Proper shipping name	ETHANOL (ETHYL ALCOHOL) or ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)
Other means of identification	Not Available

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Cleaning solvent
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Details of the supplier of the safety data sheet

Registered company name	Damar Industries Limited
Address	800 Te Ngae Road BOP New Zealand
Telephone	0800 334475
Fax	+64 7 345 6019
Website	www.damarindustries.co.nz
Email	info@damarindustries.co.nz

Emergency telephone number

Association / Organisation	Damar Industries Limited
Emergency telephone numbers	0800 243 622
Other emergency telephone numbers	1800 127 406 (outside New Zealand)

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

Considered a Hazardous Substance according to the criteria of the New Zealand Hazardous Substances New Organisms legislation.
Classified as Dangerous Goods for transport purposes.

CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability	3	
Toxicity	0	
Body Contact	2	
Reactivity	0	
Chronic	0	

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

Classification ^[1]	Flammable Liquid Category 2, Eye Irritation Category 2A
Legend:	1. Classified by Chemwatch; 2. Classification drawn from CCID EPA NZ; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI
Gazetted by EPA New Zealand	3.1B, 6.4A

ANDREW METHYLATED SPIRITS

Label elements

Hazard pictogram(s)	 
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SIGNAL WORD

DANGER

Hazard statement(s)

H225	Highly flammable liquid and vapour.
H319	Causes serious eye irritation.

Precautionary statement(s) Prevention

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof electrical/ventilating/lighting/intrinsically safe equipment.

Precautionary statement(s) Response

P370+P378	In case of fire: Use alcohol resistant foam or normal protein foam to extinguish.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

Precautionary statement(s) Storage

P403+P235	Store in a well-ventilated place. Keep cool.
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Precautionary statement(s) Disposal

P501	Dispose of contents/container in accordance with local regulations.
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SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
64-17-5	99.99828	<u>ethanol</u>
3734-33-6	0.00156	<u>denatonium benzoate</u>
7077-31-8	0.00016	<u>C.I. Basic Violet 3 chloride</u>

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye Contact	If this product comes in contact with eyes: - Wash out immediately with water. - If irritation continues, seek medical attention. - Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin or hair contact occurs: - Flush skin and hair with running water (and soap if available). - Seek medical attention in event of irritation.
Inhalation	- If fumes, aerosols or combustion products are inhaled remove from contaminated area. - Other measures are usually unnecessary.
Ingestion	- Immediately give a glass of water. - First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

ANDREW METHYLATED SPIRITS

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

For acute or short term repeated exposures to ethanol:

- ▶ Acute ingestion in non-tolerant patients usually responds to supportive care with special attention to prevention of aspiration, replacement of fluid and correction of nutritional deficiencies (magnesium, thiamine pyridoxine, Vitamins C and K).
- ▶ Give 50% dextrose (50-100 ml) IV to obtunded patients following blood draw for glucose determination.
- ▶ Comatose patients should be treated with initial attention to airway, breathing, circulation and drugs of immediate importance (glucose, thiamine).
- ▶ Decontamination is probably unnecessary more than 1 hour after a single observed ingestion. Cathartics and charcoal may be given but are probably not effective in single ingestions.
- ▶ Fructose administration is contra-indicated due to side effects.

SECTION 5 FIREFIGHTING MEASURES**Extinguishing media**

- ▶ Alcohol stable foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).
- ▶ Carbon dioxide.

Special hazards arising from the substrate or mixture

Fire Incompatibility	▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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Advice for firefighters

Fire Fighting	▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ May be violently or explosively reactive. ▶ Wear breathing apparatus plus protective gloves in the event of a fire. ▶ Prevent, by any means available, spillage from entering drains or water course.
Fire/Explosion Hazard	▶ Liquid and vapour are highly flammable. ▶ Severe fire hazard when exposed to heat, flame and/or oxidisers. ▶ Vapour may travel a considerable distance to source of ignition. ▶ Heating may cause expansion or decomposition leading to violent rupture of containers. Combustion products include: , carbon dioxide (CO2) , other pyrolysis products typical of burning organic material.

SECTION 6 ACCIDENTAL RELEASE MEASURES**Personal precautions, protective equipment and emergency procedures**

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	▶ Remove all ignition sources. ▶ Clean up all spills immediately. ▶ Avoid breathing vapours and contact with skin and eyes. ▶ Control personal contact with the substance, by using protective equipment.
Major Spills	▶ Clear area of personnel and move upwind. ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ May be violently or explosively reactive. ▶ Wear breathing apparatus plus protective gloves.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 HANDLING AND STORAGE**Precautions for safe handling**

Safe handling	▶ Containers, even those that have been emptied, may contain explosive vapours. ▶ Do NOT cut, drill, grind, weld or perform similar operations on or near containers. ▶ Avoid all personal contact, including inhalation.
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ANDREW METHYLATED SPIRITS

	▶ Wear protective clothing when risk of exposure occurs. ▶ Use in a well-ventilated area. ▶ Prevent concentration in hollows and sumps.
Other information	▶ Store in original containers in approved flame-proof area. ▶ No smoking, naked lights, heat or ignition sources. ▶ DO NOT store in pits, depressions, basements or areas where vapours may be trapped. ▶ Keep containers securely sealed.

Conditions for safe storage, including any incompatibilities

Suitable container	▶ Packing as supplied by manufacturer. ▶ Plastic containers may only be used if approved for flammable liquid. ▶ Check that containers are clearly labelled and free from leaks. ▶ For low viscosity materials (i) : Drums and jerry cans must be of the non-removable head type. (ii) : Where a can is to be used as an inner package, the can must have a screwed enclosure. ▶ For materials with a viscosity of at least 2680 cSt. (23 deg. C) ▶ For manufactured product having a viscosity of at least 250 cSt.
Storage incompatibility	▶ Avoid oxidising agents, acids, acid chlorides, acid anhydrides, chloroformates. ▶ Avoid strong bases. *

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
New Zealand Workplace Exposure Standards (WES)	ethanol	Ethyl alcohol (Ethanol)	1000 ppm / 1880 mg/m3	Not Available	Not Available	Not Available

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
ethanol	Ethyl alcohol; (Ethanol)	Not Available	Not Available	15000 ppm
C.I. Basic Violet 3 chloride	Crystal violet; (Aniline violet)	0.082 mg/m3	0.9 mg/m3	83 mg/m3

Ingredient	Original IDLH	Revised IDLH
ethanol	3,300 ppm	Not Available
denatonium benzoate	Not Available	Not Available
C.I. Basic Violet 3 chloride	Not Available	Not Available

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.
Personal protection	
Eye and face protection	▶ Safety glasses with side shields ▶ Chemical goggles. ▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience.
Skin protection	See Hand protection below
Hands/feet protection	Wear general protective gloves, eg. light weight rubber gloves. The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the

ANDREW METHYLATED SPIRITS

	glove material can not be calculated in advance and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice. Personal hygiene is a key element of effective hand care.
Body protection	See Other protection below
Other protection	▸ Overalls. ▸ PVC Apron. ▸ PVC protective suit may be required if exposure severe. ▸ Eyewash unit. ▸ Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity. ▸ For large scale or continuous use wear tight-weave non-static clothing (no metallic fasteners, cuffs or pockets). ▸ Non sparking safety or conductive footwear should be considered. Conductive footwear describes a boot or shoe with a sole made from a conductive compound chemically bound to the bottom components, for permanent control to electrically ground the foot and shall dissipate static electricity from the body to reduce the possibility of ignition of volatile compounds.

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

"Forsberg Clothing Performance Index".

The effect(s) of the following substance(s) are taken into account in the **computer-generated** selection:

ANDREW METHYLATED SPIRITS

Material	CPI
BUTYL	A
NEOPRENE	A
NITRILE	A
NITRILE+PVC	A
PE/EVAL/PE	A
PVC	B
NATURAL RUBBER	C
NATURAL+NEOPRENE	C

* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Respiratory protection

- Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	THIN CLEAR PURPLE LIQUID WITH A MILD SWEET ODOUR		
Physical state	Liquid	Relative density (Water = 1)	0.79
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	365
pH (as supplied)	Not Available	Decomposition temperature	Not Available
Melting point / freezing point (°C)	-114.1	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	78.3	Molecular weight (g/mol)	Not Available

ANDREW METHYLATED SPIRITS

Flash point (°C)	13	Taste	Not Available
Evaporation rate	2.53 BuAC = 1	Explosive properties	Not Available
Flammability	HIGHLY FLAMMABLE.	Oxidising properties	Not Available
Upper Explosive Limit (%)	19	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	3.3	Volatile Component (%vol)	100
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Miscible	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	1.9	VOC g/L	790

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	- Unstable in the presence of incompatible materials. - Product is considered stable. - Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Animal testing shows that the most common signs of inhalation overdose is inco-ordination and drowsiness. Inhalation of high concentrations of gas/vapour causes lung irritation with coughing and nausea, central nervous depression with headache and dizziness, slowing of reflexes, fatigue and inco-ordination.						
Ingestion	Ingestion of ethanol (ethyl alcohol, "alcohol") may produce nausea, vomiting, bleeding from the digestive tract, abdominal pain, and diarrhoea. Effects on the body: <table border="1"> <thead> <tr> <th>Blood concentration</th><th>Effects</th></tr> </thead> <tbody> <tr> <td><1.5 g/L</td><td>Mild: impaired vision, co-ordination and reaction time; emotional instability</td></tr> <tr> <td>1.5-3.0 g/L</td><td>Moderate: Slurred speech, confusion, inco-ordination, emotional instability, disturbances in perception and senses, possible blackouts, and impaired objective performance in standardized tests. Possible double vision, flushing, fast heart rate, sweating and incontinence. Slow breathing may occur rarely and fast breathing may develop in cases of metabolic acidosis, low blood sugar and low blood potassium.</td></tr> </tbody> </table> The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.	Blood concentration	Effects	<1.5 g/L	Mild: impaired vision, co-ordination and reaction time; emotional instability	1.5-3.0 g/L	Moderate: Slurred speech, confusion, inco-ordination, emotional instability, disturbances in perception and senses, possible blackouts, and impaired objective performance in standardized tests. Possible double vision, flushing, fast heart rate, sweating and incontinence. Slow breathing may occur rarely and fast breathing may develop in cases of metabolic acidosis, low blood sugar and low blood potassium.
Blood concentration	Effects						
<1.5 g/L	Mild: impaired vision, co-ordination and reaction time; emotional instability						
1.5-3.0 g/L	Moderate: Slurred speech, confusion, inco-ordination, emotional instability, disturbances in perception and senses, possible blackouts, and impaired objective performance in standardized tests. Possible double vision, flushing, fast heart rate, sweating and incontinence. Slow breathing may occur rarely and fast breathing may develop in cases of metabolic acidosis, low blood sugar and low blood potassium.						
Skin Contact	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting. Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.						
Eye	Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn). Direct contact of the eye with ethanol (alcohol) may cause an immediate stinging and burning sensation, with reflex closure of the lid, and a temporary, tearing injury to the cornea together with redness of the conjunctiva. Discomfort may last 2 days but usually the injury heals without treatment.						

ANDREW METHYLATED SPIRITS

Chronic	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course. Prolonged exposure to ethanol may cause damage to the liver and cause scarring. It may also worsen damage caused by other agents.
----------------	--

ANDREW METHYLATED SPIRITS	TOXICITY	IRRITATION
	Not Available	Not Available
ethanol	TOXICITY	IRRITATION
	Inhalation (rat) LC50: 124.7 mg/l/4H ^[2]	Eye (rabbit): 500 mg SEVERE
	Oral (rat) LD50: =1501 mg/kg ^[2]	Eye (rabbit):100mg/24hr-moderate
		Eye: adverse effect observed (irritating) ^[1]
		Skin (rabbit):20 mg/24hr-moderate
		Skin (rabbit):400 mg (open)-mild
denatonium benzoate	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg ^[1]	Eye: adverse effect observed (irreversible damage) ^[1]
	Inhalation (rat) LC50: 0.2 mg/l/4H ^[2]	Skin: adverse effect observed (irritating) ^[1]
	Oral (rat) LD50: 584 mg/kg ^[2]	
C.I. Basic Violet 3 chloride	TOXICITY	IRRITATION
	Oral (rat) LD50: 420 mg/kg ^[2]	Eye (rabbit): irritating *
		Eye: adverse effect observed (irreversible damage) ^[1]
		Skin (human): 2 mg/2d I - mild
		Skin (human): 3 mg/3d I - mild
		Skin (rabbit): non-irritating *
Legend:	TOXICITY	IRRITATION
		Skin: no adverse effect observed (not irritating) ^[1]
	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

DENATONIUM BENZOATE	Most undiluted cationic surfactants satisfy the criteria for classification as Harmful (Xn) with R22 and as Irritant (Xi) for skin and eyes with R38 and R41. For quaternary ammonium compounds (QACs): Quaternary ammonium compounds are synthetically made surfactants. Studies show that its solubility, toxicity and irritation depend on chain length and bond type while effect on histamine depends on concentration. QACs may cause muscle paralysis with no brain involvement. There is a significant association between the development of asthma symptoms and the use of QACs as disinfectant. Somnolence, tremor, ataxia recorded.
C.I. BASIC VIOLET 3 CHLORIDE	NOTE: Substance has been shown to be mutagenic in at least one assay, or belongs to a family of chemicals producing damage or change to cellular DNA. Exposure to the material for prolonged periods may cause physical defects in the developing embryo (teratogenesis). Effects include acute pulmonary oedema, diarrhoea, nausea, vomiting. Foetotoxic.
ETHANOL & C.I. BASIC VIOLET 3 CHLORIDE	The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.
DENATONIUM BENZOATE & C.I. BASIC VIOLET 3 CHLORIDE	Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia.

Acute Toxicity	✗	Carcinogenicity	✗
Skin Irritation/Corrosion	✗	Reproductivity	✗
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	✗
Respiratory or Skin sensitisation	✗	STOT - Repeated Exposure	✗

ANDREW METHYLATED SPIRITS

Mutagenicity X

Aspiration Hazard X

Legend: X – Data either not available or does not fill the criteria for classification
 ✓ – Data available to make classification

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

ANDREW METHYLATED SPIRITS	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Available	Not Available	Not Available	Not Available	Not Available
ethanol	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	11-mg/L	2
	EC50	48	Crustacea	2mg/L	4
	EC50	96	Algae or other aquatic plants	17.921mg/L	4
	NOEC	2016	Fish	0.000375mg/L	4
denatonium benzoate	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	>1-mg/L	2
	EC50	48	Crustacea	>500mg/L	2
	EC50	72	Algae or other aquatic plants	>100mg/L	2
	NOEC	48	Crustacea	50mg/L	2
C.I. Basic Violet 3 chloride	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	0.082mg/L	2
	EC50	48	Crustacea	0.53mg/L	2
	EC50	72	Algae or other aquatic plants	0.21mg/L	2
Legend: Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data					

For Ethanol:

log Kow: -0.31 to -0.32;

Koc 1: Estimated BCF= 3;

Half-life (hr) air: 144;

Half-life (hr) H2O surface water: 144;

Henry's atm m3 /mol: 6.29E-06;

BOD 5 if unstated: 0.93-1.67,63%

COD: 1.99-2.11,97%;

ThOD : 2.1.

Environmental Fate: Terrestrial - Ethanol quickly biodegrades in soil but may leach into ground water; most is lost by evaporation. Ethanol is expected to have very high mobility in soil. Volatilization of ethanol from moist soil surfaces is expected to be an important fate process.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
ethanol	LOW (Half-life = 2.17 days)	LOW (Half-life = 5.08 days)
C.I. Basic Violet 3 chloride	HIGH	HIGH

Bioaccumulative potential

Ingredient	Bioaccumulation
ethanol	LOW (LogKOW = -0.31)
C.I. Basic Violet 3 chloride	LOW (LogKOW = 3.1785)

Mobility in soil

Ingredient	Mobility
ethanol	HIGH (KOC = 1)
C.I. Basic Violet 3 chloride	LOW (KOC = 2851000)

ANDREW METHYLATED SPIRITS

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / Packaging disposal	Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. A Hierarchy of Controls seems to be common - the user should investigate: ▸ Reduction ▸ Reuse ▸ Recycling ▸ Disposal (if all else fails) This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. ▸ DO NOT allow wash water from cleaning or process equipment to enter drains. ▸ It may be necessary to collect all wash water for treatment before disposal. ▸ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▸ Where in doubt contact the responsible authority. ▸ Recycle wherever possible. ▸ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified. ▸ Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or Incineration in a licensed apparatus (after admixture with suitable combustible material). ▸ Decontaminate empty containers.

Ensure that the hazardous substance is disposed in accordance with the Hazardous Substances (Disposal) Notice 2017

Disposal Requirements

Packages that have been in direct contact with the hazardous substance must be only disposed if the hazardous substance was appropriately removed and cleaned out from the package.

The package must be disposed according to the manufacturer's directions taking into account the material it is made of.

Packages which hazardous content have been appropriately treated and removed may be recycled.

The hazardous substance must only be disposed if it has been treated by a method that changed the characteristics or composition of the substance and it is no longer hazardous.

SECTION 14 TRANSPORT INFORMATION

Labels Required

	
Marine Pollutant	NO
HAZCHEM	•2YE

Land transport (UN)

UN number	1170				
UN proper shipping name	ETHANOL (ETHYL ALCOHOL) or ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)				
Transport hazard class(es)	<table> <tr> <td>Class</td><td>3</td></tr> <tr> <td>Subrisk</td><td>Not Applicable</td></tr> </table>	Class	3	Subrisk	Not Applicable
Class	3				
Subrisk	Not Applicable				
Packing group	II				
Environmental hazard	Not Applicable				
Special precautions for user	<table> <tr> <td>Special provisions</td><td>144</td></tr> <tr> <td>Limited quantity</td><td>1 L</td></tr> </table>	Special provisions	144	Limited quantity	1 L
Special provisions	144				
Limited quantity	1 L				

Air transport (ICAO-IATA / DGR)

UN number	1170
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ANDREW METHYLATED SPIRITS

UN proper shipping name	Ethanol or Ethanol. Solution		
Transport hazard class(es)	ICAO/IATA Class	3	
	ICAO / IATA Subrisk	Not Applicable	
	ERG Code	3L	
Packing group	II		
Environmental hazard	Not Applicable		
Special precautions for user	Special provisions	A3 A58 A180	
	Cargo Only Packing Instructions	364	
	Cargo Only Maximum Qty / Pack	60 L	
	Passenger and Cargo Packing Instructions	353	
	Passenger and Cargo Maximum Qty / Pack	5 L	
	Passenger and Cargo Limited Quantity Packing Instructions	Y341	
	Passenger and Cargo Limited Maximum Qty / Pack	1 L	

Sea transport (IMDG-Code / GGVSee)

UN number	1170		
UN proper shipping name	ETHANOL (ETHYL ALCOHOL) or ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)		
Transport hazard class(es)	IMDG Class	3	
	IMDG Subrisk	Not Applicable	
Packing group	II		
Environmental hazard	Not Applicable		
Special precautions for user	EMS Number	F-E , S-D	
	Special provisions	144	
	Limited Quantities	1 L	

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

SECTION 15 REGULATORY INFORMATION

Safety, health and environmental regulations / legislation specific for the substance or mixture

This substance can be managed under the controls specified in the Transfer Notice or alternatively it may be managed using the conditions specified in an applicable Group Standard.

HSR Number	Group Standard
HSR002553	Denatured Ethanol Group Standard 2017

ETHANOL(64-17-5) IS FOUND ON THE FOLLOWING REGULATORY LISTS

GESAMP/EHS Composite List - GESAMP Hazard Profiles

IMO IBC Code Chapter 17: Summary of minimum requirements

IMO IBC Code Chapter 18: List of products to which the Code does not apply

IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances

IMO Provisional Categorization of Liquid Substances - List 2: Pollutant only mixtures containing at least 99% by weight of components already assessed by IMO

IMO Provisional Categorization of Liquid Substances - List 3: (Trade-named) mixtures containing at least 99% by weight of components already assessed by IMO, presenting safety hazards

International Air Transport Association (IATA) Dangerous Goods Regulations

International Maritime Dangerous Goods Requirements (IMDG Code)

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data

New Zealand Inventory of Chemicals (NZIoC)

New Zealand Workplace Exposure Standards (WES)

United Nations Recommendations on the Transport of Dangerous Goods Model Regulations

DENATONIUM BENZOATE(3734-33-6) IS FOUND ON THE FOLLOWING REGULATORY LISTS

ANDREW METHYLATED SPIRITS

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data

New Zealand Inventory of Chemicals (NZIoC)

C.I. BASIC VIOLET 3 CHLORIDE(7077-31-8) IS FOUND ON THE FOLLOWING REGULATORY LISTS

International Air Transport Association (IATA) Dangerous Goods Regulations

International Maritime Dangerous Goods Requirements (IMDG Code)

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data

New Zealand Inventory of Chemicals (NZIoC)

New Zealand Land Transport Rule: Dangerous Goods 2005 - Schedule 1
Quantity limits

United Nations Recommendations on the Transport of Dangerous Goods
Model Regulations

Hazardous Substance Location

Subject to the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Hazard Class	Quantity beyond which controls apply for closed containers	Quantity beyond which controls apply when use occurring in open containers
3.1B	100 L in containers greater than 5 L 250 L in containers up to and including 5 L	50 L 50 L

Certified Handler

Subject to Part 4 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Class of substance	Quantities
3.1B	250 L (when in containers greater than 5 L) 500 L (when in containers up to and including 5 L)

Refer Group Standards for further information

Tracking Requirements

Not Applicable

National Inventory Status

National Inventory	Status
Australia - AICS	Yes
Canada - DSL	Yes
Canada - NDSL	No (ethanol; C.I. Basic Violet 3 chloride; denatonium benzoate)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	No (denatonium benzoate)
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - ARIPS	Yes
Thailand - TECI	Yes
Legend:	Yes = All CAS declared ingredients are on the inventory No = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

SECTION 16 OTHER INFORMATION

Revision Date	21/05/2018
Initial Date	21/05/2018

ANDREW METHYLATED SPIRITS

Other information**Ingredients with multiple cas numbers**

Name	CAS No
ethanol	64-17-5, 2348-46-1
C.I. Basic Violet 3 chloride	548-62-9, 23355-47-7, 7077-31-8

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average
PC—STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit.
IDLH: Immediately Dangerous to Life or Health Concentrations
OSF: Odour Safety Factor
NOAEL :No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index

Powered by AuthorITe, from Chemwatch.



Diggers Mineral Turpentine NZ

Recochem Inc

Part Number: 16010

Version No: 1.1

Safety Data Sheet according to the Health and Safety at Work (Hazardous Substances) Regulations 2017

Chemwatch Hazard Alert Code: 3

Issue Date: 10/08/2022

Print Date: 10/08/2022

L.GHS.NZL.EN

SECTION 1 Identification of the substance / mixture and of the company / undertaking

Product Identifier

Product name: Diggers Mineral Turpentine NZ

Synonyms:

Petropine, Thinners, Turps

Proper shipping name: TURPENTINE SUBSTITUTE

Other means of identification: Not Available

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses:

Paint solvent, paint thinner, solvent

Details of the supplier of the safety data sheet

Registered company name	Recochem Inc
Address	1809, Lytton Road Qld 4178 Australia
Telephone	+617 3308 5200
Fax	+617 3308 5201
Website	www.recochem.com.au
Email	recoast@recochem.com

Emergency telephone number

Association / Organisation	Owens Logisitcs
Emergency telephone numbers	09 270 110
Other emergency telephone numbers	PIC 0800 764 766

SECTION 2 Hazards identification

Classification of the substance or mixture

Classification [1]	Flammable Liquids Category 3, Specific Target Organ Toxicity - Single Exposure (Narcotic Effects) Category 3, Hazardous to the Aquatic Environment Long-Term Hazard Category 2, Aspiration Hazard Category 1
Legend:	1. Classified by Chemwatch; 2. Classification drawn from CCID EPA NZ; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI
Determined by Chemwatch using GHS/HSNO criteria	3.1C, 6.1E (aspiration), 6.9B (narcotic effects), 9.1B

Label elements

Hazard pictogram(s)



Signal word: **Danger**

Hazard statement(s)

H226: Flammable liquid and vapour.

H336: May cause drowsiness or dizziness.

H411: Toxic to aquatic life with long lasting effects.

H304: May be fatal if swallowed and enters airways.

Precautionary statement(s) Prevention

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P271: Use only a well-ventilated area.

P240: Ground and bond container and receiving equipment.

P241: Use explosion-proof electrical/ventilating/lighting/intrinsically safe equipment.

P242: Use non-sparking tools.

P243: Take action to prevent static discharges.

P261: Avoid breathing mist/vapours/spray.

P273: Avoid release to the environment.

P280: Wear protective gloves and protective clothing.

Precautionary statement(s) Response

P301+P310: IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician/first aider.

P331: Do NOT induce vomiting.

Diggers Mineral Turpentine NZ

P370+P378: In case of fire: Use alcohol resistant foam or normal protein foam to extinguish.

P312: Call a POISON CENTER/doctor/physician/first aider/if you feel unwell.

P391: Collect spillage.

P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].

P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

Precautionary statement(s) Storage

P403+P235: Store in a well-ventilated place. Keep cool.

P405: Store locked up.

Precautionary statement(s) Disposal

P501: Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

Not Applicable

SECTION 3 Composition / information on ingredients**Substances**

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
64742-95-6	30-40	<u>naphtha petroleum, light aromatic solvent</u>
64742-82-1.	60-70	<u>naphtha petroleum, heavy, hydrodesulfurised</u>
71-43-2	<0.1	<u>benzene</u>

Legend: 1. Classified by Chemwatch; 2. Classification drawn from CCID EPA NZ; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 4. Classification drawn from C&L; * EU IOELVs available

SECTION 4 First aid measures**Description of first aid measures****Eye Contact**

If this product comes in contact with the eyes:

- Wash out immediately with fresh running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Seek medical attention without delay; if pain persists or recurs seek medical attention.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin Contact

If skin contact occurs:

- Immediately remove all contaminated clothing, including footwear.
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

Inhalation

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Transport to hospital, or doctor, without delay.

Ingestion

- If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.
- **If swallowed do NOT induce vomiting.**
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- Seek medical advice.
- Avoid giving milk or oils.
- Avoid giving alcohol.

Indication of any immediate medical attention and special treatment needed

Any material aspirated during vomiting may produce lung injury. Therefore emesis should not be induced mechanically or pharmacologically. Mechanical means should be used if it is considered necessary to evacuate the stomach contents; these include gastric lavage after endotracheal intubation. If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours.

For petroleum distillates

- In case of ingestion, gastric lavage with activated charcoal can be used promptly to prevent absorption - decontamination (induced emesis or lavage) is controversial and should be considered on the merits of each individual case; of course the usual precautions of an endotracheal tube should be considered prior to lavage, to prevent aspiration.
- Individuals intoxicated by petroleum distillates should be hospitalized immediately, with acute and continuing attention to neurologic and cardiopulmonary function.
- Positive pressure ventilation may be necessary.
- Acute central nervous system signs and symptoms may result from large ingestions of aspiration-induced hypoxia.
- After the initial episode, individuals should be followed for changes in blood variables and the delayed appearance of pulmonary oedema and chemical pneumonitis. Such patients should be followed for several days or weeks for delayed effects, including bone marrow toxicity, hepatic and renal impairment. Individuals with chronic pulmonary disease will be more seriously impaired, and recovery from inhalation exposure may be complicated.
- Gastrointestinal symptoms are usually minor and pathological changes of the liver and kidneys are reported to be uncommon in acute intoxications.
- Chlorinated and non-chlorinated hydrocarbons may sensitize the heart to epinephrine and other circulating catecholamines so that arrhythmias may occur. Careful consideration of this potential adverse effect should precede administration of epinephrine or other cardiac stimulants and the selection of bronchodilators.

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Continued...

SECTION 5 Firefighting measures

Extinguishing media

- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

Special hazards arising from the substrate or mixture

Fire Incompatibility

- Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Advice for firefighters

Fire Fighting

- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- If safe, switch off electrical equipment until vapour fire hazard removed.
- Use water delivered as a fine spray to control fire and cool adjacent area.
- Avoid spraying water onto liquid pools.
- **DO NOT** approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.

Fire/Explosion Hazard

- Liquid and vapour are flammable.
- Moderate fire hazard when exposed to heat or flame.
- Vapour forms an explosive mixture with air.
- Moderate explosion hazard when exposed to heat or flame.
- Vapour may travel a considerable distance to source of ignition.
- Heating may cause expansion or decomposition leading to violent rupture of containers.
- On combustion, may emit toxic fumes of carbon monoxide (CO).

Combustion products include:

carbon monoxide (CO)

carbon dioxide (CO₂)

other pyrolysis products typical of burning organic material.

May emit clouds of acrid smoke

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact with the substance, by using protective equipment.
- Contain and absorb small quantities with vermiculite or other absorbent material.
- Wipe up.
- Collect residues in a flammable waste container.

Major Spills

Chemical Class: aromatic hydrocarbons

For release onto land: recommended sorbents listed in order of priority.

SORBENT TYPE	RANK	APPLICATION	COLLECTION	LIMITATIONS
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LAND SPILL - SMALL

Feathers - pillow	1	throw	pitchfork	DGC, RT
cross-linked polymer - particulate	2	shovel	shovel	R,W,SS
cross-linked polymer- pillow	2	throw	pitchfork	R, DGC, RT
sorbent clay - particulate	3	shovel	shovel	R, I, P,
treated clay/ treated natural organic - particulate	3	shovel	shovel	R, I
wood fibre - pillow	4	throw	pitchfork	R, P, DGC, RT

LAND SPILL - MEDIUM

cross-linked polymer -particulate	1	blower	skiploader	R, W, SS
treated clay/ treated natural organic - particulate	2	blower	skiploader	R, I
sorbent clay - particulate	3	blower	skiploader	R, I, P

polypropylene - particulate	3	blower	skiploader	W, SS, DGC
feathers - pillow	3	throw	skiploader	DGC, RT
expanded mineral - particulate	4	blower	skiploader	R, I, W, P, DGC

Legend

DGC: Not effective where ground cover is dense

R: Not reusable

I: Not incinerable

P: Effectiveness reduced when rainy

RT: Not effective where terrain is rugged

SS: Not for use within environmentally sensitive sites

W: Effectiveness reduced when windy

Reference: Sorbents for Liquid Hazardous Substance Cleanup and Control;

R.W Melvold et al: Pollution Technology Review No. 150: Noyes Data Corporation 1988

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- Consider evacuation (or protect in place).
- No smoking, naked lights or ignition sources.
- Increase ventilation.
- Stop leak if safe to do so.
- Water spray or fog may be used to disperse /absorb vapour.
- Contain spill with sand, earth or vermiculite.
- Use only spark-free shovels and explosion proof equipment.
- Collect recoverable product into labelled containers for recycling.
- Absorb remaining product with sand, earth or vermiculite.
- Collect solid residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- If contamination of drains or waterways occurs, advise emergency services.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage**Precautions for safe handling****Safe handling**

The conductivity of this material may make it a static accumulator.. A liquid is typically considered nonconductive if its conductivity is below 100 pS/m and is considered semi-conductive if its conductivity is below 10 000 pS/m.. Whether a liquid is nonconductive or semi-conductive, the precautions are the same.. A number of factors, for example liquid temperature, presence of contaminants, and anti-static additives can greatly influence the conductivity of a liquid.

Even with proper grounding and bonding, this material can still accumulate an electrostatic charge. If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapour mixtures can occur.

- Containers, even those that have been emptied, may contain explosive vapours.
- Do NOT cut, drill, grind, weld or perform similar operations on or near containers.
- Electrostatic discharge may be generated during pumping - this may result in fire.
- Ensure electrical continuity by bonding and grounding (earthing) all equipment.
- Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (<=1 m/sec until fill pipe submerged to twice its diameter, then <= 7 m/sec).
- Avoid splash filling.
- Do NOT use compressed air for filling discharging or handling operations.
- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of overexposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- **DO NOT enter confined spaces until atmosphere has been checked.**
- Avoid smoking, naked lights or ignition sources.
- Avoid generation of static electricity.
- **DO NOT use plastic buckets.**
- Earth all lines and equipment.
- Use spark-free tools when handling.
- Avoid contact with incompatible materials.
- **When handling, DO NOT eat, drink or smoke.**
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately.
- Use good occupational work practice.
- Observe manufacturer's storage and handling recommendations contained within this SDS.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.

Other information

- Store in original containers in approved flammable liquid storage area.
- Store away from incompatible materials in a cool, dry, well-ventilated area.
- **DO NOT store in pits, depressions, basements or areas where vapours may be trapped.**
- No smoking, naked lights, heat or ignition sources.
- Storage areas should be clearly identified, well illuminated, clear of obstruction and accessible only to trained and authorised personnel - adequate security must be provided so that unauthorised personnel do not have access.
- Store according to applicable regulations for flammable materials for storage tanks, containers, piping, buildings, rooms, cabinets, allowable quantities and minimum storage distances.
- Use non-sparking ventilation systems, approved explosion proof equipment and intrinsically safe electrical systems.
- Have appropriate extinguishing capability in storage area (e.g. portable fire extinguishers - dry chemical, foam or carbon dioxide) and flammable gas detectors.
- Keep adsorbents for leaks and spills readily available.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storage and handling recommendations contained within this SDS.

In addition, for tank storages (where appropriate):

- Store in grounded, properly designed and approved vessels and away from incompatible materials.
- For bulk storages, consider use of floating roof or nitrogen blanketed vessels; where venting to atmosphere is possible, equip storage tank vents with flame arrestors; inspect tank vents during winter conditions for vapour/ ice build-up.
- Storage tanks should be above ground and diked to hold entire contents.

Conditions for safe storage, including any incompatibilities

Suitable container

- Packing as supplied by manufacturer.
- Plastic containers may only be used if approved for flammable liquid.
- Check that containers are clearly labelled and free from leaks.
- For low viscosity materials (i) : Drums and jerry cans must be of the non-removable head type. (ii) : Where a can is to be used as an inner package, the can must have a screwed enclosure.
- For materials with a viscosity of at least 2680 cSt. (23 deg. C)
- For manufactured product having a viscosity of at least 250 cSt. (23 deg. C)
- Manufactured product that requires stirring before use and having a viscosity of at least 20 cSt (25 deg. C): (i) Removable head packaging; (ii) Cans with friction closures and (iii) low pressure tubes and cartridges may be used.
- Where combination packages are used, and the inner packages are of glass, there must be sufficient inert cushioning material in contact with inner and outer packages
- In addition, where inner packagings are glass and contain liquids of packing group I there must be sufficient inert absorbent to absorb any spillage, unless the outer packaging is a close fitting moulded plastic box and the substances are not incompatible with the plastic.

Storage incompatibility

Xylenes:

- may ignite or explode in contact with strong oxidisers, 1,3-dichloro-5,5-dimethylhydantoin, uranium fluoride
- attack some plastics, rubber and coatings
- may generate electrostatic charges on flow or agitation due to low conductivity.
- Vigorous reactions, sometimes amounting to explosions, can result from the contact between aromatic rings and strong oxidising agents.
- Aromatics can react exothermically with bases and with diazo compounds.

For alkyl aromatics:

The alkyl side chain of aromatic rings can undergo oxidation by several mechanisms. The most common and dominant one is the attack by oxidation at benzylic carbon as the intermediate formed is stabilised by resonance structure of the ring.

- Following reaction with oxygen and under the influence of sunlight, a hydroperoxide at the alpha-position to the aromatic ring, is the primary oxidation product formed (provided a hydrogen atom is initially available at this position) - this product is often short-lived but may be stable dependent on the nature of the aromatic substitution; a secondary C-H bond is more easily attacked than a primary C-H bond whilst a tertiary C-H bond is even more susceptible to attack by oxygen
- Monoalkylbenzenes may subsequently form monocarboxylic acids; alkyl naphthalenes mainly produce the corresponding naphthalene carboxylic acids.
- Oxidation in the presence of transition metal salts not only accelerates but also selectively decomposes the hydroperoxides.
- Hock-rearrangement by the influence of strong acids converts the hydroperoxides to hemiacetals. Peresters formed from the hydroperoxides undergo Criegee rearrangement easily.
- Alkali metals accelerate the oxidation while CO₂ as co-oxidant enhances the selectivity.
- Microwave conditions give improved yields of the oxidation products.
- Photo-oxidation products may occur following reaction with hydroxyl radicals and NO_x - these may be components of photochemical smogs.

Oxidation of Alkylaromatics: T.S.S Rao and Shubhra Awasthi: E-Journal of Chemistry Vol 4, No. 1, pp 1-13 January 2007

Low molecular weight alkanes:

- May react violently with strong oxidisers, chlorine, chlorine dioxide, dioxygenyl tetrafluoroborate.
- May react with oxidising materials, nickel carbonyl in the presence of oxygen, heat.
- Are incompatible with nitronium tetrafluoroborate(1-), halogens and interhalogens
- may generate electrostatic charges, due to low conductivity, on flow or agitation.
- Avoid flame and ignition sources

Redox reactions of alkanes, in particular with oxygen and the halogens, are possible as the carbon atoms are in a strongly reduced condition. Reaction with oxygen (if present in sufficient quantity to satisfy the reaction stoichiometry) leads to combustion without any smoke, producing carbon dioxide and water. Free radical halogenation reactions occur with halogens, leading to the production of haloalkanes. In addition, alkanes have been shown to interact with, and bind to, certain transition metal complexes

Interaction between chlorine and ethane over activated carbon at 350 deg C has caused explosions, but added carbon dioxide reduces the risk. The violent interaction of liquid chlorine injected into ethane at 80 deg C/10 bar becomes very violent if ethylene is also present A mixture prepared at -196 deg C with either methane or ethane exploded when the temp was raised to -78 deg C. Addition of nickel carbonyl to an n-butane-oxygen mixture causes an explosion at 20-40 deg C.

Alkanes will react with steam in the presence of a nickel catalyst to give hydrogen.

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
New Zealand Workplace Exposure Standards (WES)	naphtha petroleum, heavy, hydrodesulfurised	White spirits (Stoddard solvent)	100 ppm / 525 mg/m ³	Not Available	Not Available	Not Available
New Zealand Workplace Exposure Standards (WES)	benzene	Benzene	1 ppm	2.5 ppm	Not Available	(skin)-Skin absorption 6.7A-Confirmed carcinogen

Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
naphtha petroleum, light aromatic solvent	E	≤ 0.1 ppm
Notes:	Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.	

MATERIAL DATA

IFRA Prohibited Fragrance Substance

The International Fragrance Association (IFRA) Standards form the basis for the globally accepted and recognized risk management system for the safe use of fragrance ingredients and are part of the IFRA Code of Practice. This is the self-regulating system of the industry, based on risk assessments carried out by an independent Expert Panel

WARNING: This substance is classified by the NOHSC as Category 2 Probable Human Carcinogen

These exposure guidelines have been derived from a screening level of risk assessment and should not be construed as unequivocally safe limits. ORGS represent an 8-hour time-weighted average unless specified otherwise.

CR = Cancer Risk/10000; UF = Uncertainty factor:

TLV believed to be adequate to protect reproductive health:

LOD: Limit of detection

Toxic endpoints have also been identified as:

D = Developmental; R = Reproductive; TC = Transplacental carcinogen

Jankovic J., Drake F.: A Screening Method for Occupational Reproductive

American Industrial Hygiene Association Journal 57: 641-649 (1996)

for benzene

Odour Threshold Value: 34 ppm (detection), 97 ppm (recognition)

NOTE: Detector tubes for benzene, measuring in excess of 0.5 ppm, are commercially available. The relative quality of epidemiological data and quantitative health risk assessments related to documented and theoretical leukaemic deaths constitute the basis of the TLV-recommendation.

One study [Dow Chemical] demonstrates a significant fourfold increase in myelogenous leukaemia for workers exposed to average benzene concentrations of about 5 ppm for an average of 9 years and that 2 out of four individuals in the study who died from leukaemia were characterised as having been exposed to average benzene levels below 2 ppm. Based on such findings the estimated risk of leukaemia in workers exposed at daily benzene concentrations of 10 ppm for 40 years is 155 times that of unexposed workers; at 1 ppm the risk falls to 1.7 times whilst at 0.1 ppm the risk is about the same in the two groups. A revision of the TLV-TWA to 0.1 ppm was proposed in 1990 but this has been revised upwards as result of industry initiatives.

Typical toxicities displayed following inhalation:

- At 25 ppm (8 hours): no effect
- 50-150 ppm: signs of intoxication within 5 hours
- 500-1500 ppm: signs of intoxication within 1 hour
- 7500 ppm: severe intoxication within 30-60 minutes
- 20000 ppm: fatal within 5-10 minutes

Some jurisdictions require that health surveillance be conducted on occupationally exposed workers. Some surveillance should emphasise (i) demography, occupational and medical history and health advice (ii) baseline blood sample for haematological profile (iii) records of personal exposure.

For white spirit:

Low and high odour thresholds of 5.25 and 157.5 mg/m³, respectively, were considered to provide a rather useful index of odour as a warning property.

The TLV-TWA is calculated from data on the toxicities of the major ingredients and is intended to minimise the potential for irritative and narcotic effects, polyneuropathy and kidney damage produced by vapours.

The NIOSH (USA) REL-TWA of 60 ppm is the same for all refined petroleum solvents. NIOSH published an occupational "action level" of 350 mg/m³ for exposure to Stoddard solvent, assuming a 10-hour work shift and a 40-hour work-week. The NIOSH-REL ceiling of 1800 mg/m³ was established to protect workers from short-term effects that might produce vertigo or other adverse effects which might increase the risk of occupational accidents. Combined (gross) percutaneous absorption and inhalation exposure (at concentrations associated with nausea) are thought, by some, to be responsible for the development of frank hepatic toxicity and jaundice.

Odour Safety Factor (OSF)

OSF=0.042 (white spirit)

For trimethyl benzene as mixed isomers (of unstated proportions)

Odour Threshold Value: 2.4 ppm (detection)

Use care in interpreting effects as a single isomer or other isomer mix. Trimethylbenzene is an eye, nose and respiratory irritant. High concentrations cause central nervous system depression. Exposed workers show CNS changes, asthmatic bronchitis and blood dyscrasias at 60 ppm. The TLV-TWA is thought to be protective against the significant risk of CNS excitation, asthmatic bronchitis and blood dyscrasias associated with exposures above the limit.

Odour Safety Factor (OSF)

OSF=10 (1,2,4-TRIMETHYLBENZENE)

Exposed individuals are **NOT** reasonably expected to be warned, by smell, that the Exposure Standard is being exceeded.

Odour Safety Factor (OSF) is determined to fall into either Class C, D or E.

The Odour Safety Factor (OSF) is defined as:

OSF= Exposure Standard (TWA) ppm/ Odour Threshold Value (OTV) ppm

Classification into classes follows:

ClassOSF Description

- | | | |
|---|----------|--|
| A | 550 | Over 90% of exposed individuals are aware by smell that the Exposure Standard (TLV-TWA for example) is being reached, even when distracted by working activities |
| B | 26-550As | "A" for 50-90% of persons being distracted |
| C | 1-26 | As "A" for less than 50% of persons being distracted |
| D | 0.18-1 | 10-50% of persons aware of being tested perceive by smell that the Exposure Standard is being reached |
| E | <0.18 | As "D" for less than 10% of persons aware of being tested |

NOTE P: The classification as a carcinogen need not apply if it can be shown that the substance contains less than 0.01% w/w benzene (EINECS No 200-753-7). Note E shall also apply when the substance is classified as a carcinogen. This note applies only to certain complex oil-derived substances in Annex VI.

European Union (EU) List of harmonised classification and labelling hazardous substances, Table 3.1, Annex VI, Regulation (EC) No 1272/2008 (CLP) - up to the latest ATP

NOTE E: Substances with specific effects on human health that are classified as carcinogenic, mutagenic and/ or toxic for reproduction in categories 1 or 2 are ascribed Note E if they are classified as very toxic (T+), toxic (T) or harmful (Xn). For these substances the risk phrases R20, R21, R22, R23, R24, R25, R26, R27, R28, R39, R68, R48 and R65 and all combinations of these risk phrases shall be preceded by the word "Also".

R45-23: May cause cancer. Also toxic by inhalation

This note applies only to certain complex oil-derived substances in Annex VI.

European Union (EU) List of harmonised classification and labelling hazardous substances, Table 3.1, Annex VI, Regulation (EC) No 1272/2008 (CLP) - up to the latest ATP

Exposure controls

Appropriate engineering controls

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.

Employers may need to use multiple types of controls to prevent employee overexposure.

- Employees exposed to confirmed human carcinogens should be authorized to do so by the employer, and work in a regulated area.
- Work should be undertaken in an isolated system such as a "glove-box". Employees should wash their hands and arms upon completion of the assigned task and before engaging in other activities not associated with the isolated system.
- Within regulated areas, the carcinogen should be stored in sealed containers, or enclosed in a closed system, including piping systems, with any sample ports or openings closed while the carcinogens are contained within.
- Open-vessel systems are prohibited.
- Each operation should be provided with continuous local exhaust ventilation so that air movement is always from ordinary work areas to the operation.

Continued...

- Exhaust air should not be discharged to regulated areas, non-regulated areas or the external environment unless decontaminated. Clean make-up air should be introduced in sufficient volume to maintain correct operation of the local exhaust system.
- For maintenance and decontamination activities, authorized employees entering the area should be provided with and required to wear clean, impervious garments, including gloves, boots and continuous-air supplied hood. Prior to removing protective garments the employee should undergo decontamination and be required to shower upon removal of the garments and hood.
- Except for outdoor systems, regulated areas should be maintained under negative pressure (with respect to non-regulated areas).
- Local exhaust ventilation requires make-up air be supplied in equal volumes to replaced air.
- Laboratory hoods must be designed and maintained so as to draw air inward at an average linear face velocity of 0.76 m/sec with a minimum of 0.64 m/sec. Design and construction of the fume hood requires that insertion of any portion of the employees body, other than hands and arms, be disallowed.

Personal protection



Eye and face protection

- Safety glasses with side shields.
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]

Skin protection

See Hand protection below

Hands/feet protection

- Wear chemical protective gloves, e.g. PVC.
- Wear safety footwear or safety gumboots, e.g. Rubber

Body protection

See Other protection below

Other protection

- Employees working with confirmed human carcinogens should be provided with, and be required to wear, clean, full body protective clothing (smocks, coveralls, or long-sleeved shirt and pants), shoe covers and gloves prior to entering the regulated area. [AS/NZS ISO 6529:2006 or national equivalent]
- Employees engaged in handling operations involving carcinogens should be provided with, and required to wear and use half-face filter-type respirators with filters for dusts, mists and fumes, or air purifying canisters or cartridges. A respirator affording higher levels of protection may be substituted. [AS/NZS 1715 or national equivalent]
- Emergency deluge showers and eyewash fountains, supplied with potable water, should be located near, within sight of, and on the same level with locations where direct exposure is likely.
- Prior to each exit from an area containing confirmed human carcinogens, employees should be required to remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to place used clothing and equipment in impervious containers at the point of exit for purposes of decontamination or disposal. The contents of such impervious containers must be identified with suitable labels. For maintenance and decontamination activities, authorized employees entering the area should be provided with and required to wear clean, impervious garments, including gloves, boots and continuous-air supplied hood.
- Prior to removing protective garments the employee should undergo decontamination and be required to shower upon removal of the garments and hood.
- Overalls.
- PVC Apron.
- PVC protective suit may be required if exposure severe.
- Eyewash unit.
- Ensure there is ready access to a safety shower.
- Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity.
- For large scale or continuous use wear tight-weave non-static clothing (no metallic fasteners, cuffs or pockets).
- Non sparking safety or conductive footwear should be considered. Conductive footwear describes a boot or shoe with a sole made from a conductive compound chemically bound to the bottom components, for permanent control to electrically ground the foot and shall dissipate static electricity from the body to reduce the possibility of ignition of volatile compounds. Electrical resistance must range between 0 to 500,000 ohms. Conductive shoes should be stored in lockers close to the room in which they are worn. Personnel who have been issued conductive footwear should not wear them from their place of work to their homes and return.

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance

:

Colourless/Pale yellow liquid

Physical state	Liquid	Relative density (Water = 1)	0.780-8.20
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	300
pH (as supplied)	Not Available	Decomposition temperature (°C)	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	148-200	Molecular weight (g/mol)	Not Available
Flash point (°C)	31	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available

Diggers Mineral Turpentine NZ

Flammability	Flammable.	Oxidising properties	Not Available
Upper Explosive Limit (%)	7.00	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	<1	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	0.5	Gas group	Not Available
Solubility in water	Immiscible	pH as a solution (Not Available%)	Not Available
Vapour density (Air = 1)	4.35	VOC g/L	Not Available

SECTION 10 Stability and reactivity

Reactivity:

See section 7

Chemical stability :

- Unstable in the presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

Possibility of hazardous reactions :

See section 7

Conditions to avoid :

See section 7

Incompatible materials :

See section 7

Hazardous decomposition products :

See section 5

SECTION 11 Toxicological information

Information on toxicological effects**Inhaled**

Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system, in a substantial number of individuals, following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage. The repair process, which initially evolved to protect mammalian lungs from foreign matter and antigens, may however, produce further lung damage resulting in the impairment of gas exchange, the primary function of the lungs. Respiratory tract irritation often results in an inflammatory response involving the recruitment and activation of many cell types, mainly derived from the vascular system. Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by narcosis, reduced alertness, loss of reflexes, lack of coordination and vertigo. Inhalation hazard is increased at higher temperatures.

High inhaled concentrations of mixed hydrocarbons may produce narcosis characterised by nausea, vomiting and lightheadedness. Inhalation of aerosols may produce severe pulmonary oedema, pneumonitis and pulmonary haemorrhage. Inhalation of petroleum hydrocarbons consisting substantially of low molecular weight species (typically C2-C12) may produce irritation of mucous membranes, incoordination, giddiness, nausea, vertigo, confusion, headache, appetite loss, drowsiness, tremors and anaesthetic stupor. Massive exposures may produce central nervous system depression with sudden collapse and deep coma; fatalities have been recorded. Irritation of the brain and/or apnoeic anoxia may produce convulsions. Although recovery following overexposure is generally complete, cerebral micro-haemorrhage of focal post-inflammatory scarring may produce epileptiform seizures some months after the exposure. Pulmonary episodes may include chemical pneumonitis with oedema and haemorrhage. The lighter hydrocarbons may produce kidney and neurotoxic effects. Pulmonary irritancy increases with carbon chain length for paraffins and olefins. Alkenes produce pulmonary oedema at high concentrations. Liquid paraffins may produce anaesthesia and depressant actions leading to weakness, dizziness, slow and shallow respiration, unconsciousness, convulsions and death. C5-7 paraffins may also produce polyneuropathy. Aromatic hydrocarbons accumulate in lipid rich tissues (typically the brain, spinal cord and peripheral nerves) and may produce functional impairment manifested by nonspecific symptoms such as nausea, weakness, fatigue and vertigo; severe exposures may produce inebriation or unconsciousness. Many of the petroleum hydrocarbons are cardiac sensitisers and may cause ventricular fibrillations.

Central nervous system (CNS) depression may include nonspecific discomfort, symptoms of giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech and may progress to unconsciousness. Serious poisonings may result in respiratory depression and may be fatal. A significant number of individuals exposed to mixed trimethylbenzenes complained of nervousness, tension, anxiety and asthmatic bronchitis. Peripheral blood showed a tendency to hypochromic anaemia and a deviation from normal in coagulability of the blood. Hydrocarbon concentrations ranged from 10 to 60 ppm. Contamination of the mixture with benzene may have been responsible for the blood dyscrasias.

High concentrations of mesitylene vapour (5000 to 9000 ppm) caused central nervous system depression in mice. Similar exposures of pseudocumene also produced evidence of CNS involvement.

Acute effects from inhalation of high concentrations of vapour are pulmonary irritation, including coughing, with nausea; central nervous system depression - characterised by headache and dizziness, increased reaction time, fatigue and loss of co-ordination

Exposure to white spirit, in a controlled inhalation study using volunteers either at rest or during exercise, (1000 or 2500 mg/m3 for 30 minutes) produced a linear relationship between alveolar and arterial concentrations of the individual solvent components. Pulmonary absorption of the aliphatics ranged from 46-59%, whilst that of aromatic ranged from 58-70%. Although systemic absorption was greater during exercise, the proportion of circulating aliphatic to aromatic components decreased with increased activity. Exposure to 2500 - 5000 mg/m3 produces nausea and vertigo.

The acute toxicity of inhaled alkylbenzene is best described by central nervous system depression. These compounds may also act as general anaesthetics. Whole body symptoms of poisoning include light-headedness, nervousness, apprehension, a feeling of well-being, confusion, dizziness, drowsiness, ringing in the ears, blurred or double vision, vomiting and sensations of heat, cold or numbness, twitching, tremors, convulsions, unconsciousness, depression of breathing, and arrest. Heart stoppage may result from cardiovascular collapse. A slow heart rate and low blood pressure may also occur.

Alkylbenzenes are not generally toxic except at high levels of exposure. Their breakdown products have low toxicity and are easily eliminated from the body.

Ingestion

Swallowing of the liquid may cause aspiration of vomit into the lungs with the risk of haemorrhaging, pulmonary oedema, progressing to chemical pneumonitis; serious consequences may result.

Signs and symptoms of chemical (aspiration) pneumonitis may include coughing, gasping, choking, burning of the mouth, difficult breathing, and bluish coloured skin (cyanosis).

The material has **NOT** been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. The material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health). Gastrointestinal tract discomfort may produce nausea and vomiting. In an occupational setting however, ingestion of insignificant quantities is not thought to be cause for concern.

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Ingestion of petroleum hydrocarbons may produce irritation of the pharynx, oesophagus, stomach and small intestine with oedema and mucosal ulceration resulting; symptoms include a burning sensation in the mouth and throat. Large amounts may produce narcosis with nausea and vomiting, weakness or dizziness, slow and shallow respiration, swelling of the abdomen, unconsciousness and convulsions. Myocardial injury may produce arrhythmias, ventricular fibrillation and electrocardiographic changes. Central nervous system depression may also occur. Light aromatic hydrocarbons produce a warm, sharp, tingling sensation on contact with taste buds and may anaesthetise the tongue. Aspiration into the lungs may produce coughing, gagging and a chemical pneumonitis with pulmonary oedema and haemorrhage.

Skin Contact

Repeated exposure may cause skin cracking, flaking or drying following normal handling and use.

Open cuts, abraded or irritated skin should not be exposed to this material

Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

The liquid may be miscible with fats or oils and may degrease the skin, producing a skin reaction described as non-allergic contact dermatitis. The material is unlikely to produce an irritant dermatitis as described in EC Directives.

The material may accentuate any pre-existing dermatitis condition

Skin contact with the material may be harmful; systemic effects may result following absorption.

Aromatic hydrocarbons may produce skin irritation, vasodilation with erythema and changes in endothelial cell permeability. Systemic intoxication, resulting from contact with the light aromatics, is unlikely due to the slow rate of permeation. Branching of the side chain appears to increase percutaneous absorption.

The material produces moderate skin irritation; evidence exists, or practical experience predicts, that the material either

- produces moderate inflammation of the skin in a substantial number of individuals following direct contact, and/or
- produces significant, but moderate, inflammation when applied to the healthy intact skin of animals (for up to four hours), such inflammation being present twenty-four hours or more after the end of the exposure period.

Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis.

Eye

Petroleum hydrocarbons may produce pain after direct contact with the eyes. Slight, but transient disturbances of the corneal epithelium may also result. The aromatic fraction may produce irritation and lachrymation.

The liquid produces a high level of eye discomfort and is capable of causing pain and severe conjunctivitis. Corneal injury may develop, with possible permanent impairment of vision, if not promptly and adequately treated.

Evidence exists, or practical experience predicts, that the material may cause severe eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals. Eye contact may cause significant inflammation with pain. Corneal injury may occur; permanent impairment of vision may result unless treatment is prompt and adequate. Repeated or prolonged exposure to irritants may cause inflammation characterised by a temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur.

Chronic

Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.

On the basis, primarily, of animal experiments, the material may be regarded as carcinogenic to humans. There is sufficient evidence to provide a strong presumption that human exposure to the material may result in cancer on the basis of:

- appropriate long-term animal studies
- other relevant information

There is sufficient evidence to provide a strong presumption that human exposure to the material may produce heritable genetic damage.

There is sufficient evidence to provide a strong presumption that human exposure to the material may result in the development of heritable genetic damage, generally on the basis of

- appropriate animal studies,
- other relevant information

Prolonged or repeated skin contact may cause drying with cracking, irritation and possible dermatitis following.

Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.

Repeated or prolonged exposure to mixed hydrocarbons may produce narcosis with dizziness, weakness, irritability, concentration and/or memory loss, tremor in the fingers and tongue, vertigo, olfactory disorders, constriction of visual field, paraesthesias of the extremities, weight loss and anaemia and degenerative changes in the liver and kidney. Chronic exposure by petroleum workers, to the lighter hydrocarbons, has been associated with visual disturbances, damage to the central nervous system, peripheral neuropathies (including numbness and paraesthesias), psychological and neurophysiological deficits, bone marrow toxicities (including hypoplasia possibly due to benzene) and hepatic and renal involvement. Chronic dermal exposure to petroleum hydrocarbons may result in defatting which produces localised dermatoses. Surface cracking and erosion may also increase susceptibility to infection by microorganisms. One epidemiological study of petroleum refinery workers has reported elevations in standard mortality ratios for skin cancer along with a dose-response relationship indicating an association between routine workplace exposure to petroleum or one of its constituents and skin cancer, particularly melanoma. Other studies have been unable to confirm this finding.

Hydrocarbon solvents are liquid hydrocarbon fractions derived from petroleum processing streams, containing only carbon and hydrogen atoms, with carbon numbers ranging from approximately C5-C20 and boiling between approximately 35-370 deg C. Many of the hydrocarbon solvents have complex and variable compositions with constituents of 4 types, alkanes (normal paraffins, isoparaffins, and cycloparaffins) and aromatics (primarily alkylated one- and two-ring species). Despite the compositional complexity, most hydrocarbon solvent constituents have similar toxicological properties, and the overall toxicological hazards can be characterized in generic terms. Hydrocarbon solvents can cause chemical pneumonitis if aspirated into the lung, and those that are volatile can cause acute CNS effects and/or ocular and respiratory irritation at exposure levels exceeding occupational recommendations. Otherwise, there are few toxicologically important effects. The exceptions, n-hexane and naphthalene, have unique toxicological properties

Animal studies:

No deaths or treatment related signs of toxicity were observed in rats exposed to light alkylate naphtha (paraffinic hydrocarbons) at concentrations of 668, 2220 and 6646 ppm for 6 hrs/day, 5 days/wk for 13 weeks. Increased liver weights and kidney toxicity (male rats) was observed in high dose animals. Exposure to pregnant rats at concentrations of 137, 3425 and 6850 ppm did not adversely affect reproduction or cause maternal or foetal toxicity. Lifetime skin painting studies in mice with similar naphthas have shown weak or no carcinogenic activity following prolonged and repeated exposure. Similar

naphthas/distillates, when tested at nonirritating dose levels, did not show any significant carcinogenic activity indicating that this tumorigenic response is likely related to chronic irritation and not to dose. The mutagenic potential of naphthas has been reported to be largely negative in a variety of mutagenicity tests. The exact relationship between these results and human health is not known. Some components of this product have been shown to produce a species specific, sex hormonal dependent kidney lesion in male rats from repeated oral or inhalation exposure. Subsequent research has shown that the kidney damage develops via the formation of an alpha-2u-globulin, a mechanism unique to the male rat. Humans do not form alpha-2u-globulin, therefore, the kidney effects resulting from this mechanism are not relevant in human.

Follicular dermatitis may develop rapidly on repeated immersion of the hands and forearms in white spirits. A Belgian report, produced in 1958, described sub-chronic toxicity amongst workers exposed to white spirit (83% paraffins, 17% aromatics) over a 4 month period. These workers complained of nausea and vomiting and one developed aplastic anaemia; bone marrow depression was confirmed. This employee died several months later as a result of septicaemia. Bone marrow depression, associated with human exposure, might be explained by the presence of myelotoxic compounds, the most notable being benzene.

Chronic exposure to benzene may cause headache, fatigue, loss of appetite and lassitude with incipient blood effects including anaemia and blood changes. Benzene is a myelotoxicant known to suppress bone-marrow cell proliferation and to induce haematologic disorders in humans and animals. Signs of benzene-induced aplastic anaemia include suppression of leukocytes (leukopenia), red cells (anaemia), platelets (thrombocytopenia) or all three cell types (pancytopenia). Classic symptoms include weakness, purpura, and haemorrhage. The most significant toxic effect is insidious and often reversible injury to the blood forming tissue. Leukaemia may develop. Occupational exposures have shown a relationship between exposure to benzene and production of myelogenous leukaemia. There may also be a relationship between benzene exposure and the production of lymphoma and multiple myeloma. In chronic exposure, workers exhibit signs of central nervous system lesions and impairment of hearing.

Benzene haemotoxicity and leukaemogenicity involve metabolism, growth factor regulation, oxidative stress, DNA damage, cell regulation, and apoptosis. (Yoon et al Environmental

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Health Perspectives, 111, pp 1411-1420, 2003)

Diggers Mineral Turpentine NZ	TOXICITY	IRRITATION
	Not Available	Not Available
naphtha petroleum, light aromatic solvent	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >1900 mg/kg ^[1]	Eye: no adverse effect observed (not irritating) ^[1]
	Inhalation(Rat) LC50; >4.42 mg/L4h ^[1]	Skin: adverse effect observed (irritating) ^[1]
	Oral (Rat) LD50; >4500 mg/kg ^[1]	
naphtha petroleum, heavy, hydrodesulfurised	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >1900 mg/kg ^[1]	Eye: no adverse effect observed (not irritating) ^[1]
	Inhalation(Rat) LC50; >1.58 mg/L4h ^[1]	Skin: adverse effect observed (irritating) ^[1]
	Oral (Rat) LD50; >4500 mg/kg ^[1]	Skin: no adverse effect observed (not irritating) ^[1]
benzene	TOXICITY	IRRITATION
	dermal (mouse) LD50: 48 mg/kg ^[2]	Eye (rabbit): 2 mg/24h - SEVERE
	Inhalation(Rat) LC50; 43.767 mg/L4h ^[1]	Eye: adverse effect observed (irritating) ^[1]
	Oral (Rat) LD50; 930 mg/kg ^[2]	SKIN (rabbit):20 mg/24h - moderate
		Skin: adverse effect observed (irritating) ^[1]

Legend: 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

NAPHTHA PETROLEUM, LIGHT AROMATIC SOLVENT

* [Devoe] .

NAPHTHA PETROLEUM, HEAVY, HYDRODESULFURISED

No significant acute toxicological data identified in literature search.

BENZENE

Inhalation (man) TClO: 150 ppm/1y - I

The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling the epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.

WARNING: This substance has been classified by the IARC as Group 1: **CARCINOGENIC TO HUMANS.**

Diggers Mineral Turpentine NZ & NAPHTHA PETROLEUM, LIGHT AROMATIC SOLVENT

Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production.

Diggers Mineral Turpentine NZ & BENZENE

Data demonstrate that during inhalation exposure, aromatic hydrocarbons undergo substantial partitioning into adipose tissues. Following cessation of exposure, the level of aromatic hydrocarbons in body fats rapidly declines. Thus, the aromatic hydrocarbons are unlikely to bioaccumulate in the body. Selective partitioning of the aromatic hydrocarbons into the non-adipose tissues is unlikely. No data is available regarding distribution following dermal absorption. However, distribution following this route of exposure is likely to resemble the pattern occurring with inhalation exposure.

Aromatics hydrocarbons may undergo several different Phase I dealkylation, hydroxylation and oxidation reactions which may or may not be followed by Phase II conjugation to glycine, sulfation or glucuronidation. However, the major predominant biotransformation pathway is typical of that of the alkylbenzenes and consists of: (1) oxidation of one of the alkyl groups to an alcohol moiety; (2) oxidation of the hydroxyl group to a carboxylic acid; (3) the carboxylic acid is then conjugated with glycine to form a hippuric acid. The minor metabolites can be expected to consist of a complex mixture of isomeric triphenols, the sulfate and glucuronide conjugates of dimethylbenzyl alcohols, dimethylbenzoic acids and dimethylhippuric acids. Consistent with the low propensity for bioaccumulation of aromatic hydrocarbons, these substances are likely to be significant inducers of their own metabolism.

The predominant route of excretion of aromatic hydrocarbons following inhalation exposure involves either exhalation of the unmetabolized parent compound, or urinary excretion of its metabolites. When oral administration occurs, there is little exhalation of unmetabolized these hydrocarbons, presumably due to the first pass effect in the liver. Under these circumstances, urinary excretion of metabolites is the dominant route of excretion.

Diggers Mineral Turpentine NZ & NAPHTHA PETROLEUM, HEAVY, HYDRODESULFURISED

Studies indicate that normal, branched and cyclic paraffins are absorbed from the mammalian gastrointestinal tract and that the absorption of n-paraffins is inversely proportional to the carbon chain length, with little absorption above C30. With respect to the carbon chain lengths likely to be present in mineral oil, n-paraffins may be absorbed to a greater extent than iso- or cyclo-paraffins.

The major classes of hydrocarbons have been shown to be well absorbed by the gastrointestinal tract in various species. In many cases, the hydrophobic hydrocarbons are ingested in association with dietary lipids. The dependence of hydrocarbon absorption on concomitant triglyceride digestion and absorption, is known as the "hydrocarbon continuum hypothesis", and asserts that a series of solubilising phases in the intestinal lumen, created by dietary triglycerides and their digestion products, afford hydrocarbons a route to the lipid phase of the intestinal absorptive cell (enterocyte) membrane. While some hydrocarbons may traverse the mucosal epithelium unmetabolised and appear as solutes in lipoprotein particles in intestinal lymph, there is evidence that most hydrocarbons partially separate from nutrient lipids and undergo metabolic transformation in the enterocyte. The enterocyte may play a major role in determining the proportion of an absorbed hydrocarbon that, by escaping initial biotransformation, becomes available for deposition in its unchanged form in peripheral tissues such as adipose tissue, or in the liver.

For petroleum: This product contains benzene, which can cause acute myeloid leukaemia, and n-hexane, which can be metabolized to compounds which are toxic to the nervous system. This product contains toluene, and animal studies suggest high concentrations of toluene lead to hearing loss. This product contains ethyl benzene and naphthalene, from which animal testing shows evidence of tumour formation.

Cancer-causing potential: Animal testing shows inhaling petroleum causes tumours of the liver and kidney; these are however not considered to be relevant in humans.

Mutation-causing potential: Most studies involving gasoline have returned negative results regarding the potential to cause mutations, including all recent studies in living human subjects (such as in petrol service station attendants).

Reproductive toxicity: Animal studies show that high concentrations of toluene (>0.1%) can cause developmental effects such as lower birth weight and developmental toxicity to the nervous system of the foetus. Other studies show no adverse effects on the foetus.

Continued...

Diggers Mineral Turpentine NZ

Human effects: Prolonged or repeated contact may cause defatting of the skin which can lead to skin inflammation and may make the skin more susceptible to irritation and penetration by other materials.

Animal testing shows that exposure to gasoline over a lifetime can cause kidney cancer, but the relevance in humans is questionable.

Diggers Mineral Turpentine NZ & NAPHTHA PETROLEUM, LIGHT AROMATIC SOLVENT & NAPHTHA PETROLEUM, HEAVY, HYDRODESULFURISED

For trimethylbenzenes:

Absorption of 1,2,4-trimethylbenzene occurs after oral, inhalation, or dermal exposure. Occupationally, inhalation and dermal exposures are the most important routes of absorption although systemic intoxication from dermal absorption is not likely to occur due to the dermal irritation caused by the chemical prompting quick removal. Following oral administration of the chemical to rats, 62.6% of the dose was recovered as urinary metabolites indicating substantial absorption. 1,2,4-Trimethylbenzene is lipophilic and may accumulate in fat and fatty tissues. In the blood stream, approximately 85% of the chemical is bound to red blood cells. Metabolism occurs by side-chain oxidation to form alcohols and carboxylic acids which are then conjugated with glucuronic acid, glycine, or sulfates for urinary excretion. After a single oral dose to rats of 1200 mg/kg, urinary metabolites consisted of approximately 43.2% glycine, 6.6% glucuronic, and 12.9% sulfuric acid conjugates. The two principle metabolites excreted by rabbits after oral administration of 438 mg/kg/day for 5 days were 2,4-dimethylbenzoic acid and 3,4-dimethylhippuric acid. The major routes of excretion of 1,2,4-trimethylbenzene are exhalation of parent compound and elimination of urinary metabolites. Half-times for urinary metabolites were reported as 9.5 hours for glycine, 22.9 hours for glucuronide, and 37.6 hours for sulfuric acid conjugates.

Acute Toxicity Direct contact with liquid 1,2,4-trimethylbenzene is irritating to the skin and breathing the vapor is irritating to the respiratory tract causing pneumonitis. Breathing high concentrations of the chemical vapor causes headache, fatigue, and drowsiness. In humans liquid 1,2,4-trimethylbenzene is irritating to the skin and inhalation of vapor causes chemical pneumonitis. High concentrations of vapor (5000-9000 ppm) cause headache, fatigue, and drowsiness. The concentration of 5000 ppm is roughly equivalent to a total of 221 mg/kg assuming a 30 minute exposure period (see end note 1). 2. Animals - Mice exposed to 8130-9140 ppm 1,2,4-trimethylbenzene (no duration given) had loss of righting response and loss of reflexes. Direct dermal contact with the chemical (no species given) causes vasodilation, erythema, and irritation (U.S. EPA). Seven of 10 rats died after an oral dose of 2.5 mL of a mixture of trimethylbenzenes in olive oil (average dose approximately 4.4 g/kg). Rats and mice were exposed by inhalation to a coal tar distillate containing about 70% 1,3,5- and 1,2,4-trimethylbenzene; no pathological changes were noted in either species after exposure to 1800-2000 ppm for up to 48 continuous hours, or in rats after 14 exposures of 8 hours each at the same exposure levels. No effects were reported for rats exposed to a mixture of trimethylbenzenes at 1700 ppm for 10 to 21 days.

Neurotoxicity 1,2,4-Trimethylbenzene depresses the central nervous system. Exposure to solvent mixtures containing the chemical causes headache, fatigue, nervousness, and drowsiness. Occupationally, workers exposed to a solvent containing 50% 1,2,4-trimethylbenzene had nervousness, headaches, drowsiness, and vertigo (U.S. EPA). Headache, fatigue, and drowsiness were reported for workers exposed (no dose given) to paint thinner containing 80% 1,2,4- and 1,3,5-trimethylbenzenes.

Results of the developmental toxicity study indicate that the C9 fraction caused adverse neurological effects at the highest dose (1500 ppm) tested.

Subchronic/Chronic Toxicity Long-term exposure to solvents containing 1,2,4-trimethylbenzene may cause nervousness, tension, and bronchitis. Painters that worked for several years with a solvent containing 50% 1,2,4- and 30% 1,3,5-trimethylbenzene showed nervousness, tension and anxiety, asthmatic bronchitis, anemia, and alterations in blood clotting; haematological effects may have been due to trace amounts of benzene.

Rats given 1,2,4-trimethylbenzene orally at doses of 0.5 or 2.0 g/kg/day, 5 days/week for 4 weeks. All rats exposed to the high dose died and 1 rat in the low dose died (no times given); no other effects were reported. Rats exposed by inhalation to 1700 ppm of a trimethylbenzene isomeric mixture for 4 months had decreased weight gain, lymphopenia and neutrophilia.

Genotoxicity: Results of mutagenicity testing, indicate that the C9 fraction does not induce gene mutations in prokaryotes (Salmonella typhimurium/mammalian microsome assay); or in mammalian cells in culture (in Chinese hamster ovary cells with and without activation). The C9 fraction does not induce chromosome mutations in Chinese hamster ovary cells with and without activation; does not induce chromosome aberrations in the bone marrow of Sprague-Dawley rats exposed by inhalation (6 hours/day for 5 days); and does not induce sister chromatid exchange in Chinese hamster ovary cells with and without activation.

Developmental/Reproductive Toxicity: A three-generation reproductive study on the C9 fraction was conducted. CD rats (30/sex/group) were exposed by inhalation to the C9 fraction at concentrations of 0, 100, 500, or 1500 ppm (0, 100, 500, or 1500 mg/kg/day) for 6 hours/day, 5 days/week. There was evidence of parental and reproductive toxicity at all dose levels. Indicators of parental toxicity included reduced body weights, increased salivation, hunched posture, aggressive behavior, and death. Indicators of adverse reproductive system effects included reduced litter size and reduced pup body weight. The LOEL was 100 ppm; a no-observed-effect level was not established. Developmental toxicity, including possible developmental neurotoxicity, was evident in rats in a 3-generation reproductive study.

No effects on fecundity or fertility occurred in rats treated dermally with up to 0.3 mL/rat/day of a mixture of trimethylbenzenes, 4-6 hours/day, 5 days/week over one generation.

NAPHTHA PETROLEUM, LIGHT AROMATIC SOLVENT & NAPHTHA PETROLEUM, HEAVY, HYDRODESULFURISED

For C9 aromatics (typically trimethylbenzenes - TMBs)

Acute Toxicity

Acute toxicity studies (oral, dermal and inhalation routes of exposure) have been conducted in rats using various solvent products containing predominantly mixed C9 aromatic hydrocarbons (CAS RN 64742-95-6). Inhalation LC50s range from 6,000 to 10,000 mg/m³ for C9 aromatic naphtha and 18,000 to 24,000 mg/m³ for 1,2,4 and 1,3,5-TMB, respectively. A rat oral LD50 reported for 1,2,4-TMB is 5 grams/kg bw and a rat dermal LD50 for the C9 aromatic naphtha is >4 mL/kg bw. These data indicate that C9 aromatic solvents show that LD50/LC50 values are greater than limit doses for acute toxicity studies established under OECD test guidelines.

Irritation and Sensitization

Several irritation studies, including skin, eye, and lung/respiratory system, have been conducted on members of the category. The results indicate that C9 aromatic hydrocarbon solvents are mildly to moderately irritating to the skin, minimally irritating to the eye, and have the potential to irritate the respiratory tract and cause depression of respiratory rates in mice. Respiratory irritation is a key endpoint in the current occupational exposure limits established for C9 aromatic hydrocarbon solvents and trimethylbenzenes. No evidence of skin sensitization was identified.

Repeated Dose Toxicity

Inhalation: The results from a subchronic (3 month) neurotoxicity study and a one-year chronic study (6 hr/day, 5 days/week) indicate that effects from inhalation exposure to C9 Aromatic Hydrocarbon Solvents on systemic toxicity are slight. A battery of neurotoxicity and neurobehavioral endpoints were evaluated in the 3-month inhalation study on C9 aromatic naphtha tested at concentrations of 0, 101, 452, or 1320 ppm (0, 500, 2,220, or 6,500 mg/m³). In this study, other than a transient weight reduction in the high exposure group (not statistically significant at termination of exposures), no effects were reported on neuropathology or neuro/behavioral parameters. The NOAEL for systemic and/or neurotoxicity was 6,500 mg/m³, the highest concentration tested. In an inhalation study of a commercial blend, rats were exposed to C9 aromatic naphtha concentrations of 0, 96, 198, or 373 ppm (0, 470, 970, 1830 mg/m³) for 6 hr/day, 5 days/week, for 12 months. Liver and kidney weights were increased in the high exposure group but no accompanying histopathology was observed in these organs.

The NOAEL was considered to be the high exposure level of 373 ppm, or 1830 mg/m³. In two subchronic rat inhalation studies, both of three months duration, rats were exposed to the individual TMB isomers (1,2,4- and 1,3,5-) to nominal concentrations of 0, 25, 100, or 250 ppm (0, 123, 492, or 1230 mg/m³). Respiratory irritation was observed at 492 (100 ppm) and 1230 mg/m³ (250 ppm) and no systemic toxicity was observed in either study. For both pure isomers, the NOELs are 25 ppm or 123 mg/m³ for respiratory irritation and 250 ppm or 1230 mg/m³ for systemic effects.

Oral: The C9 aromatic naphtha has not been tested via the oral route of exposure. Individual TMB isomers have been evaluated in a series of repeated-dose oral studies ranging from 14 days to 3 months over a wide range of doses. The effects observed in these studies included increased liver and kidney weights, changes in blood chemistry, increased salivation, and decreased weight gain at higher doses. Organ weight changes appeared to be adaptive as they were not accompanied by histopathological effects. Blood changes appeared sporadic and without pattern. One study reported hyaline droplet nephropathy in male rats at the highest dose (1000 mg/kg bw-day), an effect that is often associated with alpha-2mu-globulin-induced nephropathy and not considered relevant to humans. The doses at which effects were detected were 100 mg/kg-bw day or above (an exception was the pilot 14 day oral study - LOAEL 150 mg/kg bw-day - but the follow up three month study had a LOAEL of 600 mg/kg/bw-day with a NOAEL of 200 mg/kg bw-day). Since effects generally were not severe and could be considered adaptive or spurious, oral exposure does not appear to pose a high toxicity hazard for pure trimethylbenzene isomers.

Mutagenicity

In vitro genotoxicity testing of a variety of C9 aromatics has been conducted in both bacterial and mammalian cells. In vitro point mutation tests were conducted with Salmonella typhimurium and Escherichia coli bacterial strains, as well as with cultured mammalian cells such as the Chinese hamster cell ovary cells (HGPRT assay) with and without metabolic activation. In addition, several types of in vitro chromosomal aberration tests have been performed (chromosome aberration frequency in Chinese hamster ovary and lung cells, sister chromatid exchange in CHO cells). Results were negative both with and without metabolic activation for all category members. For the supporting chemical 1,2,3-TMB, a single in vitro chromosome aberration test was weakly positive. In in vivo bone marrow cytogenetics test, rats were exposed to C9 aromatic naphtha at concentrations of 0, 153, 471, or 1540 ppm (0, 750, 2,310, or 7,560 mg/m³) 6 hr/day, for 5 days. No evidence of in vivo somatic cell genotoxicity was detected. Based on the cumulative results of these assays, genetic toxicity is unlikely for substances in the C9 Aromatic Hydrocarbon Solvents Category.

Reproductive and Developmental Toxicity

Results from the three-generation reproduction inhalation study in rats indicate limited effects from C9 aromatic naphtha. In each of three generations (F0, F1 and F2), rats were exposed to High Flash Aromatic Naphtha (CAS RN 64742-95-6) via whole body inhalation at target concentrations of 0, 100, 500, or 1500 ppm (actual mean concentrations throughout the full study period were 0, 103, 495, or 1480 ppm, equivalent to 0, 505, 2430, or 7265 mg/m³, respectively). In each generation, both sexes were exposed for 10 weeks prior to and two weeks during mating for 6 hrs/day, 5 days/wks. Female rats in the F0, F1, and F2 generation were then exposed during gestation days 0-20 and lactation days 5-21 for 6 hrs/day, 7 days/wk. The age at exposure initiation differed among generations; F0 rats were exposed starting at 9 weeks of age, F1 exposure began at 5-7 weeks, and F2 exposure began at postnatal day (PND) 22. In the F0 and F1 parental generations, 30 rats/sex/group were exposed and mated. However, in the F2 generation, 40/sex/group were

initially exposed due to concerns for toxicity, and 30/sex/group were randomly selected for mating, except that all survivors were used at 1480 ppm. F3 litters were not exposed directly and were sacrificed on lactation day 21.

Systemic Effects on Parental Generations:

The F0 males showed statistically and biologically significantly decreased mean body weight by ~15% at 1480 ppm when compared with controls. Seven females died or were sacrificed in extremis at 1480 ppm. The F0 female rats in the 495 ppm exposed group had a 13% decrease in body weight gain when adjusted for initial body weight when compared to controls. The F1 parents at 1480 ppm had statistically significantly decreased mean body weights (by ~13% (females) and 22% (males)), and locomotor activity. F1 parents at 1480 ppm had increased ataxia and mortality (six females). Most F2 parents (70/80) exposed to 1480 ppm died within the first week. The remaining animals survived throughout the rest of the exposure period. At week 4 and continuing through the study, F2 parents at 1480 ppm had statistically significant mean body weights much lower than controls (~33% for males; ~28% for females); body weights at 495 ppm were also reduced significantly (by 13% in males and 15% in females). The male rats in the 495 ppm exposed group had a 12% decrease in body weight gain when adjusted for initial body weight when compared to controls. Based on reduced body weight observed, the overall systemic toxicity LOAEC is 495 ppm (2430 mg/m3).

Reproductive Toxicity-Effects on Parental Generations: There were no pathological changes noted in the reproductive organs of any animal of the F0, F1, or F2 generation. No effects were reported on sperm morphology, gestational period, number of implantation sites, or post-implantation loss in any generation. Also, there were no statistically or biologically significant differences in any of the reproductive parameters, including: number of mated females, copulatory index, copulatory interval, number of females delivering a litter, number of females delivering a live litter, or male fertility in the F0 or in the F2 generation. Male fertility was statistically significantly reduced at 1480 ppm in the F1 rats. However, male fertility was not affected in the F0 or in the F2 generations; therefore, the biological significance of this change is unknown and may or may not be attributed to the test substance. No reproductive effects were observed in the F0 or F1 dams exposed to 1480 ppm (7265 mg/m3). Due to excessive mortality at the highest concentration (1480 ppm, only six dams available) in the F2 generation, a complete evaluation is precluded. However, no clear signs of reproductive toxicity were observed in the F2 generation. Therefore, the reproductive NOAEC is considered 495 ppm (2430 mg/m3), which excludes analysis of the highest concentration due to excessive mortality.

Developmental Toxicity - Effects on Pups: Because of significant maternal toxicity (including mortality) in dams in all generations at the highest concentration (1480 ppm), effects in offspring at 1480 ppm are not reported here. No significant effects were observed in the F1 and F2 generation offspring at 103 or 495 ppm. However, in F3 offspring, body weights and body weight gain were reduced by ~ 10-11% compared with controls at 495 ppm for approximately a week (PND 14 through 21). Maternal body weight was also depressed by ~ 12% throughout the gestational period compared with controls. The overall developmental LOAEC from this study is 495 ppm (2430 mg/m3) based on the body weights reductions observed in the F3 offspring.

Conclusion: No effects on reproductive parameters were observed at any exposure concentration, although a confident assessment of the group exposed at the highest concentration was not possible. A potential developmental effect (reduction in mean pup weight and weight gain) was observed at a concentration that was also associated with maternal toxicity.

Acute Toxicity	✗	Carcinogenicity	✗
Skin Irritation/Corrosion	✗	Reproductivity	✗
Serious Eye Damage/Irritation	✗	STOT - Single Exposure	✓
Respiratory or Skin sensitisation	✗	STOT - Repeated Exposure	✗
Mutagenicity	✗	Aspiration Hazard	✓

Legend:

- ✗ – Data either not available or does not fill the criteria for classification
 ✓ – Data available to make classification

SECTION 12 Ecological information

Toxicity

Diggers Mineral Turpentine NZ	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available

naphtha petroleum, light aromatic solvent	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	96h	Algae or other aquatic plants	64mg/l	2
	NOEC(ECx)	72h	Algae or other aquatic plants	1mg/l	1
	EC50	72h	Algae or other aquatic plants	19mg/l	1
	EC50	48h	Crustacea	6.14mg/l	1

naphtha petroleum, heavy, hydrosulfurised	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	72h	Algae or other aquatic plants	391mg/l	2
	EC50(ECx)	72h	Algae or other aquatic plants	391mg/l	2
	NOEC(ECx)	504h	Crustacea	0.097mg/l	2
	EC50	72h	Algae or other aquatic plants	0.53mg/l	2
	EC50	96h	Algae or other aquatic plants	0.58mg/l	2
	NOEC(ECx)	720h	Crustacea	0.024mg/l	2
	LC50	96h	Fish	0.14mg/l	2
	EC50	96h	Algae or other aquatic plants	0.277mg/l	2

benzene	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	48h	Crustacea	7.578-13.983mg/L	4
	LC50	96h	Fish	2.54-7.217mg/L	4
	EC50	96h	Algae or other aquatic plants	>1360mg/l	1
	EC50(ECx)	24h	Algae or other aquatic plants	<0.001mg/L	4
	ErC50	72h	Algae or other aquatic plants	>1360mg/l	1
	EC50	72h	Algae or other aquatic plants	29mg/l	1

Legend: Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.

Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

When spilled this product may act as a typical oil, causing a film, sheen, emulsion or sludge at or beneath the surface of the body of water. The oil film on water surface may physically affect the aquatic organisms, due to the interruption of the oxygen transfer between the air and the water

Oils of any kind can cause:

- drowning of water-fowl due to lack of buoyancy, loss of insulating capacity of feathers, starvation and vulnerability to predators due to lack of mobility
- lethal effects on fish by coating gill surfaces, preventing respiration
- asphyxiation of benthic life forms when floating masses become engaged with surface debris and settle on the bottom and
- adverse aesthetic effects of fouled shoreline and beaches

In case of accidental releases on the soil, a fine film is formed on the soil, which prevents the plant respiration process and the soil particle saturation. It may cause deep water infestation.

For 1,2,4 - Trimethylbenzene:

Half-life (hr) air: 0.48-16;

Half-life (hr) H₂O surface water: 0.24 -672;

Half-life (hr) H₂O ground: 336-1344;

Half-life (hr) soil: 168-672;

Henry's Pa m³/mol: 385 -627;

Bioaccumulation: not significant. 1,2,4-Trimethylbenzene is a volatile organic compound (VOC) substance.

Atmospheric Fate: 1,2,4-trimethylbenzene can contribute to the formation of photochemical smog in the presence of other VOCs. Degradation of 1,2,4-trimethylbenzene in the atmosphere occurs by reaction with hydroxyl radicals. Reaction also occurs with ozone but very slowly (half life 8820 days).

Aquatic Fate: 1,2,4-Trimethylbenzene volatilizes rapidly from surface waters with volatilization half-life from a model river calculated to be 3.4 hours. Biodegradation of 1,2,4-trimethylbenzene has been noted in both seawater and ground water. Various strains of *Pseudomonas* can biodegrade 1,2,4-trimethylbenzene.

Terrestrial Fate: 1,2,4-Trimethylbenzene also volatilizes from soils however; moderate adsorption to soils and sediments may occur. Volatilization is the major route of removal of 1,2,4-trimethylbenzene from soils; although, biodegradation may also occur. Due to the high volatility of the chemical it is unlikely to accumulate in soil or surface water to toxic concentrations.

Ecotoxicity: No significant bioaccumulation has been noted. 1,2,4-Trimethylbenzene is moderately toxic to fathead minnow and slightly toxic to dungeness crab. 1,2,4-

Trimethylbenzene has moderate acute toxicity to aquatic organisms. No stress was observed in rainbow trout, sea lamprey and *Daphnia magna* water fleas. The high concentrations required to induce toxicity in laboratory animals are not likely to be reached in the environment.

For Aromatic Substances Series:

Environmental Fate: Large, molecularly complex polycyclic aromatic hydrocarbons, or PAHs, are persistent in the environment longer than smaller PAHs.

Atmospheric Fate: PAHs are 'semi-volatile substances' which can move between the atmosphere and the Earth's surface in repeated, temperature-driven cycles of deposition and volatilization. Terrestrial Fate: BTEX compounds have the potential to move through soil and contaminate ground water, and their vapors are highly flammable and explosive.

Ecotoxicity - Within an aromatic series, acute toxicity increases with increasing alkyl substitution on the aromatic nucleus. The order of most toxic to least in a study using grass shrimp and brown shrimp was dimethylnaphthalenes > methylnaphthalenes > naphthalenes. Anthracene is a phototoxic PAH. UV light greatly increases the toxicity of anthracene to bluegill sunfish. Biological resources in strong sunlight are at more risk than those that are not. PAHs in general are more frequently associated with chronic risks.

For petroleum distillates:

Environmental fate:

When petroleum substances are released into the environment, four major fate processes will take place: dissolution in water, volatilization, biodegradation and adsorption. These processes will cause changes in the composition of these UVCB substances. In the case of spills on land or water surfaces, photodegradation-another fate process-can also be significant.

As noted previously, the solubility and vapour pressure of components within a mixture will differ from those of the component alone. These interactions are complex for complex UVCBs such as petroleum hydrocarbons.

Each of the fate processes affects hydrocarbon families differently. Aromatics tend to be more water-soluble than aliphatics of the same carbon number, whereas aliphatics tend to be more volatile. Thus, when a petroleum mixture is released into the environment, the principal water contaminants are likely to be aromatics, whereas aliphatics will be the principal air contaminants. The trend in volatility by component class is as follows: alkenes = alkanes > aromatics = cycloalkanes.

The most soluble and volatile components have the lowest molecular weight; thus there is a general shift to higher molecular weight components in residual materials.

Biodegradation:

Biodegradation is almost always operative when petroleum mixtures are released into the environment. It has been widely demonstrated that nearly all soils and sediments have populations of bacteria and other organisms capable of degrading petroleum hydrocarbons. Degradation occurs both in the presence and absence of oxygen. Two key factors that determine degradation rates are oxygen supply and molecular structure. In general, degradation is more rapid under aerobic conditions. Decreasing trends in degradation rates according to structure are as follows:

- (1) n-alkanes, especially in the C10–C25 range, which are degraded readily;
- (2) isoalkanes;
- (3) alkenes;
- (4) benzene, toluene, ethylbenzene, xylenes (BTEX) (when present in concentrations that are not toxic to microorganisms);
- (5) monoaromatics;
- (6) polynuclear (polycyclic) aromatic hydrocarbons (PAHs); and
- (7) higher molecular weight cycloalkanes (which may degrade very slowly).

Three weathering processes-dissolution in water, volatilization and biodegradation-typically result in the depletion of the more readily soluble, volatile and degradable compounds and the accumulation of those most resistant to these processes in residues.

When large quantities of a hydrocarbon mixture enter the soil compartment, soil organic matter and other sorption sites in soil are fully saturated and the hydrocarbons will begin to form a separate phase (a non-aqueous phase liquid, or NAPL) in the soil. At concentrations below the retention capacity for the hydrocarbon in the soil, the NAPL will be immobile this is referred to as residual NAPL. Above the retention capacity, the NAPL becomes mobile and will move within the soil

Bioaccumulation:

Bioaccumulation potential was characterized based on empirical and/or modelled data for a suite of petroleum hydrocarbons expected to occur in petroleum substances.

Bioaccumulation factors (BAFs) are the preferred metric for assessing the bioaccumulation potential of substances, as the bioconcentration factor (BCF) may not adequately account for the bioaccumulation potential of substances via the diet, which predominates for substances with log K_{ow} > -4.5

In addition to fish BCF and BAF data, bioaccumulation data for aquatic invertebrate species were also considered. Biota-sediment/soil accumulation factors (BSAFs), trophic magnification factors and biomagnification factors were also considered in characterizing bioaccumulation potential.

Overall, there is consistent empirical and predicted evidence to suggest that the following components have the potential for high bioaccumulation, with BAF/BCF values greater than 5000: C13–C15 isoalkanes, C12 alkenes, C12–C15 one-ring cycloalkanes, C12 and C15 two-ring cycloalkanes, C14 polycycloalkanes, C15 one-ring aromatics, C15 and C20 cycloalkane monoaromatics, C12–C13 diaromatics, C20 cycloalkane diaromatics, and C14 and C20 three-ring PAHs

These components are associated with a slow rate of metabolism and are highly lipophilic. Exposures from water and diet, when combined, suggest that the rate of uptake would exceed that of the total elimination rate. Most of these components are not expected to biomagnify in aquatic or terrestrial foodwebs, largely because a combination of metabolism, low dietary assimilation efficiency and growth dilution allows the elimination rate to exceed the uptake rate from the diet; however, one study suggests that some alkyl-PAHs may biomagnify. While only BSAFs were found for some PAHs, it is possible that BSAFs will be > 1 for invertebrates, given that they do not have the same metabolic competency as fish.

In general, fish can efficiently metabolize aromatic compounds. There is some evidence that alkylation increases bioaccumulation of naphthalene but it is not known if this can be generalized to larger PAHs or if any potential increase in bioaccumulation due to alkylation will be sufficient to exceed a BAF/BCF of 5000.

Some lower trophic level organisms (i.e., invertebrates) appear to lack the capacity to efficiently metabolize aromatic compounds, resulting in high bioaccumulation potential for some aromatic components as compared to fish.

This is the case for the C14 three-ring PAH, which was bioconcentrated to a high level (BCF > 5000) by invertebrates but not by fish. There is potential for such bioaccumulative components to reach toxic levels in organisms if exposure is continuous and of sufficient magnitude, though this is unlikely in the water column following a spill scenario due to relatively rapid dispersal

Bioaccumulation of aromatic compounds might be lower in natural environments than what is observed in the laboratory. PAHs may sorb to organic material suspended in the water column (dissolved humic material), which decreases their overall bioavailability primarily due to an increase in size. This has been observed with fish

Ecotoxicity:

Diesel fuel studies in salt water are available. The values varied greatly for aquatic species such as rainbow trout and *Daphnia magna*, demonstrating the inherent variability of diesel fuel compositions and its effects on toxicity. Most experimental acute toxicity values are above 1 mg/L. The lowest 48-hour LC50 for salmonids was 2.4 mg/L. *Daphnia magna* had a 24-hour LC50 of 1.8 mg/L. The values varied greatly for aquatic species such as rainbow trout and *Daphnia magna*, demonstrating the inherent variability of diesel fuel compositions

and its effects on toxicity. Most experimental acute toxicity values are above 1 mg/L. The lowest 48-hour LC50 for salmonids was 2.4 mg/L. *Daphnia magna* had a 24-hour LC50 of 1.8 mg/L

The tropical mysid *Metamysidopsis insularis* was shown to be very sensitive to diesel fuel, with a 96-hour LC50 value of 0.22 mg/L this species has been shown to be as sensitive as temperate mysids to toxicants. However, this study used nominal concentrations, and therefore was not considered acceptable. In another study involving diesel fuel, the effect on brown or common shrimp (*Crangon crangon*) a 96-hour LC50 of 22 mg/L was determined. A "gas oil" was also tested and a 96-hour LC50 of 12 mg/L was determined. The steady state cell density of marine phytoplankton decreased with increasing concentrations of diesel fuel, with different sensitivities between species. The diatom *Phaeodactylum tricornutum* showed a 20% decrease in cell density in 24 hours following a 3 mg/L exposure with a 24-hour no-observed effect concentration (NOEC) of 2.5 mg/L. The microalga *Isochrysis galbana* was more tolerant to diesel fuel, with a 24-hour lowest-observed-effect concentration (LOEC) of 26 mg/L (14% decrease in cell density), and a NOEC of 25 mg/L. Finally, the green algae *Chlorella salina* was relatively insensitive to diesel fuel contamination, with a 24-hour LOEC of 170 mg/L (27% decrease in cell density), and a NOEC of 160 mg/L. All populations of phytoplankton returned to a steady state within 5 days of exposure.

In sandy soils, earthworm (*Eisenia fetida*) mortality only occurred at diesel fuel concentrations greater than 10 000 mg/kg, which was also the concentration at which sub-lethal weight loss was recorded.

Nephrotoxic effects of diesel fuel have been documented in several animal and human studies. Some species of birds (mallard ducks in particular) are generally resistant to the toxic effects of petrochemical ingestion, and large amounts of petrochemicals are needed in order to cause direct mortality.

For C9 aromatics (typically trimethylbenzene - TMBs)

Chemicals in this category possess properties indicating a hazard for the environment (acute toxicity for fish, invertebrates, and algae from 1 to 10 mg/L). Category members are readily biodegradable, except 1,3,5-trimethylbenzene (CAS RN 108-67-8). Category members are not expected to be bioaccumulative.

Environmental Fate:

In the air, category member constituents have the potential to rapidly degrade through indirect photolytic processes mediated primarily by hydroxyl radicals with calculated degradation half-lives ranging from 0.54 to 2.81 days (based on a 12-hour day and a hydroxyl radical concentration of 5×10^{-5}). Aqueous photolysis and hydrolysis will not contribute to the transformation of category chemical constituents in aquatic environments because they are either poorly reactive or not susceptible to these reactions.

Results of the Mackay Level I environmental distribution model show that chemical constituents of C9 Aromatic Hydrocarbon Solvents Category members have the potential to partition to air (96.8 to 98.9 %), with a negligible amount partitioning to water (0.2 to 0.6%) and soil (0.9 to 2.7%). In comparison, Level III modeling indicates that category members partition primarily to soil (66.3 to 79.6%) and water (17.8 to 25.0%) compartments rather than air (2.4 to 8.4%) when an equal emission rate (1000 kg/hr) is assumed to each of the air, water, and soil compartments. When release (1000 kg/hr) is modeled only to either the air, water, or soil compartment, constituents are indicated in the modeling to partition primarily (>94%) to the compartment to which they are emitted as advection and degradation influence constituent concentration in compartments to which constituents are not released.

Solvent naphtha, (pet.), light aromatic (CAS RN 64742-95-6), 1,2,4-trimethylbenzene (CAS RN 95-63-6), and 1-ethyl-3-methylbenzene (CAS RN 620-14-4) were determined to be readily biodegradable based on the studies that used the TG OECD 301F (the latter substance is used to characterize the potential biodegradability of the category member, ethylmethylbenzene (CAS RN 25550-14-5)). These three substances exceed 60%

biodegradation in 28 days and met the 10-day window criterion for ready biodegradation. In comparison 1,3,5-trimethylbenzene (CAS RN 108-67-8) was not readily biodegradable. It achieved 42% biodegradation after 28 days and 60% biodegradation after 39 days. The result for the multi-constituent substance (CAS RN 64742-95-6), a UVCB, characterizes the biodegradability of that substance as a whole, but it does not suggest that each constituent is equally biodegradable. As with all ready biodegradation test guidelines, the test system and study design used with these substances (OECD TG 301F) is not capable of distinguishing the relative contribution of the substances' constituents to the total biodegradation measured.

Based on Henry's Law constants (HLCs) representing a potential to volatilize from water that range from 590 to 1000 Pa-m³/mole, the potential to volatilize from surface waters for chemicals in the C9 Aromatic Hydrocarbon Solvents Category is expected to be high.

Based on the measured bioconcentration factors that range from 23 to 342 for 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene, the category members are not expected to be bioaccumulative.

Ecotoxicity

Acute toxicity values used to characterize this category for fish (LL50; LC50) and invertebrates (EL50; EC50) range from 3.5 to 9.2 mg/L, based on measured data. For algae, one study for a category member (CAS RN 64742-95-6) resulted in a 72-hr EC50 of 2.4 mg/L (biomass) and 2.7 mg/L (growth rate) based on measured concentrations.

The algal 72-hour NOEC (no observed effect concentration) for biomass and growth rate is 1.3 mg/L, based on mean measured concentrations. A 21-day *Daphnia magna* reproduction study with 1,3,5-trimethylbenzene (CAS RN 108-67-8) resulted in a NOEC value of 0.4 mg/L, based on a minimum measured value.

For Xylenes:

log K_{oc} : 2.05-3.08; K_{oc} : 25.4-204; Half-life (hr) air : 0.24-42; Half-life (hr) H₂O surface water : 24-672; Half-life (hr) H₂O ground : 336-8640; Half-life (hr) soil : 52-672; Henry's Pa m³ /mol : 637-879; Henry's atm m³ /mol - 7.68E-03; BOD 5 if unstated - 1.4,1%; COD - 2.56,13% ThOD - 3.125 : BCF : 23; log BCF : 1.17-2.41.

Environmental Fate: Most xylenes released to the environment will occur in the atmosphere and volatilisation is the dominant environmental fate process. Soil - Xylenes are expected to have moderate mobility in soil evaporating rapidly from soil surfaces. The extent of the degradation is expected to depend on its concentration, residence time in the soil, the nature of the soil, and whether resident microbial populations have been acclimated. Xylene can remain below the soil surface for several days and may travel through the soil profile and enter groundwater. Soil and water microbes may transform it into other, less harmful compounds, although this happens slowly. It is not clear how long xylene remains trapped deep underground in soil or groundwater, but it may be months or years.

Atmospheric Fate: Xylene evaporates quickly into the air from surface soil and water and can remain in the air for several days until it is broken down by sunlight into other less harmful chemicals. In the ambient atmosphere, xylenes are expected to exist solely in the vapour phase. Xylenes are degraded in the atmosphere with an estimated atmospheric lifetime of about 0.5 to 2 days. Xylene may contribute to photochemical smog formation. p-Xylene has a moderately high photochemical reactivity under smog conditions, higher than the other xylene isomers. The photooxidation of p-xylene results in the production of carbon monoxide, formaldehyde, glyoxal, methylglyoxal, 3-methylbenzyl nitrate, m-tolualdehyde, 4-nitro-3-xylene, 5-nitro-3-xylene, 2,6-dimethyl-p-benzoquinone, 2,4-dimethylphenol, 6-nitro-2,4-dimethylphenol, 2,6-dimethylphenol, and 4-nitro-2,6-dimethylphenol.

Aquatic Fate: p-xylene may adsorb to suspended solids and sediment in water and is expected to volatilise from water surfaces. Estimated volatilisation half-lives for a model river and model lake are 3 hours and 4 days, respectively. Measurements taken from goldfish, eels and clams indicate that bioconcentration in aquatic organisms is low. Photo-oxidation in the presence of humic acids may play an important role in the abiotic degradation of p-xylene. p-Xylene is biodegradable and has been observed to degrade in pond water however; it is unclear if it degrades in surface waters. p-Xylene has been observed to degrade in anaerobic and aerobic groundwater; however, it is known to persist for many years in groundwater, at least at sites where the concentration might have been quite high. Ecotoxicity: Xylenes are slightly toxic to fathead minnow, rainbow trout and bluegill and not acutely toxic to water fleas. For *Photobacterium phosphoreum* EC50 (24 h): 0.0084 mg/L. and *Gammarus lacustris* LC50 (48 h): 0.6 mg/L.

DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
benzene	HIGH (Half-life = 720 days)	LOW (Half-life = 20.88 days)

Bioaccumulative potential

Ingredient	Bioaccumulation
benzene	HIGH (BCF = 4360)

Mobility in soil

Ingredient	Mobility
benzene	LOW (KOC = 165.5)

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal

- Containers may still present a chemical hazard/ danger when empty.
- Return to supplier for reuse/ recycling if possible.

Diggers Mineral Turpentine NZ

Otherwise:

- If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.
- Where possible retain label warnings and SDS and observe all notices pertaining to the product.
- **DO NOT allow wash water from cleaning or process equipment to enter drains.**
- It may be necessary to collect all wash water for treatment before disposal.
- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Where in doubt contact the responsible authority.
- Recycle wherever possible.
- Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
- Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or Incineration in a licensed apparatus (after admixture with suitable combustible material).
- Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

Ensure that the hazardous substance is disposed in accordance with the Hazardous Substances (Disposal) Notice 2017

Disposal Requirements

Packages that have been in direct contact with the hazardous substance must be only disposed if the hazardous substance was appropriately removed and cleaned out from the package. The package must be disposed according to the manufacturer's directions taking into account the material it is made of. Packages which hazardous content have been appropriately treated and removed may be recycled.

The hazardous substance must only be disposed if it has been treated by a method that changed the characteristics or composition of the substance and it is no longer hazardous. DO NOT deposit the hazardous substance into or onto a landfill or a sewage facility.

Burning the hazardous substance must happen under controlled conditions with no person or place exposed to

(1) a blast overpressure of more than 9 kPa; or

(2) an unsafe level of heat radiation.

The disposed hazardous substance must not come into contact with class 1 or 5 substances.

SECTION 14 Transport information

Labels Required



Marine Pollutant



HAZCHEM

3Y

	Land transport (UN)	Air transport (ICAO-IATA / DGR)	Sea transport (IMDG-Code / GGVSee)
UN number: 1300 UN proper shipping name: TURPENTINE SUBSTITUTE Transport hazard class(es): 3 Subrisk: Not Applicable Packing group: III	Environmental hazard: Environmentally hazardous Special provisions: 223 Limited quantity: 5 L	Environmental hazard: Environmentally hazardous ERG Code: 3L Special provisions: A3 Cargo Only Packing Instructions: 366 Cargo Only Maximum Qty / Pack: 220 L Passenger and Cargo Packing Instructions: 355 Passenger and Cargo Maximum Qty / Pack: 60 L Passenger and Cargo Limited Quantity Packing Instructions: Y344 Passenger and Cargo Limited Maximum Qty / Pack: 10 L	Environmental hazard: Marine Pollutant EMS Number: F-E, S-E Special provisions: 223 Limited Quantities: 5 L

Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
naphtha petroleum, light aromatic solvent	Not Available
naphtha petroleum, heavy, hydrodesulfurised	Not Available
benzene	Not Available

Transport in bulk in accordance with the ICG Code

Product name	Ship Type
naphtha petroleum, light aromatic solvent	Not Available
naphtha petroleum, heavy, hydrodesulfurised	Not Available
benzene	Not Available

SECTION 15 Regulatory information

Diggers Mineral Turpentine NZ

Safety, health and environmental regulations / legislation specific for the substance or mixture

This substance is to be managed using the conditions specified in an applicable Group Standard

HSR Number	Group Standard
HSR002528	Cleaning Products Flammable Group Standard 2020
HSR002495	Additives Process Chemicals and Raw Materials Flammable Group Standard 2020
HSR002662	Surface Coatings and Colourants Flammable Group Standard 2020
HSR002611	Metal Industry Products Flammable Group Standard 2020
HSR002621	N.O.S. Flammable Group Standard 2020
HSR002637	Photographic Chemicals Flammable Group Standard 2020
HSR002641	Polymers Flammable Group Standard 2020
HSR002647	Reagent Kits Group Standard 2020
HSR002650	Solvents Flammable Group Standard 2020
HSR002682	Water Treatment Chemicals Flammable Group Standard 2020
HSR100425	Pharmaceutical Active Ingredients Group Standard 2020
HSR002599	Leather and Textile Products Flammable Group Standard 2020
HSR002603	Lubricants Flammable Group Standard 2020
HSR002548	Corrosion Inhibitors Flammable Group Standard 2020
HSR002552	Cosmetic Products Group Standard 2020
HSR002556	Dental Products Flammable Group Standard 2020
HSR002563	Embalming Products Flammable Group Standard 2020
HSR002576	Food Additives and Fragrance Materials Flammable Group Standard 2020
HSR002583	Fuel Additives Flammable Group Standard 2020
HSR002596	Laboratory Chemicals and Reagent Kits Group Standard 2020
HSR100757	Veterinary Medicines Limited Pack Size Finished Dose Group Standard 2020
HSR100758	Veterinary Medicines Non dispersive Closed System Application Group Standard 2020
HSR100759	Veterinary Medicines Non dispersive Open System Application Group Standard 2020

Please refer to Section 8 of the SDS for any applicable tolerable exposure limit or Section 12 for environmental exposure limit.

naphtha petroleum, light aromatic solvent is found on the following regulatory lists

- Chemical Footprint Project - Chemicals of High Concern List
- International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
- New Zealand Approved Hazardous Substances with controls
- New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals
- New Zealand Inventory of Chemicals (NZIoC)

naphtha petroleum, heavy, hydrodesulfurised is found on the following regulatory lists

- Chemical Footprint Project - Chemicals of High Concern List
- International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
- New Zealand Approved Hazardous Substances with controls
- New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals
- New Zealand Inventory of Chemicals (NZIoC)
- New Zealand Workplace Exposure Standards (WES)

benzene is found on the following regulatory lists

- Chemical Footprint Project - Chemicals of High Concern List
- International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
- International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 1: Carcinogenic to humans
- New Zealand Approved Hazardous Substances with controls
- New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals
- New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data
- New Zealand Inventory of Chemicals (NZIoC)
- New Zealand Workplace Exposure Standards (WES)

Hazardous Substance Location

Subject to the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Hazard Class	Quantity (Closed Containers)	Quantity (Open Containers)
3.1C	500 L in containers more than 5 L	250 L
3.1C	1 500 L in containers up to and including 5 L	250 L

Certified Handler

Subject to Part 4 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Class of substance	Quantities
Not Applicable	Not Applicable

Refer Group Standards for further information

Maximum quantities of certain hazardous substances permitted on passenger service vehicles

Subject to Regulation 13.14 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Hazard Class	Gas (aggregate water capacity in mL)	Liquid (L)	Solid (kg)	Maximum quantity per package for each classification
3.1C or 3.1D				10 L

Tracking Requirements

Continued...

Diggers Mineral Turpentine NZ

Not Applicable

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (naphtha petroleum, light aromatic solvent; naphtha petroleum, heavy, hydrodesulfurised; benzene)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	Yes
Legend:	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

SECTION 16 Other information

Revision Date: 10/08/2022

Initial Date: 04/05/2022

CONTACT POINT

IMMEDIATELY contact the local POISON CONTROL center for your area (24 hours): Alberta 1-800-332-1414 British Columbia 1-800-567-8911 Manitoba 1-855-776-4766 New Brunswick 911 Newfoundland and Labrador 1-866-727-1110 Northwest Territories 1-800-332-1414 Nova Scotia and Prince Edward Island 1-800-565-8161, 1-800-332-1414 or 911 Nunavut 1-800-268-9017 Ontario 1-800-268-9017 Quebec 1-800-463-5060 Saskatchewan 1-866-454-1212 Yukon Territory 867-393-8700 United States 1-800-222-1222 Contactez IMMÉDIATEMENT le centre ANTIPOISON de votre région (24 heures): Alberta 1-800-332-1414 Colombie-Britannique 1-800-567-8911 Manitoba 1-855-776-4766 Nouveau-Brunswick 911 Terre-Neuve-et-Labrador 1-866-727-1110 Territoires du Nord-Ouest 1-800-332-1414 Nouvelle-Écosse et Île-du-Prince-Édouard 1-800-565-8161, 1-800-332-1414 ou 911 Nunavut 1-800-268-9017 Ontario 1-800-268-9017 Québec 1-800-463-5060 Saskatchewan 1-866-454-1212 Territoire du Yukon 867-393-8700 États-Unis: 1-800-222-1222

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average
 PC—STEL: Permissible Concentration-Short Term Exposure Limit
 IARC: International Agency for Research on Cancer
 ACGIH: American Conference of Governmental Industrial Hygienists
 STEL: Short Term Exposure Limit
 TEEL: Temporary Emergency Exposure Limit.
 IDLH: Immediately Dangerous to Life or Health Concentrations
 ES: Exposure Standard
 OSF: Odour Safety Factor
 NOAEL :No Observed Adverse Effect Level
 LOAEL: Lowest Observed Adverse Effect Level
 TLV: Threshold Limit Value
 LOD: Limit Of Detection
 OTV: Odour Threshold Value
 BCF: BioConcentration Factors
 BEI: Biological Exposure Index
 AIIC: Australian Inventory of Industrial Chemicals
 DSL: Domestic Substances List
 NDSL: Non-Domestic Substances List
 IECSC: Inventory of Existing Chemical Substance in China
 EINECS: European Inventory of Existing Commercial chemical Substances
 ELINCS: European List of Notified Chemical Substances
 NLP: No-Longer Polymers
 ENCS: Existing and New Chemical Substances Inventory
 KECI: Korea Existing Chemicals Inventory
 NZIoC: New Zealand Inventory of Chemicals
 PICCS: Philippine Inventory of Chemicals and Chemical Substances
 TSCA: Toxic Substances Control Act
 TCSI: Taiwan Chemical Substance Inventory
 INSQ: Inventario Nacional de Sustancias Químicas
 NCI: National Chemical Inventory
 FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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T90 Penetrating Threadlocker #908-2751, 908-2786 (NZ) RS Components

Chemwatch: 5421-98
Version No: 2.1.1.1
Safety Data Sheet according to HSNO Regulations

Chemwatch Hazard Alert Code: 3

Issue Date: 24/08/2020
Print Date: 07/09/2020
L.GHS.NZL.EN

SECTION 1 Identification of the substance / mixture and of the company / undertaking

Product Identifier

Product name	T90 Penetrating Threadlocker #908-2751, 908-2786 (NZ)
Synonyms	Not Available
Other means of identification	Not Available

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Anaerobic, based on polyethyleneglycol dimethacrylate.
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Details of the supplier of the safety data sheet

Registered company name	RS Components
Address	PO Box 12-127 Penrose, Auckland New Zealand
Telephone	+64 27 4747122
Fax	+64 9 579 1700
Website	www.nz.rs-online.com
Email	Not Available

Emergency telephone number

Association / Organisation	CHEMWATCH EMERGENCY RESPONSE
Emergency telephone numbers	+61 2 9186 1132
Other emergency telephone numbers	+64 800 700 112

Once connected and if the message is not in your preferred language then please dial 01

SECTION 2 Hazards identification

Classification of the substance or mixture

Classification ^[1]	Acute Toxicity (Oral) Category 5, Acute Toxicity (Inhalation) Category 4, Skin Corrosion/Irritation Category 2, Serious Eye Damage Category 1, Skin Sensitizer Category 1, Carcinogenicity Category 1, Specific target organ toxicity - single exposure Category 2, Specific target organ toxicity - repeated exposure Category 2, Acute Aquatic Hazard Category 3, Chronic Aquatic Hazard Category 3, Acute Vertebrate Hazard Category 3
Legend:	1. Classified by Chemwatch; 2. Classification drawn from CCID EPA NZ; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI
Determined by Chemwatch using GHS/HSNO criteria	6.1D (inhalation), 6.1E (oral), 6.3A, 8.3A, 6.5B (contact), 6.7A, 6.9B, 9.1C, 9.1D, 9.3C

Label elements

Hazard pictogram(s)	
Signal word	Danger

Hazard statement(s)

H303	May be harmful if swallowed.
H332	Harmful if inhaled.
H315	Causes skin irritation.
H318	Causes serious eye damage.

T90 Penetrating Threadlocker #908-2751, 908-2786 (NZ)

H317	May cause an allergic skin reaction.
H350	May cause cancer.
H371	May cause damage to organs.
H373	May cause damage to organs through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.
H433	Harmful to terrestrial vertebrates.

Precautionary statement(s) Prevention

P201	Obtain special instructions before use.
P260	Do not breathe mist/vapours/spray.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.

Precautionary statement(s) Response

P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor/physician/first aider.
P321	Specific treatment (see advice on this label).
P302+P352	IF ON SKIN: Wash with plenty of water.

Precautionary statement(s) Storage

P405	Store locked up.
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Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.
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SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
109-16-0	70-90	<u>triethylene glycol dimethacrylate</u>
923-26-2	2.9-10	<u>2-hydroxypropyl methacrylate</u>
79-10-7	1-2.9	<u>acrylic acid</u>
80-15-9	1-2.9	<u>cumyl hydroperoxide</u>
114-83-0	<1	<u>acetylphenylhydrazine</u>
99-97-8	<1	<u>N,N-dimethyl-p-toluidine</u>

SECTION 4 First aid measures

Description of first aid measures

Eye Contact	If this product comes in contact with the eyes: ▶ Immediately hold eyelids apart and flush the eye continuously with running water. ▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. ▶ Transport to hospital or doctor without delay. ▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin contact occurs: ▶ Immediately remove all contaminated clothing, including footwear. ▶ Flush skin and hair with running water (and soap if available). ▶ Seek medical attention in event of irritation.
Inhalation	▶ If fumes or combustion products are inhaled remove from contaminated area. ▶ Lay patient down. Keep warm and rested. ▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▶ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▶ Transport to hospital, or doctor, without delay.
Ingestion	▶ IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY. ▶ For advice, contact a Poisons Information Centre or a doctor. ▶ Urgent hospital treatment is likely to be needed. ▶ In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition. ▶ If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the SDS should be provided. Further action will be the responsibility of the medical specialist. ▶ If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the SDS.
Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed	

Continued...

T90 Penetrating Threadlocker #908-2751, 908-2786 (NZ)

otherwise:

- ▶ **INDUCE** vomiting with fingers down the back of the throat, **ONLY IF CONSCIOUS**. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.

NOTE: Wear a protective glove when inducing vomiting by mechanical means.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 Firefighting measures**Extinguishing media**

- ▶ Foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).
- ▶ Carbon dioxide.

Special hazards arising from the substrate or mixture

Fire Incompatibility	▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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Advice for firefighters

Fire Fighting	▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ May be violently or explosively reactive. ▶ Wear full body protective clothing with breathing apparatus. ▶ Prevent, by any means available, spillage from entering drains or water course.
Fire/Explosion Hazard	▶ Combustible. ▶ Slight fire hazard when exposed to heat or flame. ▶ Heating may cause expansion or decomposition leading to violent rupture of containers. ▶ On combustion, may emit toxic fumes of carbon monoxide (CO). Combustion products include: carbon dioxide (CO₂) aldehydes nitrogen oxides (NO_x) other pyrolysis products typical of burning organic material. Contains low boiling substance: Closed containers may rupture due to pressure buildup under fire conditions. May emit poisonous fumes. May emit corrosive fumes.

SECTION 6 Accidental release measures**Personal precautions, protective equipment and emergency procedures**

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	▶ Remove all ignition sources. ▶ Clean up all spills immediately. ▶ Avoid breathing vapours and contact with skin and eyes. ▶ Control personal contact with the substance, by using protective equipment.
Major Spills	Moderate hazard. ▶ Clear area of personnel and move upwind. ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ Wear breathing apparatus plus protective gloves.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage**Precautions for safe handling**

Safe handling	▶ Avoid all personal contact, including inhalation. ▶ Wear protective clothing when risk of exposure occurs. ▶ Use in a well-ventilated area. ▶ Prevent concentration in hollows and sumps.
Other information	▶ Store in original containers. ▶ Keep containers securely sealed. ▶ No smoking, naked lights or ignition sources. ▶ Store in a cool, dry, well-ventilated area.

Conditions for safe storage, including any incompatibilities

Suitable container	▶ Metal can or drum ▶ Packaging as recommended by manufacturer. ▶ Check all containers are clearly labelled and free from leaks.
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Storage incompatibility

- ▶ Avoid reaction with oxidising agents
- ▶ Avoid strong acids, acid chlorides, acid anhydrides and chloroformates.
- ▶ Store below 38 deg. C.

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
New Zealand Workplace Exposure Standards (WES)	acrylic acid	Acrylic acid	2 ppm / 5.9 mg/m ³	Not Available	Not Available	skin-Skin absorption

Emergency Limits

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
triethylene glycol dimethacrylate	Methacrylic acid, diester with triethylene glycol; (Polyester TGM3)	33 mg/m ³	360 mg/m ³	2,100 mg/m ³
acrylic acid	Acrylic acid	Not Available	Not Available	Not Available
cumyl hydroperoxide	Cumene hydroperoxide; (Isopropylbenzene hydroperoxide)	0.15 ppm	1.6 ppm	9.7 ppm

Ingredient	Original IDLH	Revised IDLH
triethylene glycol dimethacrylate	Not Available	Not Available
2-hydroxypropyl methacrylate	Not Available	Not Available
acrylic acid	Not Available	Not Available
cumyl hydroperoxide	Not Available	Not Available
acetylphenylhydrazine	Not Available	Not Available
N,N-dimethyl-p-toluidine	Not Available	Not Available

Occupational Exposure Banding

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
triethylene glycol dimethacrylate	E	≤ 0.1 ppm
2-hydroxypropyl methacrylate	E	≤ 0.1 ppm
cumyl hydroperoxide	E	≤ 0.1 ppm
acetylphenylhydrazine	E	≤ 0.01 mg/m ³
N,N-dimethyl-p-toluidine	E	≤ 0.1 ppm

Notes: Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.

MATERIAL DATA

NOTE D: Certain substances which are susceptible to spontaneous polymerisation or decomposition are generally placed on the market in a stabilised form. It is in this form that they are listed on Annex I

When they are placed on the market in a non-stabilised form, the label must state the name of the substance followed by the words "non-stabilised"

European Union (EU) List of harmonised classification and labelling hazardous substances, Table 3.1, Annex VI, Regulation (EC) No 1272/2008 (CLP) - up to the latest ATP

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.
Personal protection	
Eye and face protection	▶ Safety glasses with side shields. ▶ Chemical goggles. ▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.
Skin protection	See Hand protection below
Hands/feet protection	▶ Wear chemical protective gloves, e.g. PVC. ▶ Wear safety footwear or safety gumboots, e.g. Rubber NOTE: ▶ The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact. ▶ Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed. The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.

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	Personal hygiene is a key element of effective hand care.
Body protection	See Other protection below
Other protection	▶ Overalls. ▶ P.V.C apron. ▶ Barrier cream. ▶ Skin cleansing cream.

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

"Forsberg Clothing Performance Index".

The effect(s) of the following substance(s) are taken into account in the **computer-generated** selection:

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Material	CPI
BUTYL	C
PE	C
SARANEX-23	C
TEFLON	C
VITON	C

* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Respiratory protection

Type A-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.

Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	A-AUS P2	-	A-PAPR-AUS / Class 1 P2
up to 50 x ES	-	A-AUS / Class 1 P2	-
up to 100 x ES	-	A-2 P2	A-PAPR-2 P2 ^

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- ▶ Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- ▶ The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- ▶ Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

Avoid inhalation.

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Green liquid with barely perceptible odour.		
Physical state	Liquid	Relative density (Water = 1)	1.08
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	Not Available	Decomposition temperature	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	11.57
Initial boiling point and boiling range (°C)	>35	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	>93	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Applicable	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Not Available	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	▶ Unstable in the presence of incompatible materials. ▶ Product is considered stable. ▶ Hazardous polymerisation will not occur.

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Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled	Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful.
Ingestion	Accidental ingestion of the material may be damaging to the health of the individual.
Skin Contact	Evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic). The dermatitis is often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis. The material may accentuate any pre-existing dermatitis condition Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.
Eye	When applied to the eye(s) of animals, the material produces severe ocular lesions which are present twenty-four hours or more after instillation.
Chronic	Serious damage (clear functional disturbance or morphological change which may have toxicological significance) is likely to be caused by repeated or prolonged exposure. As a rule the material produces, or contains a substance which produces severe lesions. Such damage may become apparent following direct application in subchronic (90 day) toxicity studies or following sub-acute (28 day) or chronic (two-year) toxicity tests. Harmful: danger of serious damage to health by prolonged exposure through inhalation. Practical experience shows that skin contact with the material is capable either of inducing a sensitisation reaction in a substantial number of individuals, and/or of producing a positive response in experimental animals. On the basis of epidemiological data, the material is regarded as carcinogenic to humans. There is sufficient data to establish a causal association between human exposure to the material and the development of cancer. Sensitisation may give severe responses to very low levels of exposure, in situations where exposure may occur.

T90 Penetrating Threadlocker #908-2751, 908-2786 (NZ)	TOXICITY	IRRITATION
	Not Available	Not Available
triethylene glycol dimethacrylate	TOXICITY	IRRITATION
	Oral (mouse) LD50: 10750 mg/kg^[2] Oral (rat) LD50: 10837 mg/kg^[2]	Eye: no adverse effect observed (not irritating)^[1] Skin: no adverse effect observed (not irritating)^[1]
2-hydroxypropyl methacrylate	TOXICITY	IRRITATION
	Oral (rat) LD50: 11,200 mg/kg^[2] Oral (rat) LD50: 5050 mg/kg^[2]	Eye: adverse effect observed (irritating)^[1] Skin: no adverse effect observed (not irritating)^[1]
acrylic acid	TOXICITY	IRRITATION
	~140 mg/kg ^[2]	Not Available
	~16.2 mg/kg ^[2]	
	~23.6 mg/kg ^[2]	
	144 mg/kg ^[2]	
	1590 mg/kg ^[2]	
	24 mg/kg ^[2]	
	Inhalation (mouse) LC50: 2.65 mg/l/2h ^[2]	
	mg/kg ^[2]	
	Oral (rabbit) LD50: =250 mg/kg ^[2]	
	Oral (rat) LD50: =1250 mg/kg ^[2]	
	Oral (rat) LD50: =1350 mg/kg ^[2]	
	Oral (rat) LD50: =2520 mg/kg ^[2]	
	Oral (rat) LD50: =33.5 mg/kg ^[2]	
	Oral (rat) LD50: =360 mg/kg ^[2]	
	Oral (rat) LD50: 151-526 mg/kg ^[2]	
cumyl hydroperoxide	TOXICITY	IRRITATION
	dermal (rat) LD50: 500 mg/kg^[2] Inhalation (rat) LC50: 219.74898 mg/l/4h^[2]	Eye (rabbit): 1 mg Skin (rabbit): 500 mg - mild

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	Oral (rat) LD50: 382 mg/kg ^[2]	
acetylphenylhydrazine	TOXICITY	IRRITATION
	Oral (mouse) LD50: 270 mg/kg ^[2]	Not Available
N,N-dimethyl-p-toluidine	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >2000 mg/kg ^[2]	Not Available
	Inhalation (rat) LC50: 1.4 mg/l/4H ^[2]	
	Oral (rat) LD50: 980 mg/kg ^[2]	
Legend:	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

2-HYDROXYPROPYL METHACRYLATE	Where no "official" classification for acrylates and methacrylates exists, there has been cautious attempts to create classifications in the absence of contrary evidence. For example Monoalkyl or monoarylestere of acrylic acids should be classified as R36/37/38 and R51/53 Monoalkyl or monoaryl esters of methacrylic acid should be classified as R36/37/38 Based on the available oncogenicity data and without a better understanding of the carcinogenic mechanism the Health and Environmental Review Division (HERD), Office of Toxic Substances (OTS), of the US EPA previously concluded that all chemicals that contain the acrylate or methacrylate moiety (CH ₂ =CHCOO or CH ₂ =C(CH ₃)COO) should be considered to be a carcinogenic hazard unless shown otherwise by adequate testing. This position has now been revised and acrylates and methacrylates are no longer <i>de facto</i> carcinogens. for CAS 963-26-2 2-hydroxypropyl methacrylate NOTE: Allergic contact dermatitis is reported following exposure of guinea pigs (mild) and humans (severe). for CAS 27813-02-1 1-hydroxypropyl methacrylate
ACRYLIC ACID	For acrylic acid: Acute toxicity: Acrylic acid is absorbed via the lungs in animals and humans, absorption via the oral and dermal routes of exposure is demonstrated. In animals with solely nasal respiration, it is resorbed at the nasal mucosa. The extent of absorption depends on pH and solvent with direct dependence on substance concentration. In mice acrylic acid is rapidly and completely metabolised mainly in liver and kidney via the normal catabolic pathways of beta-oxidation. The material may produce severe skin irritation after prolonged or repeated exposure, and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) thickening of the epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis. Prolonged contact is unlikely, given the severity of response, but repeated exposures may produce severe ulceration.
CUMYL HYDROPEROXIDE	Bacterial cell mutagen Equivocal tumorigen by RTECS criteria The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.
ACETYLPHENYLHYDRAZINE	Tumorigenic - Neoplastic by RTECS criteria.
N,N-DIMETHYL-P-TOLUIDINE	WARNING: This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.
TRIETHYLENE GLYCOL DIMETHACRYLATE & 2-HYDROXYPROPYL METHACRYLATE & ACETYLPHENYLHYDRAZINE	The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important.
TRIETHYLENE GLYCOL DIMETHACRYLATE & 2-HYDROXYPROPYL METHACRYLATE & ACRYLIC ACID & CUMYL HYDROPEROXIDE & ACETYLPHENYLHYDRAZINE	Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS.

Acute Toxicity	✓	Carcinogenicity	✓
Skin Irritation/Corrosion	✓	Reproductivity	✗
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	✓
Respiratory or Skin sensitisation	✓	STOT - Repeated Exposure	✓
Mutagenicity	✗	Aspiration Hazard	✗

Legend: ✗ – Data either not available or does not fill the criteria for classification
 ✓ – Data available to make classification

SECTION 12 Ecological information

Toxicity

T90 Penetrating Threadlocker #908-2751, 908-2786 (NZ)	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
triethylene glycol dimethacrylate	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96	Fish	16.4mg/L	2

Continued...

T90 Penetrating Threadlocker #908-2751, 908-2786 (NZ)

	EC50	72	Algae or other aquatic plants	72.8mg/L	2
	NOEC	72	Algae or other aquatic plants	18.6mg/L	2
2-hydroxypropyl methacrylate	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96	Fish	833mg/L	2
	EC50	48	Crustacea	>143mg/L	2
	EC50	72	Algae or other aquatic plants	>1-260mg/L	2
	NOEC	504	Crustacea	45.2mg/L	2
acrylic acid	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96	Fish	>1-mg/L	2
	EC50	48	Crustacea	27.9mg/L	2
	EC50	72	Algae or other aquatic plants	0.04mg/L	2
	EC10	72	Algae or other aquatic plants	=0.01mg/L	1
	NOEC	72	Algae or other aquatic plants	=0.008mg/L	1
cumyl hydroperoxide	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96	Fish	3.9mg/L	2
	EC50	48	Crustacea	18.84mg/L	2
	NOEC	96	Fish	1.5mg/L	2
acetylphenylhydrazine	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
N,N-dimethyl-p-toluidine	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96	Fish	24.335mg/L	2
	EC50	48	Crustacea	13.7mg/L	2
	EC50	96	Algae or other aquatic plants	15.481mg/L	2
Legend: Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data					

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

On the basis of available evidence concerning either toxicity, persistence, potential to accumulate and/or observed environmental fate and behaviour, the material may present a danger, immediate or long-term and/or delayed, to the structure and/or functioning of natural ecosystems.

DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
triethylene glycol dimethacrylate	LOW	LOW
2-hydroxypropyl methacrylate	LOW	LOW
acrylic acid	HIGH (Half-life = 180 days)	LOW (Half-life = 0.99 days)
cumyl hydroperoxide	LOW (Half-life = 56 days)	LOW (Half-life = 5.42 days)
acetylphenylhydrazine	HIGH	HIGH
N,N-dimethyl-p-toluidine	HIGH	HIGH

Bioaccumulative potential

Ingredient	Bioaccumulation
triethylene glycol dimethacrylate	LOW (LogKOW = 1.88)
2-hydroxypropyl methacrylate	LOW (BCF = 3.2)
acrylic acid	LOW (LogKOW = 0.35)
cumyl hydroperoxide	LOW (BCF = 35.5)
acetylphenylhydrazine	LOW (LogKOW = 0.7365)
N,N-dimethyl-p-toluidine	LOW (LogKOW = 2.81)

Mobility in soil

Ingredient	Mobility
triethylene glycol dimethacrylate	LOW (KOC = 10)
2-hydroxypropyl methacrylate	LOW (KOC = 10)
acrylic acid	HIGH (KOC = 1.201)
cumyl hydroperoxide	LOW (KOC = 2346)
acetylphenylhydrazine	LOW (KOC = 70.29)
N,N-dimethyl-p-toluidine	LOW (KOC = 124.8)

Continued...

T90 Penetrating Threadlocker #908-2751, 908-2786 (NZ)

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	▶ Recycle wherever possible or consult manufacturer for recycling options. ▶ Consult State Land Waste Authority for disposal. ▶ Bury or incinerate residue at an approved site. ▶ Recycle containers if possible, or dispose of in an authorised landfill.
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Ensure that the hazardous substance is disposed in accordance with the Hazardous Substances (Disposal) Notice 2017

Disposal Requirements

Packages that have been in direct contact with the hazardous substance must be only disposed if the hazardous substance was appropriately removed and cleaned out from the package. The package must be disposed according to the manufacturer's directions taking into account the material it is made of. Packages which hazardous content have been appropriately treated and removed may be recycled.

The hazardous substance must only be disposed if it has been treated by a method that changed the characteristics or composition of the substance and it is no longer hazardous.

SECTION 14 Transport information

Labels Required

Marine Pollutant	NO
HAZCHEM	Not Applicable

Land transport (UN): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

SECTION 15 Regulatory information

Safety, health and environmental regulations / legislation specific for the substance or mixture

This substance is to be managed using the conditions specified in an applicable Group Standard

HSR Number	Group Standard
HSR002531	Cleaning Products (Toxic [6.7]) Group Standard 2017
HSR002596	Laboratory Chemicals and Reagent Kits Group Standard 2017
HSR002607	Lubricants (Toxic [6.7]) Group Standard 2017
HSR002586	Fuel Additives (Toxic [6.7]) Group Standard 2017
HSR002520	Aerosols (Toxic [6.7]) Group Standard 2017
HSR002646	Polymers (Toxic [6.7]) Group Standard 2017
HSR002616	Metal Industry Products (Toxic [6.7]) Group Standard 2017
HSR002512	Additives, Process Chemicals and Raw Materials (Toxic [6.7]) Group Standard 2017
HSR002568	Embalming Chemicals (Toxic [6.7]) Group Standard 2017
HSR002679	Surface Coatings and Colourants (Toxic [6.7]) Group Standard 2017
HSR100425	Pharmaceutical Active Ingredients Group Standard 2017
HSR002601	Leather and Textile Products (Toxic [6.7]) Group Standard 2017
HSR002648	Refining Catalysts Group Standard 2017
HSR002545	Construction Products (Toxic [6.7A]) Group Standard 2017
HSR002551	Corrosion Inhibitors (Toxic [6.7]) Group Standard 2017
HSR100757	Veterinary Medicine (Limited Pack Size, Finished Dose) Standard 2017
HSR100758	Veterinary Medicines (Non-dispersive Closed System Application) Group Standard 2017
HSR100759	Veterinary Medicines (Non-dispersive Open System Application) Group Standard 2017
HSR002655	Solvents (Toxic [6.7]) Group Standard 2017
HSR002625	N.O.S. (Toxic [6.1, 6.7]) Group Standard 2017
HSR002639	Photographic Chemicals (Toxic [6.7]) Group Standard 2017
HSR002560	Dental Products (Toxic [6.7]) Group Standard 2017
HSR002687	Water Treatment Chemicals (Toxic [6.7]) Group Standard 2017

triethylene glycol dimethacrylate is found on the following regulatory lists

New Zealand Approved Hazardous Substances with controls

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data

New Zealand Inventory of Chemicals (NZIoC)

2-hydroxypropyl methacrylate is found on the following regulatory lists

T90 Penetrating Threadlocker #908-2751, 908-2786 (NZ)

New Zealand Approved Hazardous Substances with controls
New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

acrylic acid is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
New Zealand Approved Hazardous Substances with controls
New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

cumyl hydroperoxide is found on the following regulatory lists

New Zealand Approved Hazardous Substances with controls
New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

acetylphenylhydrazine is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List

N,N-dimethyl-p-toluidine is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B : Possibly carcinogenic to humans
New Zealand Approved Hazardous Substances with controls

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data
New Zealand Inventory of Chemicals (NZIoC)

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data
New Zealand Inventory of Chemicals (NZIoC)
New Zealand Workplace Exposure Standards (WES)
United Nations List of Prior Informed Consent Chemicals

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data
New Zealand Inventory of Chemicals (NZIoC)

New Zealand Inventory of Chemicals (NZIoC)

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals
New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data
New Zealand Inventory of Chemicals (NZIoC)

Hazardous Substance Location

Subject to the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Hazard Class	Quantity (Closed Containers)	Quantity (Open Containers)
Not Applicable	Not Applicable	Not Applicable

Certified Handler

Subject to Part 4 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Class of substance	Quantities
6.7A	10 kg or more, if solid 10 L or more, if liquid

Refer Group Standards for further information

Tracking Requirements

Not Applicable

National Inventory Status

National Inventory	Status
Australia - AIC	Yes
Australia Non-Industrial Use	No (triethylene glycol dimethacrylate; 2-hydroxypropyl methacrylate; acrylic acid; cumyl hydroperoxide; acetylphenylhydrazine; N,N-dimethyl-p-toluidine)
Canada - DSL	Yes
Canada - NDSL	No (triethylene glycol dimethacrylate; 2-hydroxypropyl methacrylate; acrylic acid; cumyl hydroperoxide; acetylphenylhydrazine; N,N-dimethyl-p-toluidine)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	No (acetylphenylhydrazine)
Vietnam - NCI	Yes
Russia - ARIPS	Yes
Legend:	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

SECTION 16 Other information

Revision Date	24/08/2020
Initial Date	24/08/2020

Continued...

T90 Penetrating Threadlocker #908-2751, 908-2786 (NZ)**Other information**

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average
PC—STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit.
IDLH: Immediately Dangerous to Life or Health Concentrations
OSF: Odour Safety Factor
NOAEL :No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index

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TEL (+61 3) 9572 4700.

SAFETY DATA SHEET

0214

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name BOC SMOOTHARC STAINLESS STEEL PICKLING GEL (NZ)
Synonyms 0214 - SDS NUMBER • 1107 - MATERIAL CODE • BOC WELD-GUARD STAINLESS STEEL PICKLING GEL (FORMERLY)

1.2 Uses and uses advised against

Uses SCALE REMOVER • STAINLESS STEEL CLEANER

1.3 Details of the supplier of the product

Supplier name BOC LIMITED (NEW ZEALAND)
Address 988 Great South Road, Penrose, Auckland, NEW ZEALAND
Telephone +64 9 525 5600
Email customer.servicenz@boc.com
Website <http://www.boc.co.nz>

1.4 Emergency telephone numbers

Emergency 0800 111 333 (NZ only)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

HAZARDOUS ACCORDING TO NZ ENVIRONMENTAL PROTECTION AUTHORITY CRITERIA

Physical Hazards

Corrosive to Metals: Category 1

Health Hazards

Acute Toxicity: Inhalation: Category 3
Acute Toxicity: Oral: Category 3
Acute Toxicity: Skin: Category 3
Serious Eye Damage / Eye Irritation: Category 1
Skin Corrosion/Irritation: Category 1B
Specific Target Organ Toxicity (Repeated Exposure): Category 1
Specific Target Organ Toxicity (Single Exposure): Category 1

Environmental Hazards

Not classified as an Environmental Hazard

2.2 GHS Label elements

Signal word DANGER

Pictograms



PRODUCT NAME BOC SMOOTHARC STAINLESS STEEL PICKLING GEL (NZ)**Hazard statements**

H290	May be corrosive to metals.
H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H331	Toxic if inhaled.
H370	Causes damage to organs (bone, cardiovascular system, eyes, liver, metabolic system, respiratory system).
H372	Causes damage to organs (bone, cardiovascular system, eyes, liver, metabolic system, respiratory system) through prolonged or repeated exposure.

Prevention statements

P234	Keep only in original packaging.
P260	Do not breathe dust/fume/gas/mist/vapours/spray.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Response statements

P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P311	IF exposed or concerned: Call a POISON CENTRE or doctor/physician.
P310	Immediately call a POISON CENTRE or doctor/physician.
P314	Get medical advice/attention if you feel unwell.
P361 + P364	Take off immediately all contaminated clothing and wash it before reuse.
P363	Wash contaminated clothing before reuse.
P390	Absorb spillage to prevent material damage.

Storage statements

P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P406	Store in corrosive resistant container with a resistant inner liner.

Disposal statements

P501	Dispose of contents/container in accordance with relevant regulations.
------	--

2.3 Other hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS**3.1 Substances / Mixtures**

Ingredient	CAS Number	EC Number	Content
NITRIC ACID	7697-37-2	231-714-2	10 to 30%
HYDROFLUORIC ACID	7664-39-3	231-634-8	1 to 5%
WATER	7732-18-5	231-791-2	30 to 60%
ADDITIVE(S)	-	-	10 to 30%

4. FIRST AID MEASURES**4.1 Description of first aid measures**

Eye	If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.
Inhalation	If inhaled, remove from contaminated area. To protect rescuer, use a Full-face Type B (Inorganic and acid gas) respirator or an Air-line respirator (in poorly ventilated areas). Apply artificial respiration if not breathing.
Skin	If skin contact occurs, immediately remove contaminated clothing. Flush skin under running water for 15 minutes. Then apply calcium gluconate gel or HEXAFLUORINE ®. Contact the National Poisons Centre on 0800 764 766 (0800 POISON) or +643 479 7248.
Ingestion	For advice, contact the National Poisons Centre on 0800 764 766 (0800 POISON) or +643 479 7248 or a doctor (at once). If swallowed, do not induce vomiting.

PRODUCT NAME **BOC SMOOTHARC STAINLESS STEEL PICKLING GEL (NZ)**

First aid facilities Eye wash facilities and safety shower should be available. Calcium gluconate gel should be readily available wherever the product is used or stored.

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

4.3 Immediate medical attention and special treatment needed

Eye Treatment: Flush the eye with water for at least 15 minutes, continue irrigation with isotonic saline or water until the severe pain of the burn is relieved. Instil several drops of sterile calcium gluconate (10% solution).

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture

Non flammable. May evolve toxic gases (nitrogen oxides, fluorides and hydrogen fluoride) when heated to decomposition.

5.3 Advice for firefighters

Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code

2X
2 Fine Water Spray.
X Wear liquid-tight chemical protective clothing and breathing apparatus. Contain spill and run-off.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Contact emergency services where appropriate.

6.2 Environmental precautions

Prevent product from entering drains and waterways.

6.3 Methods of cleaning up

Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal.

6.4 Reference to other sections

See Sections 8 and 13 for exposure controls and disposal.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities

Store in a cool, dry, well ventilated area, removed from incompatible substances, heat or ignition sources and foodstuffs. Ensure containers are adequately labelled, protected from physical damage and sealed when not in use. Check regularly for leaks or spills. Large storage areas should be bunded and have appropriate ventilation systems.

7.3 Specific end uses

No information provided.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Exposure standards

Ingredient	Reference	TWA		STEL	
		ppm	mg/m ³	ppm	mg/m ³
Hydrofluoric Acid	WES [NZ]	3 (Peak)	2.6 (Peak)	--	--
Nitric acid	WES [NZ]	2	5.2	4	10

Biological limits

No biological limit values have been entered for this product.

8.2 Exposure controls

Engineering controls

Avoid inhalation. Use in well ventilated areas. Where an inhalation risk exists, mechanical extraction ventilation is recommended. Maintain vapour levels below the recommended exposure standard.

PPE

Eye / Face	Wear splash-proof goggles. At high vapour levels, wear a faceshield.
Hands	Wear PVC gloves.
Body	Wear rubber or PVC boots and a PVC apron and impervious coveralls.
Respiratory	Wear a Full-face Type B (Inorganic and Acid gas) respirator. With prolonged use, wear an Air-line respirator.



9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	OPAQUE WHITE GEL
Odour	PUNGENT ACIDIC ODOUR
Flammability	NON FLAMMABLE
Flash point	NOT RELEVANT
Boiling point	NOT AVAILABLE
Melting point	NOT AVAILABLE
Evaporation rate	NOT AVAILABLE
pH	< 1
Vapour density	NOT AVAILABLE
Relative density	1.33 to 1.35
Solubility (water)	SOLUBLE
Vapour pressure	NOT AVAILABLE
Upper explosion limit	NOT RELEVANT
Lower explosion limit	NOT RELEVANT
Partition coefficient	NOT AVAILABLE
Autoignition temperature	NOT AVAILABLE
Decomposition temperature	NOT AVAILABLE
Viscosity	NOT AVAILABLE
Explosive properties	NOT AVAILABLE
Oxidising properties	NOT AVAILABLE
Odour threshold	NOT AVAILABLE

10. STABILITY AND REACTIVITY

10.1 Reactivity

May be corrosive to metals.

PRODUCT NAME **BOC SMOOTHARC STAINLESS STEEL PICKLING GEL (NZ)**

10.2 Chemical stability

Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions

Polymerization is not expected to occur.

10.4 Conditions to avoid

Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials

Incompatible (violently) with combustible materials, metals, reducing agents (e.g. sulphites), alkalis (e.g. sodium hydroxide), ammonia, heat and ignition sources.

10.6 Hazardous decomposition products

May evolve toxic gases (nitrogen oxides, fluorides and hydrogen fluoride) when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity Toxic if swallowed, in contact with skin, and/or if inhaled. Ingestion may result in severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.

Information available for the ingredients:

Ingredient	Oral LD50	Dermal LD50	Inhalation LC50
NITRIC ACID	--	--	2.65 mg/l (Vapours)
HYDROFLUORIC ACID	--	--	342 ppm/1 hour (mouse)

Skin Causes severe burns. Contact may result in burning sensation (delayed), severe and deep burns, discolouration, severe tissue damage and death which may be delayed. May be absorbed through skin with highly toxic effects.

Eye Causes severe burns. Contact may result in irritation, lacrimation, pain, redness and corneal burns with possible serious eye damage.

Sensitisation Not classified as causing skin or respiratory sensitisation.

Mutagenicity Insufficient data available to classify as a mutagen.

Carcinogenicity Insufficient data available to classify as a carcinogen.

Reproductive Insufficient data available to classify as a reproductive toxin.

STOT - single exposure Over exposure may result in mucous membrane irritation of the respiratory tract, coughing, bronchitis, ulceration, bloody nose, lung tissue damage, chemical pneumonitis, pulmonary oedema and death.

STOT - repeated exposure Repeated exposure may result in discolouration of teeth; as well as lung, kidney, liver, ligament and bone (osteosclerosis, skeletal fluorosis) damage.

Aspiration Not expected to present an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Harmful effect due to pH shift. Discharge into the environment should be avoided.

12.2 Persistence and degradability

No information provided.

12.3 Bioaccumulative potential

No information provided.

12.4 Mobility in soil

No information provided.

12.5 Other adverse effects

Avoid release to the environment.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal	Neutralise with lime, weak alkali or similar. For small amounts, absorb with sand or similar and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information (if required).
Legislation	Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD ACCORDING TO LAND TRANSPORT RULE: DANGEROUS GOODS 2005; NZS 5433:2012, UN, IMDG OR IATA



	LAND TRANSPORT (NZS 5433)	SEA TRANSPORT (IMDG / IMO)	AIR TRANSPORT (IATA / ICAO)
14.1 UN Number	2922	2922	2922
14.2 Proper Shipping Name	CORROSIVE LIQUID, TOXIC, N.O.S. (contains nitric acid, hydrofluoric acid)	CORROSIVE LIQUID, TOXIC, N.O.S. (contains nitric acid, hydrofluoric acid)	CORROSIVE LIQUID, TOXIC, N.O.S. (contains nitric acid, hydrofluoric acid)
14.3 Transport hazard classes	8 (6.1)	8 (6.1)	8 (6.1)
14.4 Packing Group	II	II	II

14.5 Environmental hazards

Not a Marine Pollutant.

14.6 Special precautions for user

Hazchem code	2X
EmS	F-A, S-B

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Approval code	HSR002615 (2020)
Group standard	Metal Industry Products (Acutely Toxic, Corrosive) Group Standard 2020
Inventory listings	NEW ZEALAND: NZIoC (New Zealand Inventory of Chemicals) All components are listed on the NZIoC inventory, or are exempt.

16. OTHER INFORMATION

Additional information	ACIDS: When mixing acids with water (diluting), caution must be taken as heat will be generated which causes violent spattering. Always add a small volume of acid to a large volume of water, NEVER the reverse. HYDROFLUORIC ACID: Severe burns and tissue damage have been reported after direct contact with small quantities of low concentration (< 20 %) hydrofluoric acid. An immediate burning sensation and pain is not always apparent but is a delayed effect which may proceed to corrosive tissue damage and toxic systemic effects through absorption. Hydrofluoric acid has the potential to cause permanent tissue damage and to be fatal if contaminated areas are not treated immediately. RESPIRATORS: In general the use of respirators should be limited and engineering controls employed to avoid exposure. If respiratory equipment must be worn ensure correct respirator selection and training is undertaken. Remember that some respirators may be extremely uncomfortable when used for long periods. The use of air powered or air supplied respirators should be considered where prolonged or repeated use is necessary.
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PRODUCT NAME BOC SMOOTHARC STAINLESS STEEL PICKLING GEL (NZ)**PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:**

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as form of product, method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

HEALTH EFFECTS FROM EXPOSURE:

It should be noted that the effects from exposure to this product will depend on several factors including: form of product; frequency and duration of use; quantity used; effectiveness of control measures; protective equipment used and method of application. Given that it is impractical to prepare a report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

Abbreviations

ACGIH	American Conference of Governmental Industrial Hygienists
CAS #	Chemical Abstract Service number - used to uniquely identify chemical compounds
CCID	Chemical Classification and Information Database (HSNO)
CNS	Central Nervous System
EC No.	EC No - European Community Number
EMS	Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
EPA	Environmental Protection Authority [New Zealand]
GHS	Globally Harmonized System
HSNO	Hazardous Substances and New Organisms
IARC	International Agency for Research on Cancer
LC50	Lethal Concentration, 50% / Median Lethal Concentration
LD50	Lethal Dose, 50% / Median Lethal Dose
mg/m ³	Milligrams per Cubic Metre
OEL	Occupational Exposure Limit
pH	relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline).
ppm	Parts Per Million
STEL	Short-Term Exposure Limit
STOT-RE	Specific target organ toxicity (repeated exposure)
STOT-SE	Specific target organ toxicity (single exposure)
TLV	Threshold Limit Value
TWA	Time Weighted Average

Report status

This document has been compiled by RMT on behalf of the manufacturer, importer or supplier of the product and serves as their Safety Data Sheet ('SDS').

It is based on information concerning the product which has been provided to RMT by the manufacturer, importer or supplier or obtained from third party sources and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer, importer or supplier.

While RMT has taken all due care to include accurate and up-to-date information in this SDS, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this SDS.

Prepared by

Risk Management Technologies
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[End of SDS]

Section 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier****Product name:** PC 6182 L BASE**Product code:** PC 6182 L BASE**1.2. Relevant identified uses of the substance or mixture and uses advised against****Use of substance / mixture:** Component for polyurethane systems.**1.3. Details of the supplier of the safety data sheet****Company name:** Stockmeier Urethanes UK Limited

Mylestone House

Sowerby New Road

Sowerby Bridge

West Yorkshire

HX6 1AA

United Kingdom

Tel: +44(0) 1422 835 835**Fax:** +44(0) 1422 839 439**Email:** admin@stockmeier.co.uk**1.4. Emergency telephone number****Emergency tel:** +44(0) 1422 835 835

(office hours only)

Section 2: Hazards identification**2.1. Classification of the substance or mixture****Classification under CLP:** This product has no classification under CLP.**2.2. Label elements****Label elements:** This product has no label elements.**2.3. Other hazards****PBT:** This product is not identified as a PBT/vPvB substance.**Section 3: Composition/information on ingredients****3.2. Mixtures**

SAFETY DATA SHEET

PC 6182 L BASE

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Hazardous ingredients:

1,8-DIAZABICYCLO[5.4.0]UNDEC-7-ENE - REACH registered number(s): 01-2119977097-24-XXXX

EINECS	CAS	PBT / WEL	CLP Classification	Percent
229-713-7	6674-22-2	-	Acute Tox. 3: H301; Skin Corr. 1B: H314	<1%

Contains: * Hydroxylated polyols and non-reactive additives. Ingredients not listed are classified as non-hazardous or at a concentration below reportable levels.

Section 4: First aid measures

4.1. Description of first aid measures

Skin contact: Wash immediately with plenty of soap and water. In the event of symptoms seek medical advice.

Eye contact: Bathe the eye with running water for 15 minutes. Seek medical attention if irritation persists.

Ingestion: Wash out mouth with water. Do not induce vomiting. Consult a doctor.

Inhalation: Move to fresh air. In the event of symptoms seek medical advice.

4.2. Most important symptoms and effects, both acute and delayed

Skin contact: There may be mild irritation at the site of contact.

Eye contact: There may be irritation and redness.

Ingestion: There may be irritation of the throat.

Inhalation: Spray/mists may cause respiratory tract irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Immediate / special treatment: Eye bathing equipment should be available on the premises.

Section 5: Fire-fighting measures

5.1. Extinguishing media

Extinguishing media: Suitable extinguishing media for the surrounding fire should be used. Use water spray to cool containers.

5.2. Special hazards arising from the substance or mixture

Exposure hazards: In combustion emits toxic fumes.

5.3. Advice for fire-fighters

Advice for fire-fighters: Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes.

Section 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions: Refer to section 8 of SDS for personal protection details. Turn leaking containers leak-side up to prevent the escape of liquid.

[cont...]

SAFETY DATA SHEET

PC 6182 L BASE

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6.2. Environmental precautions

Environmental precautions: Do not discharge into drains or rivers. Contain the spillage using bunding.

6.3. Methods and material for containment and cleaning up

Clean-up procedures: Absorb into dry earth or sand. Transfer to a closable, labelled salvage container for disposal by an appropriate method.

6.4. Reference to other sections

Reference to other sections: Refer to section 8 of SDS.

Section 7: Handling and storage

7.1. Precautions for safe handling

Handling requirements: Avoid direct contact with the substance. Ensure there is sufficient ventilation of the area.
Do not handle in a confined space. Avoid the formation or spread of mists in the air.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store in a cool, well ventilated area. Keep container tightly closed. Avoid contact with water or humidity. Protect from frost/do not freeze.

7.3. Specific end use(s)

Specific end use(s): No data available.

Section 8: Exposure controls/personal protection

8.1. Control parameters

Workplace exposure limits: Not applicable.

DNEL/PNEC Values

DNEL / PNEC No data available.

8.2. Exposure controls

Engineering measures: Ensure there is sufficient ventilation of the area.

Respiratory protection: Respiratory protection not required.

Hand protection: Protective gloves.

Eye protection: Tightly fitting safety goggles. Ensure eye bath is to hand.

Skin protection: Protective clothing.

Section 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

State: Liquid

Colour: Blue

Odour: Barely perceptible odour

Evaporation rate: Negligible

Oxidising: Non-oxidising (by EC criteria)

[cont...]

SAFETY DATA SHEET

PC 6182 L BASE

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Solubility in water: Insoluble

Viscosity: No data available.

Boiling point/range°C: >195

Melting point/range°C: No data available.

Flammability limits %: lower: No data available.

upper: No data available.

Flash point°C: >185

Part.coeff. n-octanol/water: No data available.

Autoflammability°C: No data available.

Vapour pressure: No data available.

Relative density: 0.93

pH: No data available.

VOC g/l: No data available.

9.2. Other information

Section 10: Stability and reactivity

10.1. Reactivity

Reactivity: Stable under recommended transport or storage conditions.

10.2. Chemical stability

Chemical stability: Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous reactions: Hazardous reactions will not occur under normal transport or storage conditions.

Decomposition may occur on exposure to conditions or materials listed below.

10.4. Conditions to avoid

Conditions to avoid: Heat. Moist air. Humidity.

10.5. Incompatible materials

Materials to avoid: Strong oxidising agents. Strong acids.

10.6. Hazardous decomposition products

Haz. decomp. products: In combustion emits toxic fumes.

Section 11: Toxicological information

11.1. Information on toxicological effects

Hazardous ingredients:

1,8-DIAZABICYCLO[5.4.0]UNDEC-7-ENE

ORAL	RAT	LD50	215-681	mg/kg
------	-----	------	---------	-------

Toxicity values: Not applicable.

Symptoms / routes of exposure

Skin contact: There may be mild irritation at the site of contact.

Eye contact: There may be irritation and redness.

Ingestion: There may be irritation of the throat.

Inhalation: Spray/mists may cause respiratory tract irritation.

[cont...]

SAFETY DATA SHEET

PC 6182 L BASE

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Section 12: Ecological information

12.1. Toxicity

Hazardous ingredients:

1,8-DIAZABICYCLO[5.4.0]UNDEC-7-ENE

FISH	96H LC50	100-220	mg/l
------	----------	---------	------

Ecotoxicity values: Not applicable.

12.2. Persistence and degradability

Persistence and degradability: No data available.

12.3. Bioaccumulative potential

Bioaccumulative potential: No data available.

12.4. Mobility in soil

Mobility: Insoluble in water.

12.5. Results of PBT and vPvB assessment

PBT identification: This product is not identified as a PBT/vPvB substance.

12.6. Other adverse effects

Other adverse effects: Negligible ecotoxicity.

Section 13: Disposal considerations

13.1. Waste treatment methods

Disposal operations: Transfer to a suitable container and arrange for collection by specialised disposal company.

NB: The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

Section 14: Transport information

Transport class: This product does not require a classification for transport.

Section 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Specific regulations: Not applicable.

15.2. Chemical Safety Assessment

Chemical safety assessment: A chemical safety assessment has not been carried out for the substance or the mixture by the supplier.

Section 16: Other information

[cont...]

SAFETY DATA SHEET

PC 6182 L BASE

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Other information

Other information: This safety data sheet is prepared in accordance with Commission Regulation (EU) No 2015/830.

* indicates text in the SDS which has changed since the last revision.

Depending on the production parameters, any uncovered surfaces of thermoset moldings produced using this raw material may contain traces of substances (e.g. starting and reaction products, catalysts, release agents) with hazardous characteristics.

Skin contact with traces of these substances must be avoided. When demolding or otherwise handling freshly molded thermoset parts, protective textile gloves must be worn as a minimum.

Phrases used in s.2 and s.3: H301: Toxic if swallowed.

H314: Causes severe skin burns and eye damage.

Legal disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.

**CMP PRODUCTS
Q6 QUORUM BUSINESS PARK
BENTON LANE
NEWCASTLE UPON TYNE
TYNE & WEAR
NE12 8BT
United Kingdom**

Section 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier****Product name:** PC 6182 F ACTIVATOR**Product code:** PC 6182 F ACTIVATOR**1.2. Relevant identified uses of the substance or mixture and uses advised against****Use of substance / mixture:** Di-/polyisocyanate components for the production of polyurethanes.**1.3. Details of the supplier of the safety data sheet****Company name:** Stockmeier Urethanes UK Limited

Milestone House

Sowerby New Road

Sowerby Bridge

West Yorkshire

HX6 1AA

United Kingdom

Tel: +44(0) 1422 835 835**Fax:** +44(0) 1422 839 439**Email:** admin@stockmeier.co.uk**1.4. Emergency telephone number****Emergency tel:** +44(0) 1422 835 835

(office hours only)

Section 2: Hazards identification**2.1. Classification of the substance or mixture****Classification under CLP:** Acute Tox. 4: H332; Carc. 2: H351; Eye Irrit. 2: H319; Resp. Sens. 1: H334; Skin Irrit. 2: H315; Skin Sens. 1: H317; STOT RE 2: H373; STOT SE 3: H335; -: EUH204**Most important adverse effects:** Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause respiratory irritation. Suspected of causing cancer ([lungs]). May cause damage to organs through prolonged or repeated exposure. Harmful if inhaled. Contains isocyanates. May produce an allergic reaction.**2.2. Label elements****Label elements:****Hazard statements:** H315: Causes skin irritation.

H317: May cause an allergic skin reaction.

SAFETY DATA SHEET

PC 6182 F ACTIVATOR

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H319: Causes serious eye irritation.

H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.

H335: May cause respiratory irritation.

H351: Suspected of causing cancer ([lungs]).

H373: May cause damage to organs through prolonged or repeated exposure.

H332: Harmful if inhaled.

EUH204: Contains isocyanates. May produce an allergic reaction.

Hazard pictograms: GHS07: Exclamation mark

GHS08: Health hazard



Signal words: Danger

Precautionary statements: * P260: Do not breathe dust/fume/gas/mist/vapours/spray.

P280: Wear protective clothing.

P284: Wear respiratory protection.

P302+P352: IF ON SKIN: Wash with plenty of water.

P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308+P313: IF exposed or concerned: Get medical advice/attention.

2.3. Other hazards

Other hazards: Reacts slowly with water to produce carbon dioxide which may rupture closed containers. This reaction accelerates at higher temperatures. Persons who suffer from hypersensitivity of the respiratory tract (e.g. asthmatics and chronic bronchitis sufferers) should avoid handling this product. Symptoms affecting the respiratory tract can also occur several hours after overexposure.

PBT: This product is not identified as a PBT/vPvB substance.

Section 3: Composition/information on ingredients

3.2. Mixtures

Hazardous ingredients:

DIPHENYLMETHANE DIISOCYANATE, ISOMERS AND HOMOLOGUES - REACH registered number(s): EXEMPT - REACH POLYMER

EINECS	CAS	PBT / WEL	CLP Classification	Percent
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[cont...]

SAFETY DATA SHEET

PC 6182 F ACTIVATOR

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-	9016-87-9	-	Eye Irrit. 2: H319; Acute Tox. 4: H332; Carc. 2: H351; Resp. Sens. 1: H334; Skin Irrit. 2: H315; Skin Sens. 1: H317; STOT RE 2: H373; STOT SE 3: H335; -: EUH204	>90%
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Section 4: First aid measures

4.1. Description of first aid measures

Skin contact: Wash immediately with plenty of soap and water. In the event of symptoms seek medical advice. Consult a doctor in the event of a skin reaction.

Eye contact: Bathe the eye with running water for 15 minutes. Consult a doctor.

Ingestion: Wash out mouth with water. Do not induce vomiting. Consult a doctor.

Inhalation: Remove casualty from exposure ensuring one's own safety whilst doing so. Move to fresh air. Consult a doctor. Consult a physician immediately if symptoms such as shortness of breath or asthma are observed.

4.2. Most important symptoms and effects, both acute and delayed

Skin contact: There may be irritation and redness at the site of contact. An itchy rash may occur at the site of contact. May cause an allergic skin reaction.

Eye contact: There may be irritation and redness. The eyes may water profusely.

Ingestion: There may be irritation of the throat. Inhalation of fumes from the stomach may cause symptoms similar to direct inhalation.

Inhalation: Harmful by inhalation. Exposure may cause coughing or wheezing. There may be a feeling of tightness in the chest with shortness of breath. May cause allergy or asthma symptoms.

Delayed / immediate effects: Delayed effects can be expected after long-term exposure.

4.3. Indication of any immediate medical attention and special treatment needed

Immediate / special treatment: Eye bathing equipment should be available on the premises.

Section 5: Fire-fighting measures

5.1. Extinguishing media

Extinguishing media: Suitable extinguishing media for the surrounding fire should be used. Use water spray to cool containers.

5.2. Special hazards arising from the substance or mixture

Exposure hazards: In combustion emits toxic fumes.

5.3. Advice for fire-fighters

Advice for fire-fighters: Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes.

[cont...]

SAFETY DATA SHEET

PC 6182 F ACTIVATOR

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Section 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions: Refer to section 8 of SDS for personal protection details. Evacuate the area immediately. Mark out the contaminated area with signs and prevent access to unauthorised personnel. Turn leaking containers leak-side up to prevent the escape of liquid.

6.2. Environmental precautions

Environmental precautions: Do not discharge into drains or rivers. Contain the spillage using bunding.

6.3. Methods and material for containment and cleaning up

Clean-up procedures: Clean-up should be dealt with only by qualified personnel familiar with the specific substance. Breathing protection required during clean-up operation. Remove mechanically; cover the remainder with wet, absorbant material (e.g. sawdust, chemical binder based on calcium silicate hydrate, sand). After approx 1 hour transfer to waste container and DO NOT SEAL (evolution of CO₂). Neutralise small spillages with decontaminant. Ensure adequate ventilation.

6.4. Reference to other sections

Reference to other sections: Refer to section 8 of SDS.

Section 7: Handling and storage

7.1. Precautions for safe handling

Handling requirements: Ensure there is sufficient ventilation of the area. Avoid the formation or spread of mists in the air. Do not handle in a confined space. Avoid direct contact with the substance. Protect against moisture.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Store in a cool, well ventilated area. Keep container tightly closed. Avoid contact with water or humidity. Protect from frost/do not freeze.

7.3. Specific end use(s)

Specific end use(s): No data available.

Section 8: Exposure controls/personal protection

8.1. Control parameters

Hazardous ingredients:

DIPHENYLMETHANE DIISOCYANATE, ISOMERS AND HOMOLOGUES

[cont...]

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PC 6182 F ACTIVATOR

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Workplace exposure limits:

State	8 hour TWA	15 min. STEL	8 hour TWA	15 min. STEL
UK	0.02 mg/m ³	0.07 mg/m ³	-	-

Respirable dust:

DNEL/PNEC Values

DNEL / PNEC No data available.

8.2. Exposure controls

Engineering measures: Ensure there is sufficient ventilation of the area. Observe any occupational exposure limits for the product and/or ingredients.

Respiratory protection: Respiratory protection must be used if airborne concentration exceeds the Workplace Exposure Limit. Combination filter type A-P2 (EN 14387).

Hand protection: Protective gloves.

Eye protection: Tightly fitting safety goggles. Ensure eye bath is to hand.

Skin protection: Protective clothing.

Environmental: Prevent from entering in public sewers or the immediate environment.

Section 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

State: Liquid

Colour: Yellow

Odour: Perceptible odour

Evaporation rate: Negligible

Oxidising: Non-oxidising (by EC criteria)

Solubility in water: Reacts with water.

Also soluble in: Most organic solvents.

Viscosity: Oily

Boiling point/range°C: 330

Melting point/range°C: No data available.

Flammability limits %: lower: No data available.

upper: No data available.

Flash point°C: >204

Part.coeff. n-octanol/water: No data available.

Autoflammability°C: >500

Vapour pressure: 7 x 10⁻⁶ hPa (20C)

Relative density: 1.23

pH: Approx. 7

VOC g/l: No data available.

9.2. Other information

Other information: No data available.

Section 10: Stability and reactivity

10.1. Reactivity

Reactivity: Stable under recommended transport or storage conditions.

[cont...]

SAFETY DATA SHEET

PC 6182 F ACTIVATOR

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10.2. Chemical stability

Chemical stability: Stable under normal conditions.

10.3. Possibility of hazardous reactions

Hazardous reactions: Reacts with alcohols, amines, bases and water with release of CO₂; risk of pressure build-up in containers/confined areas.

10.4. Conditions to avoid

Conditions to avoid: Heat. Moist air. Humidity.

10.5. Incompatible materials

Materials to avoid: Strong oxidising agents. Strong acids. Strong bases. Water. Alcohols. Amines.

10.6. Hazardous decomposition products

Haz. decomp. products: In combustion emits toxic fumes.

Section 11: Toxicological information

11.1. Information on toxicological effects

Hazardous ingredients:

DIPHENYLMETHANE DIISOCYANATE, ISOMERS AND HOMOLOGUES

DERMAL	RBT	LD50	>2000	mg/kg
DUST/MIST	RAT	4H LC50	490	mg/l
ORAL	RAT	LD50	>2000	mg/kg

Relevant hazards for product:

Hazard	Route	Basis
Acute toxicity (ac. tox. 4)	INH	Hazardous: calculated
Skin corrosion/irritation	DRM	Hazardous: calculated
Serious eye damage/irritation	OPT	Hazardous: calculated
Respiratory/skin sensitisation	INH DRM	Hazardous: calculated
Carcinogenicity	--	Hazardous: calculated
STOT-single exposure	INH	Hazardous: calculated
STOT-repeated exposure	-	Hazardous: calculated

Symptoms / routes of exposure

Skin contact: There may be irritation and redness at the site of contact. An itchy rash may occur at the site of contact. May cause an allergic skin reaction.

Eye contact: There may be irritation and redness. The eyes may water profusely.

Ingestion: There may be irritation of the throat. Inhalation of fumes from the stomach may cause symptoms similar to direct inhalation.

Inhalation: Harmful by inhalation. Exposure may cause coughing or wheezing. There may be a

[cont...]

SAFETY DATA SHEET

PC 6182 F ACTIVATOR

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feeling of tightness in the chest with shortness of breath. May cause allergy or asthma symptoms.

Delayed / immediate effects: Delayed effects can be expected after long-term exposure.

Other information: Please contact Stockmeier Urethanes' Health and Safety Department for further information and industry guidance/studies on the safe use of this product. Alternatively further information is available at www.isopa.org

Section 12: Ecological information

12.1. Toxicity

Hazardous ingredients:

DIPHENYLMETHANE DIISOCYANATE, ISOMERS AND HOMOLOGUES

Daphnia magna	48H EC50	>1000	mg/l
ZEBRAFISH (Brachydanio rerio)	96H LC50	>1000	mg/l

12.2. Persistence and degradability

Persistence and degradability: No data available.

12.3. Bioaccumulative potential

Bioaccumulative potential: No data available.

12.4. Mobility in soil

Mobility: Formation of insoluble polyurea.

12.5. Results of PBT and vPvB assessment

PBT identification: This product is not identified as a PBT/vPvB substance.

12.6. Other adverse effects

Other adverse effects: Negligible ecotoxicity.

Section 13: Disposal considerations

13.1. Waste treatment methods

Disposal operations: Transfer to a suitable container and arrange for collection by specialised disposal company.

Waste code number: 08 05 01*

NB: The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

Section 14: Transport information

Transport class: This product does not require a classification for transport.

Section 15: Regulatory information

[cont...]

SAFETY DATA SHEET

PC 6182 F ACTIVATOR

Page: 8

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Specific regulations: Not applicable.

15.2. Chemical Safety Assessment

Chemical safety assessment: A chemical safety assessment has not been carried out for the substance or the mixture by the supplier.

Section 16: Other information

Other information

Other information: This safety data sheet is prepared in accordance with Commission Regulation (EU) No 2015/830.

* indicates text in the SDS which has changed since the last revision.

Depending on the production parameters, any uncovered surfaces of thermoset moldings produced using this raw material may contain traces of substances (e.g. starting and reaction products, catalysts, release agents) with hazardous characteristics.

Skin contact with traces of these substances must be avoided. When demolding or otherwise handling freshly molded thermoset parts, protective textile gloves must be worn as a minimum.

Phrases used in s.2 and s.3: EUH204: Contains isocyanates. May produce an allergic reaction.
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H319: Causes serious eye irritation.
H332: Harmful if inhaled.
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335: May cause respiratory irritation.
H351: Suspected of causing cancer ([lungs]).
H351: Suspected of causing cancer.
H373: May cause damage to organs through prolonged or repeated exposure.

Legal disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.



RTD Spray

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878
Issue date: 06/02/2023 Revision date: 06/02/2023 Supersedes version of: 13/10/2022 Version: 11.3

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Trade name : RTD Spray
UFI : TGM0-S0CK-H00P-JV8U
Vaporizer : Aerosol

1.2. Relevant identified uses of the substance or mixture and uses advised against

1.2.1. Relevant identified uses

Main use category : Industrial use, Professional use
Industrial/Professional use spec : Industrial
For professional use only
Use of the substance/mixture : Lubricants, Greases and Release Products

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Manufacturer

ROCOL a division of ITW Ltd
Rocol House Wakefield Rd, Swillington
LS26 8BS Leeds – West Yorkshire
United Kingdom
T +44 (0)113 232 2600
customer.service@rocol.com - www.rocol.com

1.4. Emergency telephone number

Emergency number : +44 (0)113 232 2600

Country	Organisation/Company	Address	Emergency number	Comment
United Kingdom	National Poisons Information Service (Birmingham Centre) City Hospital	Dudley Road B18 7QH	0344 892 0111	Only for healthcare professionals

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Aerosol, Category 1 H222;H229
Skin corrosion/irritation, Category 2 H315
Reproductive toxicity, Additional category, Effects on or via lactation H362
Specific target organ toxicity – Single exposure, Category 3, Narcosis H336
Hazardous to the aquatic environment – Acute Hazard, Category 1 H400
Hazardous to the aquatic environment – Chronic Hazard, Category 1 H410
Full text of H- and EUH-statements: see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

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according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)



Signal word (CLP)

Contains

Hazard statements (CLP)

Precautionary statements (CLP)

EUH-statements

- : Danger
- : C14-C17 CHLORINATED PARAFFIN; HYDROCARBONS, C7, N-ALKANES, ISOALKANES, CYCLICS
- : H222 - Extremely flammable aerosol.
H229 - Pressurised container: May burst if heated.
H315 - Causes skin irritation.
H336 - May cause drowsiness or dizziness.
H362 - May cause harm to breast-fed children.
H410 - Very toxic to aquatic life with long lasting effects.
- : P410+P412 - Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211 - Do not spray on an open flame or other ignition source.
P251 - Do not pierce or burn, even after use.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P263 - Avoid contact during pregnancy and while nursing.
- : EUH208 - Contains 2-(4-methylcyclohex-3-en-1-yl)propan-2-ol(8000-41-7). May produce an allergic reaction.

2.3. Other hazards

Contains PBT/vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII

Component	
C14-C17 CHLORINATED PARAFFIN (85535-85-9)	This substance meets the PBT criteria of REACH regulation, annex XIII This substance meets the vPvB criteria of REACH regulation, annex XIII

The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %

Component	
HYDROCARBON AEROSOL PROPELLANT (<0.1% 1,3-BUTADIENE)(68476-85-7)	The mixture does not contain substance(s) included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at a concentration equal to or greater than 0,1 %
C14-C17 CHLORINATED PARAFFIN(85535-85-9)	The substance is not included in the list established in accordance with Article 59(1) of REACH for having endocrine disrupting properties, or is not identified as having endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

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according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
HYDROCARBON AEROSOL PROPELLANT (<0.1% 1,3-BUTADIENE) substance with national workplace exposure limit(s) (GB) (Note K)(Note S)(Note U)	CAS-No.: 68476-85-7 EC-No.: 270-704-2 EC Index-No.: 649-202-00-6 REACH-no: Exempt	30 – 50	Flam. Gas 1A, H220 Press. Gas (Comp.), H280 Flam. Liq. Not classified Muta. Not classified Carc. Not classified
C14-C17 CHLORINATED PARAFFIN substance listed as REACH Candidate (Medium-chain chlorinated paraffins (MCCP)) PBT substance; vPvB substance	CAS-No.: 85535-85-9 EC-No.: 287-477-0 EC Index-No.: 602-095-00-X REACH-no: 01-2119519269-33	15 – 30	Lact., H362 Aquatic Acute 1, H400 (M=100) Aquatic Chronic 1, H410
HYDROCARBONS, C7, N-ALKANES, ISOALKANES, CYCLICS	CAS-No.: 64742-49-0 EC-No.: 927-510-4 EC Index-No.: 649-328-00-1 REACH-no: 01-2119475515-33	15 – 30	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
2-(4-methylcyclohex-3-en-1-yl)propan-2-ol	CAS-No.: 8000-41-7 EC-No.: 701-188-3 REACH-no: 01-2119553062-49	0.1 – 1	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Asp. Tox. 1, H304 Aquatic Chronic 2, H411

Note K: The harmonised classification as a carcinogen or mutagen applies unless it can be shown that the substance contains less than 0,1 % w/w 1,3- butadiene (Einecs No 203-450-8), in which case a classification in accordance with Title II of this Regulation shall be performed also for those hazard classes. Where the substance is not classified as a carcinogen or mutagen, at least the precautionary statements (P102-)P210-P403 shall apply.

Note S: This substance may not require a label according to Article 17 (see Section 1.3 of Annex I) (Table 3).

Note U: When put on the market gases have to be classified as 'Gases under pressure', in one of the groups compressed gas, liquefied gas, refrigerated liquefied gas or dissolved gas. The group depends on the physical state in which the gas is packaged and therefore has to be assigned case by case. The following codes are assigned: Press. Gas (Comp.), Press. Gas (Liq.), Press. Gas (Ref. Liq.), Press. Gas (Diss.). Aerosols shall not be classified as gases under pressure (See Annex I, Part 2, Section 2.3.2.1, Note 2).

Product subject to CLP Article 1.1.3.7. The disclosure rules of the components is modified in this case.

Full text of H- and EUH-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice.
First-aid measures after inhalation	: Allow affected person to breathe fresh air. Allow the victim to rest.
First-aid measures after eye contact	: Direct contact with the eyes is likely to be irritating. Rinse immediately with plenty of water. Obtain medical attention if pain, blinking or redness persists.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/effects after inhalation	: May cause drowsiness or dizziness. May cause an allergic skin reaction.
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4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

RTD Spray

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according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Extremely flammable aerosol.
Explosion hazard : Heat may build pressure, rupturing closed containers, spreading fire and increasing risk of burns and injuries.

5.3. Advice for firefighters

Firefighting instructions : Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire fighting water from entering the environment. DO NOT fight fire when fire reaches explosives. Evacuate area.
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : No open flames. No smoking. Isolate from fire, if possible, without unnecessary risk. Remove ignition sources. Use special care to avoid static electric charges.

6.1.1. For non-emergency personnel

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.
Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect spillage.

6.4. Reference to other sections

See Section 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Hazardous waste due to potential risk of explosion. Do not pierce or burn, even after use.
Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapour. Do not spray on an open flame or other ignition source. Avoid breathing dust/fume/gas/mist/vapours/spray. Avoid contact during pregnancy/while nursing. Do not breathe dust/fume/gas/mist/vapours/spray.
Hygiene measures : Do not eat, drink or smoke when using this product. Wash hands, forearms and face thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Proper grounding procedures to avoid static electricity should be followed.

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according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Storage conditions	: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container closed when not in use. Do not expose to temperatures exceeding 50 °C/ 122 °F.
Incompatible products	: Strong bases. Strong acids.
Incompatible materials	: Sources of ignition. Direct sunlight. Heat sources.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

HYDROCARBON AEROSOL PROPELLANT (<0.1% 1,3-BUTADIENE) (68476-85-7)	
United Kingdom - Occupational Exposure Limits	
Local name	Liquefied petroleum gas
WEL TWA (OEL TWA) [1]	1750 mg/m³
WEL TWA (OEL TWA) [2]	1000 ppm
WEL STEL (OEL STEL)	2180 mg/m³
WEL STEL (OEL STEL) [ppm]	1250 ppm
Remark	Carc (Capable of causing cancer and/or heritable genetic damage (only applies if LPG contains more than 0.1% of buta-1,3-diene))
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

No additional information available

8.2.2. Personal protection equipment

Personal protective equipment:

Avoid all unnecessary exposure.

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection:

Chemical goggles or safety glasses

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according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

8.2.2.2. Skin protection

Hand protection:

Wear protective gloves. Nitrile rubber gloves

8.2.2.3. Respiratory protection

Respiratory protection:

In case of inadequate ventilation wear respiratory protection. Wear a respirator conforming to EN140 with Type A filter or better

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Consumer exposure controls:

Avoid contact during pregnancy/while nursing.

Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: brown.
Odour	: Characteristic odour.
Odour threshold	: Not available
Melting point	: Not available
Freezing point	: Not available
Boiling point	: < 0 °C
Flammability	: Not available
Explosive limits	: Not available
Lower explosion limit	: Not available
Upper explosion limit	: Not available
Flash point	: Not applicable
Auto-ignition temperature	: > 200 °C
Decomposition temperature	: Not available
pH	: Not available
Viscosity, kinematic	: Not available
Solubility	: insoluble in water.
Partition coefficient n-octanol/water (Log Kow)	: Not available
Vapour pressure	: Not available
Vapour pressure at 50°C	: Not available
Density	: Not available
Relative density	: Not available
Relative vapour density at 20°C	: Not available
Particle characteristics	: Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

% of flammable ingredients : 60.1774 %

9.2.2. Other safety characteristics

VOC content : 445 g/l

SECTION 10: Stability and reactivity

10.1. Reactivity

Extremely flammable aerosol.

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according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

10.2. Chemical stability

Extremely flammable aerosol. Contains gas under pressure; may explode if heated. Extreme risk of explosion by shock, friction, fire or other sources of ignition.

10.3. Possibility of hazardous reactions

Not established.

10.4. Conditions to avoid

Direct sunlight. Extremely high or low temperatures. Heat. Sparks. Open flame. Overheating.

10.5. Incompatible materials

Strong acids. Strong bases.

10.6. Hazardous decomposition products

fume. Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity (oral) : Not classified

Acute toxicity (dermal) : Not classified

Acute toxicity (inhalation) : Not classified

HYDROCARBON AEROSOL PROPELLANT (<0.1% 1,3-BUTADIENE) (68476-85-7)

LC50 Inhalation - Rat > 20 mg/l/4h

C14-C17 CHLORINATED PARAFFIN (85535-85-9)

LD50 oral rat > 4000 mg/kg bodyweight Animal: rat

LD50 dermal rabbit > 13500 mg/kg bodyweight Animal: rabbit

2-(4-methylcyclohex-3-en-1-yl)propan-2-ol (8000-41-7)

LD50 oral rat > 2000 mg/kg

LD50 dermal rat > 2000 mg/kg

HYDROCARBONS, C7, N-ALKANES, ISOALKANES, CYCLICS (64742-49-0)

LD50 dermal rat 2800 – 3100 mg/kg bodyweight Animal: rat

LC50 Inhalation - Rat > 23.3 mg/l air Animal: rat, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity)

Skin corrosion/irritation : Causes skin irritation.

Additional information : Repeated exposure may cause skin dryness or cracking.

Serious eye damage/irritation : Not classified

Additional information : Based on available data, the classification criteria are not met

Respiratory or skin sensitisation : Not classified

Additional information : Based on available data, the classification criteria are not met

Germ cell mutagenicity : Not classified

Additional information : Based on available data, the classification criteria are not met

Carcinogenicity : Not classified

Additional information : Based on available data, the classification criteria are not met

Reproductive toxicity : May cause harm to breast-fed children.

Additional information : May cause harm to breast-fed children.

STOT-single exposure : May cause drowsiness or dizziness.

Additional information : Based on available data, the classification criteria are not met

HYDROCARBONS, C7, N-ALKANES, ISOALKANES, CYCLICS (64742-49-0)

STOT-single exposure May cause drowsiness or dizziness.

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STOT-repeated exposure : Not classified
Additional information : Based on available data, the classification criteria are not met

C14-C17 CHLORINATED PARAFFIN (85535-85-9)

NOAEL (oral, rat, 90 days)	100 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
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HYDROCARBONS, C7, N-ALKANES, ISOALKANES, CYCLICS (64742-49-0)

LOAEC (inhalation, rat, vapour, 90 days)	16.6 mg/l air Animal: rat, Animal sex: male
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NOAEC (inhalation, rat, vapour, 90 days)	3.3 mg/l air Animal: rat, Animal sex: male
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Aspiration hazard : Not classified
Additional information : Based on available data, the classification criteria are not met

RTD Spray

Vaporizer	Aerosol
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2-(4-methylcyclohex-3-en-1-yl)propan-2-ol (8000-41-7)

Viscosity, kinematic	8 – 10 mm²/s
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HYDROCARBONS, C7, N-ALKANES, ISOALKANES, CYCLICS (64742-49-0)

Viscosity, kinematic	0.67 mm²/s Temp.: '20°C' Parameter: 'kinematic viscosity (in mm²/s)'
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Hydrocarbon	Yes
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11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

No additional information available

11.2.2. Other information

Potential adverse human health effects and symptoms : Based on available data, the classification criteria are not met

SECTION 12: Ecological information

12.1. Toxicity

Ecology - water : Very toxic to aquatic life.
Hazardous to the aquatic environment, short-term (acute) : Very toxic to aquatic life.
Hazardous to the aquatic environment, long-term (chronic) : Very toxic to aquatic life with long lasting effects.

C14-C17 CHLORINATED PARAFFIN (85535-85-9)

LC50 - Fish [1]	> 10000 mg/l Test organisms (species): Alburnus alburnus
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LC50 - Fish [2]	> 5000 mg/l Test organisms (species): Alburnus alburnus
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EC50 - Crustacea [1]	0.0059 mg/l Test organisms (species): Daphnia magna
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EC50 - Other aquatic organisms [1]	0.006 mg/l
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EC50 72h - Algae [1]	> 3.2 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
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EC50 96h - Algae [1]	> 3.2 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
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LOEC (chronic)	0.018 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
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NOEC (chronic)	0.01 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
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RTD Spray

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HYDROCARBONS, C7, N-ALKANES, ISOALKANES, CYCLICS (64742-49-0)	
LC50 - Fish [1]	1 – 10 mg/l
LOEC (chronic)	0.32 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC (chronic)	0.17 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC chronic fish	< 10 mg/l
NOEC chronic crustacea	< 1 mg/l

12.2. Persistence and degradability

RTD Spray	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

RTD Spray	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

Component	
C14-C17 CHLORINATED PARAFFIN (85535-85-9)	This substance meets the PBT criteria of REACH regulation, annex XIII This substance meets the vPvB criteria of REACH regulation, annex XIII

12.6. Endocrine disrupting properties

No additional information available

12.7. Other adverse effects

Additional information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations. Container under pressure. Do not drill or burn even after use. Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

Additional information : Flammable vapours may accumulate in the container.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
UN 1950	UN 1950	UN 1950	UN 1950	UN 1950
14.2. UN proper shipping name				
AEROSOLS	AEROSOLS	Aerosols, flammable	AEROSOLS	AEROSOLS

RTD Spray

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according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

ADR	IMDG	IATA	ADN	RID
Transport document description				
UN 1950 AEROSOLS, 2.1, (D), ENVIRONMENTALLY HAZARDOUS	UN 1950 AEROSOLS, 2.1, MARINE POLLUTANT/ENVIRONMENTALLY HAZARDOUS	UN 1950 Aerosols, flammable, 2.1, ENVIRONMENTALLY HAZARDOUS	UN 1950 AEROSOLS, 2.1, ENVIRONMENTALLY HAZARDOUS	UN 1950 AEROSOLS, 2.1, ENVIRONMENTALLY HAZARDOUS
14.3. Transport hazard class(es)				
2.1	2.1	2.1	2.1	2.1
14.4. Packing group				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards				
Dangerous for the environment: Yes	Dangerous for the environment: Yes Marine pollutant: Yes	Dangerous for the environment: Yes	Dangerous for the environment: Yes	Dangerous for the environment: Yes
No supplementary information available				

14.6. Special precautions for user

Overland transport

Classification code (ADR) : 5F
 Special provisions (ADR) : 190, 327, 344, 625
 Limited quantities (ADR) : 1I
 Excepted quantities (ADR) : E0
 Packing instructions (ADR) : P207, LP200
 Special packing provisions (ADR) : PP87, RR6, L2
 Mixed packing provisions (ADR) : MP9
 Transport category (ADR) : 2
 Special provisions for carriage - Packages (ADR) : V14
 Special provisions for carriage - Loading, unloading and handling (ADR) : CV9, CV12
 Special provisions for carriage - Operation (ADR) : S2
 Tunnel restriction code (ADR) : D

Transport by sea

Special provisions (IMDG) : 63, 190, 277, 327, 344, 381, 959
 Packing instructions (IMDG) : P207, LP200
 Special packing provisions (IMDG) : PP87, L2
 EmS-No. (Fire) : F-D
 EmS-No. (Spillage) : S-U
 Stowage category (IMDG) : None
 Stowage and handling (IMDG) : SW1, SW22
 Segregation (IMDG) : SG69

Air transport

PCA Excepted quantities (IATA) : E0
 PCA Limited quantities (IATA) : Y203
 PCA limited quantity max net quantity (IATA) : 30kgG
 PCA packing instructions (IATA) : 203
 PCA max net quantity (IATA) : 75kg
 CAO packing instructions (IATA) : 203
 CAO max net quantity (IATA) : 150kg
 Special provisions (IATA) : A145, A167, A802

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ERG code (IATA) : 10L

Inland waterway transport

Classification code (ADN) : 5F
Special provisions (ADN) : 190, 327, 344, 625
Limited quantities (ADN) : 1 L
Excepted quantities (ADN) : E0
Equipment required (ADN) : PP, EX, A
Ventilation (ADN) : VE01, VE04
Number of blue cones/lights (ADN) : 1

Rail transport

Classification code (RID) : 5F
Special provisions (RID) : 190, 327, 344, 625
Limited quantities (RID) : 1L
Excepted quantities (RID) : E0
Packing instructions (RID) : P207, LP200
Special packing provisions (RID) : PP87, RR6, L2
Mixed packing provisions (RID) : MP9
Transport category (RID) : 2
Special provisions for carriage – Packages (RID) : W14
Special provisions for carriage - Loading, unloading and handling (RID) : CW9, CW12
Colis express (express parcels) (RID) : CE2
Hazard identification number (RID) : 23

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

15.1.1. EU-Regulations

REACH Annex XVII (Restriction List)

Contains no substance(s) listed on REACH Annex XVII (Restriction Conditions)

REACH Annex XIV (Authorisation List)

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

REACH Candidate List (SVHC)

Contains substance(s) listed on the REACH Candidate List in concentrations $\geq 0.1\%$ or SCL: Medium-chain chlorinated paraffins (MCCP) (EC 287-477-0, CAS 85535-85-9)

PIC Regulation (Prior Informed Consent)

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

POP Regulation (Persistent Organic Pollutants)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

Ozone Regulation (1005/2009)

Contains no substance(s) listed on the Ozone Depletion list (Regulation EU 1005/2009 on substances that deplete the ozone layer)

VOC Directive (2004/42)

VOC content : 445 g/l

Explosives Precursors Regulation (2019/1148)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on the manufacture and the placing on market of certain substances used in the illicit manufacture of narcotic drugs and psychotropic substances)

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according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

For the following substances of this mixture a chemical safety assessment has been carried out:

C14-C17 CHLORINATED PARAFFIN

SECTION 16: Other information

Indication of changes			
Section	Changed item	Change	Comments
	Supersedes version of	Added	
	Issue date	Added	
	Revision date	Modified	

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information : None.

Full text of H- and EUH-statements:	
Aquatic Acute 1	Hazardous to the aquatic environment – Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment – Chronic Hazard, Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment – Chronic Hazard, Category 2
Asp. Tox. 1	Aspiration hazard, Category 1
Carc. Not classified	Carcinogenicity Not classified
EUH208	Contains 2-(4-methylcyclohex-3-en-1-yl)propan-2-ol(8000-41-7). May produce an allergic reaction.
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Gas 1A	Flammable gases, Category 1A
Flam. Liq. 2	Flammable liquids, Category 2
Flam. Liq. Not classified	Flammable liquids Not classified
H220	Extremely flammable gas.
H222	Extremely flammable aerosol.
H225	Highly flammable liquid and vapour.
H229	Pressurised container: May burst if heated.
H280	Contains gas under pressure; may explode if heated.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H362	May cause harm to breast-fed children.
H400	Very toxic to aquatic life.

RTD Spray

Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Full text of H- and EUH-statements:	
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
Lact.	Reproductive toxicity, Additional category, Effects on or via lactation
Muta. Not classified	Germ cell mutagenicity Not classified
Press. Gas (Comp.)	Gases under pressure : Compressed gas
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Narcosis

Safety Data Sheet (SDS), EU

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.



CRC (NZ) Universal Silicone Sealant

CRC Industries (CRC Industries New Zealand)

Chemwatch: 4790-65

Version No: 5.1

Safety Data Sheet according to the Health and Safety at Work (Hazardous Substances) Regulations 2017

Chemwatch Hazard Alert Code: 3

Issue Date: 10/03/2023

Print Date: 22/03/2023

S.GHS.NZL.EN

SECTION 1 Identification of the substance / mixture and of the company / undertaking

Product Identifier

Product name	CRC (NZ) Universal Silicone Sealant
Chemical Name	Not Applicable
Synonyms	silicone sealant
Chemical formula	Not Applicable
Other means of identification	Not Available

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Sealing glass, metals and plastics, etc.
	Cured material solid has high heat resistance, is practically non combustible, but is decomposed by near red heat

Details of the manufacturer or supplier of the safety data sheet

Registered company name	CRC Industries (CRC Industries New Zealand)
Address	10 Highbrook Drive East Tamaki Auckland New Zealand
Telephone	+64 9 272 2700
Fax	+64 9 274 9696
Website	www.crc.co.nz
Email	customerservices@crc.co.nz

Emergency telephone number

Association / Organisation	CRC Industries (CRC Industries New Zealand)	CHEMWATCH EMERGENCY RESPONSE (24/7)
Emergency telephone numbers	NZ Poisons Centre 0800 POISON (0800 764 766)	+64 800 700 112
Other emergency telephone numbers	111 (NZ Emergency Services)	+61 3 9573 3188

Once connected and if the message is not in your preferred language then please dial 01

SECTION 2 Hazards identification

Classification of the substance or mixture

Classification ^[1]	Skin Corrosion/Irritation Category 2, Serious Eye Damage/Eye Irritation Category 1
Legend:	1. Classified by Chemwatch; 2. Classification drawn from CCID EPA NZ; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI
Determined by Chemwatch using GHS/HSNO criteria	6.3A, 8.3A

Label elements

Hazard pictogram(s)	
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Signal word	Danger
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Hazard statement(s)

H315	Causes skin irritation.
H318	Causes serious eye damage.

Precautionary statement(s) Prevention

P280	Wear protective gloves, protective clothing, eye protection and face protection.
P264	Wash all exposed external body areas thoroughly after handling.

Precautionary statement(s) Response

P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor/physician/first aider.
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
P332+P313	If skin irritation occurs: Get medical advice/attention.

Precautionary statement(s) Storage

Not Applicable

Precautionary statement(s) Disposal

Not Applicable

SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
70131-67-8	30-60	<u>dimethylsiloxane, hydroxy-terminated</u>
4253-34-3	1-10	<u>methyltriacetoxysilane</u>
Not Available	10-30	fillers and plasticisers, non-hazardous
Not Available		NOTE: During curing or on exposure to moist air
Not Available		product generates acetic acid
64-19-7		<u>acetic acid glacial</u>

Legend:	1. Classified by Chemwatch; 2. Classification drawn from CCID EPA NZ; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 4. Classification drawn from C&L; * EU IOELVs available
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SECTION 4 First aid measures

Description of first aid measures

Eye Contact	If this product comes in contact with the eyes: ▸ Immediately hold eyelids apart and flush the eye continuously with running water. ▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▸ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. ▸ Transport to hospital or doctor without delay. ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin or hair contact occurs: ▸ Immediately flush body and clothes with large amounts of water, using safety shower if available. ▸ Quickly remove all contaminated clothing, including footwear. ▸ Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre. ▸ Transport to hospital, or doctor.
Inhalation	▸ If fumes or combustion products are inhaled remove from contaminated area. ▸ Lay patient down. Keep warm and rested. ▸ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▸ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▸ Transport to hospital, or doctor.
Ingestion	▸ For advice, contact a Poisons Information Centre or a doctor at once. ▸ Urgent hospital treatment is likely to be needed. ▸ If swallowed do NOT induce vomiting.

- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- Transport to hospital or doctor without delay.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 Firefighting measures

Extinguishing media

- Water spray or fog.
- Alcohol stable foam.
- Dry chemical powder.
- Carbon dioxide.

Special hazards arising from the substrate or mixture

Fire Incompatibility	▸ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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Advice for firefighters

Fire Fighting	▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ Wear breathing apparatus plus protective gloves. ▸ Prevent, by any means available, spillage from entering drains or water courses. ▸ Use water delivered as a fine spray to control fire and cool adjacent area.
Fire/Explosion Hazard	Uncured material paste is combustible, i.e. will burn if ignited. Not considered a significant fire risk. Heat may cause expansion leading to rupture of containers and contents spill Cured material solid has high heat resistance, is practically non combustible, but is decomposed by near red heat ▸ High temperature decomposition products include silicon dioxide, small amounts of formaldehyde, formic acid, acetic acid and traces of silicon polymers. ▸ These gases may ignite and, depending on circumstances, may cause the resin/polymer to ignite. ▸ An outer skin of silica may also form. Extinguishing of fire, beneath the skin, may be difficult. ▸ Combustible. ▸ Slight fire hazard when exposed to heat or flame. ▸ Heating may cause expansion or decomposition leading to violent rupture of containers. ▸ On combustion, may emit toxic fumes of carbon monoxide (CO). Combustion products include: carbon monoxide (CO) carbon dioxide (CO₂) silicon dioxide (SiO₂) other pyrolysis products typical of burning organic material. May emit poisonous fumes. May emit corrosive fumes.

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	Slippery when spilt. ▸ Clean up all spills immediately. ▸ Avoid contact with skin and eyes. ▸ Wear impervious gloves and safety goggles. ▸ Trowel up/scrape up.
Major Spills	Slippery when spilt. Minor hazard. ▸ Clear area of personnel. ▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ Control personal contact with the substance, by using protective equipment as required.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	▸ Avoid all personal contact, including inhalation. ▸ Wear protective clothing when risk of exposure occurs. ▸ Use in a well-ventilated area. ▸ Prevent concentration in hollows and sumps.
Other information	▸ Store in original containers. ▸ Keep containers securely sealed. ▸ Store in a cool, dry, well-ventilated area. ▸ Store away from incompatible materials and foodstuff containers.

Conditions for safe storage, including any incompatibilities

Suitable container	▸ Lined metal can, lined metal pail/ can. ▸ Plastic pail. ▸ Polyliner drum. ▸ Packing as recommended by manufacturer. ▸ Metal can or drum ▸ Packaging as recommended by manufacturer. ▸ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	Traces of benzene, a carcinogen, may form when silicones are heated in air above 230 degrees C. Concentrated acids and bases cause degradation of polymer. Boiling water may soften and weaken material. ▸ Reacts with mild steel, galvanised steel / zinc producing hydrogen gas which may form an explosive mixture with air. Acetic acid: ▸ vapours forms explosive mixtures with air (above 39 C.) ▸ reacts violently with bases such as carbonates and hydroxides (giving off large quantities of heat), oxidisers, organic amines, acetaldehyde, potassium tert-butoxide ▸ reacts (sometimes violently), with strong acids, aliphatic amines, alkanolamines, alkylene oxides, epichlorohydrin, acetic anhydride, 2-aminoethanol, ammonia, ammonium nitrate, bromine pentafluoride, chlorosulfonic acid, chromic acid, chromium trioxide, ethylenediamine, ethyleneimine, hydrogen peroxide, isocyanates, oleum, perchloric acid, permanganates, phosphorus isocyanate, phosphorus trichloride, sodium peroxide, xylene ▸ attacks cast iron, stainless steel and other metals, forming flammable hydrogen gas ▸ attacks many forms of rubber, plastics and coatings ▸ Avoid strong bases. ▸ Avoid reaction with oxidising agents

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
New Zealand Workplace Exposure Standards (WES)	acetic acid glacial	Acetic acid	10 ppm / 25 mg/m3	37 mg/m3 / 15 ppm	Not Available	Not Available

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
dimethylsiloxane, hydroxy-terminated	190 mg/m3	2,100 mg/m3	13,000 mg/m3
methyltriacetoxysilane	5 mg/m3	35 mg/m3	250 mg/m3
acetic acid glacial	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
dimethylsiloxane, hydroxy-terminated	Not Available	Not Available
methyltriacetoxysilane	Not Available	Not Available
acetic acid glacial	50 ppm	Not Available

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.
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Individual protection measures, such as personal protective equipment	   
Eye and face protection	▶ Chemical goggles. ▶ Full face shield may be required for supplementary but never for primary protection of eyes. ▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.
Skin protection	See Hand protection below
Hands/feet protection	▶ Wear chemical protective gloves, e.g. PVC. ▶ Wear safety footwear or safety gumboots, e.g. Rubber
Body protection	See Other protection below
Other protection	▶ Overalls. ▶ P.V.C apron. ▶ Barrier cream. ▶ Skin cleansing cream.

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the: **"Forsberg Clothing Performance Index"**.
The effect(s) of the following substance(s) are taken into account in the **computer-generated** selection:
CRC (NZ) Universal Silicone Sealant

Material	CPI
BUTYL	A
NEOPRENE	A
NITRILE+PVC	A
PE	A
PE/EVAL/PE	A
PVC	A
SARANEX-23	A
TEFLON	A
BUTYL/NEOPRENE	B
NATURAL RUBBER	B
NATURAL+NEOPRENE	B
NITRILE	B
NAT+NEOPR+NITRILE	C

* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Respiratory protection

Type AB-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required. Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	AB-AUS P2	-	AB-PAPR-AUS / Class 1 P2
up to 50 x ES	-	AB-AUS / Class 1 P2	-
up to 100 x ES	-	AB-2 P2	AB-PAPR-2 P2 ^

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- ▶ Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- ▶ The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- ▶ Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Clear paste; does not mix with water. Material cures / solidifies by reacting with atmospheric moisture and this process generates irritating acetic acid vapour		
Physical state	Non Slump Paste	Relative density (Water = 1)	1.035-1.045
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available

pH (as supplied)	Not Applicable	Decomposition temperature (°C)	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	Not Available	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	Not Available	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Available	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	<8
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Immiscible	pH as a solution (1%)	Not Applicable
Vapour density (Air = 1)	>1	VOC g/L	Not Available

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	▸ Silicone fluids are stable under normal storage conditions. ▸ Hazardous polymerisation will not occur. ▸ At temperatures > 150 C, silicones can slowly react with the oxygen in air. ▸ When heated > 300 C, silicones can slowly depolymerise to volatile siloxanes whether or not air is present. Product is considered stable and hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled	Material cures / solidifies by reacting with atmospheric moisture and this process generates irritating acetic acid vapour inhalation of vapour from the curing material
Ingestion	The material can produce chemical burns within the oral cavity and gastrointestinal tract following ingestion. Smoothing the sealant with saliva wet finger may introduce sealant into the mouth. Safer alternates should replace this poor work practice. Small amounts may be highly irritating to sensitive mouth parts and in extreme cases produce small blisters but no toxic effects are known.
Skin Contact	The material can produce chemical burns following direct contact with the skin. 5380511sil Excessive use or prolonged contact may lead to defatting, drying and irritation of sensitive skin
Eye	The material can produce chemical burns to the eye following direct contact. Vapours or mists may be extremely irritating. If applied to the eyes, this material causes severe eye damage. Eye exposure to silicone fluids causes temporary irritation of the conjunctiva. Injection into the specific structures of the eye, however, causes corneal scarring, permanent eye damage, allergic reactions and cataract, and may lead to blindness.
Chronic	Repeated or prolonged exposure to corrosives may result in the erosion of teeth, inflammatory and ulcerative changes in the mouth and necrosis (rarely) of the jaw. Bronchial irritation, with cough, and frequent attacks of bronchial pneumonia may ensue. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

CRC (NZ) Universal Silicone Sealant	TOXICITY	IRRITATION
	Not Available	Not Available
dimethylsiloxane, hydroxy-terminated	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >2000 mg/kg ^[2] Oral (Rat) LD50: >5000 mg/kg ^[2]	Not Available
methyltriacetoxysilane	TOXICITY	IRRITATION
	Oral (Rat) LD50: 1550 mg/kg ^[1]	Eye: adverse effect observed (irreversible damage) ^[1] Skin: adverse effect observed (corrosive) ^[1]

acetic acid glacial	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: 1060 mg/kg ^[2]	Eye (rabbit): 0.05mg (open)-SEVERE
	Inhalation(Mouse) LC50; 1.405 mg/L4h ^[2]	Skin (human):50mg/24hr - mild
	Oral (Rat) LD50: 3310 mg/kg ^[2]	Skin (rabbit):525mg (open)-SEVERE
Legend:	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

DIMETHYLSILOXANE, HYDROXY-TERMINATED	* [Mobay Chemical Corp] **[GE]
METHYLTRIACETOXYSILANE	The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may produce respiratory tract irritation, and result in damage to the lung including reduced lung function. The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.
ACETIC ACID GLACIAL	For acid mists, aerosols, vapours Test results suggest that eukaryotic cells are susceptible to genetic damage when the pH falls to about 6.5. Cells from the respiratory tract have not been examined in this respect. Mucous secretion may protect the cells of the airway from direct exposure to inhaled acidic mists (which also protects the stomach lining from the hydrochloric acid secreted there). The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may cause severe skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. Repeated exposures may produce severe ulceration.
CRC (NZ) Universal Silicone Sealant & DIMETHYLSILOXANE, HYDROXY-TERMINATED	Siloxanes may impair liver and hormonal function, as well as the lung and kidney. They have not been found to be irritating to the skin and eyes. They may potentially cause cancer (tumours of the womb in females) and may cause impaired fertility or infertility.
CRC (NZ) Universal Silicone Sealant & METHYLTRIACETOXYSILANE & ACETIC ACID GLACIAL	Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. Prolonged or repeated exposure to acetic acid may produce irritation and/ or corrosion at the site of contact as well as systemic toxicity. Prolonged inhalation exposure results in muscle imbalance, increase in blood cholinesterase activity, decrease in albumin and decreased growth but no reproductive or foetal toxicity, according to animal testing.
CRC (NZ) Universal Silicone Sealant & METHYLTRIACETOXYSILANE	Clinical signs of acute methyltriacetoxysilane poisoning in animals include decreased body weight and food intake, labored breathing, rales, red stains around the snout and extremities, salivation, excessive tear (sometimes coloured) production, lethargy, irregular gait, hunched posture, red urination, black/brown anogenital staining, paleness, and low body temperature. Autopsy showed multiple abnormalities of the stomach. Methyltriacetoxysilane is severely irritating and corrosive to the skin, and corrosive to the eyes of animals; as it is broken down by water to acetic acid, it is likely to irritate the airway. Tests on laboratory cells have not shown methyltriacetoxysilane to cause mutations or chromosomal aberrations.

Acute Toxicity	✗	Carcinogenicity	✗
Skin Irritation/Corrosion	✓	Reproductivity	✗
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	✗
Respiratory or Skin sensitisation	✗	STOT - Repeated Exposure	✗
Mutagenicity	✗	Aspiration Hazard	✗

Legend: ✗ – Data either not available or does not fill the criteria for classification
✓ – Data available to make classification

SECTION 12 Ecological information

Toxicity

CRC (NZ) Universal Silicone Sealant	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
dimethylsiloxane, hydroxy-terminated	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available

methyltriacetoxysilane	Endpoint	Test Duration (hr)	Species	Value	Source
	NOEC(ECx)	72h	Algae or other aquatic plants	>=3.6mg/l	2
	LC50	96h	Fish	>=79<=88mg/l	2
	EC50	72h	Algae or other aquatic plants	>3.6mg/l	2
	EC50	48h	Crustacea	65mg/l	2
acetic acid glacial	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50(ECx)	24h	Algae or other aquatic plants	0.08mg/l	2
	EC50	72h	Algae or other aquatic plants	29.23mg/l	2
	LC50	96h	Fish	31.3-67.6mg/l	2
	EC50	96h	Algae or other aquatic plants	73.4mg/l	4
	EC50	48h	Crustacea	18.9mg/l	2
Legend:		Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data			

For Siloxanes:

Environmental Fate: Siloxanes are used in cosmetics, wax, polishes, and to a minor extent in several other applications.

Atmospheric Fate: In the presence of nitrate ions, short chain siloxanes are broken down by sunlight to the level of silicate within days. The main source atmospheric siloxane release to the air is via evaporation.

Aquatic Fate: It is well accepted that polydimethylsiloxane fluids become permanent residents of sediment but should not have adverse environmental effects.

For Methyltriacetoxysilane:

Environmental fate: Melting Point: 14 C; Boiling Point: 220C @ 1013 hPa; Vapor Pressure: 0.26 hPa @ 20C; Log Kow: 0.25; Water Solubility: 91g/L.

Water solubility and Log Kow values may not be reliable because the chemical is unstable in water. Polymerization products are not volatile and are considered to be biologically unavailable.

Atmospheric Fate: The atmospheric half-life is 58 days and is based on photodegradation; however, photodegradation as a mode of removal is unlikely.

For Acetic Acid: Acetic acid and its salts (the acetates) can be grouped together because of their close structural relationships, their natural occurrence in plants and animals, and their fundamental role in cell metabolism.

Atmospheric Fate: Acetic acid is degraded photochemically in the atmosphere to produce hydroxyl radicals (estimated typical half-life of 22 days). Physical removal of acetates on atmospheric particulates may occur via wet or dry deposition.

Aquatic Fate: Natural water will neutralize dilute solutions of acetic acid.

DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
methyltriacetoxysilane	HIGH	HIGH
acetic acid glacial	LOW	LOW

Bioaccumulative potential

Ingredient	Bioaccumulation
methyltriacetoxysilane	LOW (LogKOW = 0.2467)
acetic acid glacial	LOW (LogKOW = -0.17)

Mobility in soil

Ingredient	Mobility
methyltriacetoxysilane	LOW (KOC = 35.19)
acetic acid glacial	HIGH (KOC = 1)

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	▸ DO NOT allow wash water from cleaning or process equipment to enter drains. ▸ It may be necessary to collect all wash water for treatment before disposal. ▸ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▸ Where in doubt contact the responsible authority. ▸ Recycle wherever possible or consult manufacturer for recycling options. ▸ Consult State Land Waste Authority for disposal. ▸ Bury or incinerate residue at an approved site. ▸ Recycle containers if possible, or dispose of in an authorised landfill.
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Ensure that the hazardous substance is disposed in accordance with the Hazardous Substances (Disposal) Notice 2017

Disposal Requirements

Packages that have been in direct contact with the hazardous substance must be only disposed if the hazardous substance was appropriately removed and cleaned out from the package. The package must be disposed according to the manufacturer's directions taking into account the material it is made of. Packages which hazardous content have been appropriately treated and removed may be recycled.

The hazardous substance must only be disposed if it has been treated by a method that changed the characteristics or composition of the substance and it is no longer hazardous.

SECTION 14 Transport information

Labels Required

Marine Pollutant	NO
HAZCHEM	Not Applicable

Land transport (UN): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
dimethylsiloxane, hydroxy-terminated	Not Available
methyltriacetoxysilane	Not Available
acetic acid glacial	Not Available

Transport in bulk in accordance with the IGC Code

Product name	Ship Type
dimethylsiloxane, hydroxy-terminated	Not Available
methyltriacetoxysilane	Not Available
acetic acid glacial	Not Available

SECTION 15 Regulatory information

Safety, health and environmental regulations / legislation specific for the substance or mixture

This substance is to be managed using the conditions specified in an applicable Group Standard

HSR Number	Group Standard
HSR002670	Surface Coatings and Colourants (Subsidiary Hazard) Group Standard 2017

Please refer to Section 8 of the SDS for any applicable tolerable exposure limit or Section 12 for environmental exposure limit.

dimethylsiloxane, hydroxy-terminated is found on the following regulatory lists

New Zealand Approved Hazardous Substances with controls	New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data
New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals	New Zealand Inventory of Chemicals (NZIoC)

methyltriacetoxysilane is found on the following regulatory lists

New Zealand Approved Hazardous Substances with controls	New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data
New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals	New Zealand Inventory of Chemicals (NZIoC)

acetic acid glacial is found on the following regulatory lists

New Zealand Approved Hazardous Substances with controls	New Zealand Inventory of Chemicals (NZIoC)
New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals	New Zealand Workplace Exposure Standards (WES)
New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data	

Hazardous Substance Location

Subject to the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Hazard Class	Quantities
Not Applicable	Not Applicable

Certified Handler

Subject to Part 4 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Class of substance	Quantities
Not Applicable	Not Applicable

Refer Group Standards for further information

Maximum quantities of certain hazardous substances permitted on passenger service vehicles

Subject to Regulation 13.14 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Hazard Class	Gas (aggregate water capacity in mL)	Liquid (L)	Solid (kg)	Maximum quantity per package for each classification
Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable

Tracking Requirements

Not Applicable

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (dimethylsiloxane, hydroxy-terminated; methyltriacetoxysilane; acetic acid glacial)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	No (dimethylsiloxane, hydroxy-terminated)
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	Yes
Legend:	<i>Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.</i>

SECTION 16 Other information

Revision Date	10/03/2023
Initial Date	31/08/2012

SDS Version Summary

Version	Date of Update	Sections Updated
4.1	01/11/2019	One-off system update. NOTE: This may or may not change the GHS classification
5.1	10/03/2023	Classification change due to full database hazard calculation/update.

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average

PC—STEL: Permissible Concentration-Short Term Exposure Limit

IARC: International Agency for Research on Cancer

ACGIH: American Conference of Governmental Industrial Hygienists

STEL: Short Term Exposure Limit

TEEL: Temporary Emergency Exposure Limit,

IDLH: Immediately Dangerous to Life or Health Concentrations

ES: Exposure Standard

OSF: Odour Safety Factor

NOAEL :No Observed Adverse Effect Level

LOAEL: Lowest Observed Adverse Effect Level

TLV: Threshold Limit Value

LOD: Limit Of Detection

OTV: Odour Threshold Value

BCF: BioConcentration Factors

BEI: Biological Exposure Index

AIC: Australian Inventory of Industrial Chemicals

DSL: Domestic Substances List

NDSL: Non-Domestic Substances List

IECSC: Inventory of Existing Chemical Substance in China

EINECS: European INventory of Existing Commercial chemical Substances

ELINCS: European List of Notified Chemical Substances

NLP: No-Longer Polymers

ENCS: Existing and New Chemical Substances Inventory

KECI: Korea Existing Chemicals Inventory

NZIoC: New Zealand Inventory of Chemicals

PICCS: Philippine Inventory of Chemicals and Chemical Substances

TSCA: Toxic Substances Control Act

TCSI: Taiwan Chemical Substance Inventory

INSQ: Inventario Nacional de Sustancias Químicas

NCI: National Chemical Inventory

FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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TEL (+61 3) 9572 4700.



808 Silicone Spray

CRC Industries (CRC Industries New Zealand)

Chemwatch: 4546-24

Version No: 8.1

Safety Data Sheet according to the Health and Safety at Work (Hazardous Substances) Regulations 2017

Chemwatch Hazard Alert Code: 3

Issue Date: 22/04/2021

Print Date: 06/01/2022

S.GHS.NZL.EN

SECTION 1 Identification of the substance / mixture and of the company / undertaking

Product Identifier

Product name	808 Silicone Spray
Chemical Name	Not Applicable
Synonyms	3055, 1010282 - 808 Silicone Spray 500ml; 3050, 1011751 - 808 Silicone Permastraw 380ml; 1752483 - Race Series 808 Silicone 400g; 1010281 - 808 Silicone 80ml
Proper shipping name	AEROSOLS
Chemical formula	Not Applicable
Other means of identification	Not Available

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	Silicone lubricant. Application is by spray atomisation from a hand held aerosol pack
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Details of the supplier of the safety data sheet

Registered company name	CRC Industries (CRC Industries New Zealand)
Address	10 Highbrook Drive East Tamaki Auckland New Zealand
Telephone	+64 9 272 2700
Fax	+64 9 274 9696
Website	www.crc.co.nz
Email	customerservices@crc.co.nz

Emergency telephone number

Association / Organisation	CRC Industries (CRC Industries New Zealand)
Emergency telephone numbers	NZ Poisons Centre 0800 POISON (0800 764 766)
Other emergency telephone numbers	111 (NZ Emergency Services)

SECTION 2 Hazards identification

Classification of the substance or mixture

Classification ^[1]	Aspiration Hazard Category 1, Reproductive Toxicity Category 2, Aerosols Category 1
Legend:	1. Classified by Chemwatch; 2. Classification drawn from CCID EPA NZ; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI
Determined by Chemwatch using GHS/HSNO criteria	2.1.2A, 6.1E (aspiration), 6.8B

Label elements

Hazard pictogram(s)	 
Signal word	Danger

Hazard statement(s)	
H304	May be fatal if swallowed and enters airways.
H361	Suspected of damaging fertility or the unborn child.
H222	Extremely flammable aerosol.

Precautionary statement(s) Prevention

P201	Obtain special instructions before use.
P280	Wear protective gloves and protective clothing.

Precautionary statement(s) Response

P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician/first aider.
P331	Do NOT induce vomiting.
P308+P313	IF exposed or concerned: Get medical advice/ attention.

Precautionary statement(s) Storage

P405	Store locked up.
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Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.
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SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
64742-89-8.	10-30	<u>naphtha petroleum, light aliphatic solvent</u>
Not Available	10-30	silicone oligomer
68476-85-7.	31-60	<u>LPG (liquefied petroleum gas)</u>
Not Available		NOTE: Manufacturer has supplied full ingredient
Not Available		information to allow CHEMWATCH assessment.
Legend:		1. Classified by Chemwatch; 2. Classification drawn from CCID EPA NZ; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 4. Classification drawn from C&L; * EU IOELVs available

SECTION 4 First aid measures

Description of first aid measures

Eye Contact	If aerosols come in contact with the eyes: ▶ Immediately hold the eyelids apart and flush the eye continuously for at least 15 minutes with fresh running water. ▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▶ Transport to hospital or doctor without delay. ▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If solids or aerosol mists are deposited upon the skin: ▶ Flush skin and hair with running water (and soap if available). ▶ Remove any adhering solids with industrial skin cleansing cream. ▶ DO NOT use solvents. ▶ Seek medical attention in the event of irritation.
Inhalation	If aerosols, fumes or combustion products are inhaled: ▶ Remove to fresh air. ▶ Lay patient down. Keep warm and rested. ▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▶ If breathing is shallow or has stopped, ensure clear airway and apply resuscitation, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▶ Transport to hospital, or doctor.
Ingestion	▶ Avoid giving milk or oils. ▶ Avoid giving alcohol. Not considered a normal route of entry. ▶ If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.

Indication of any immediate medical attention and special treatment needed

For acute or short term repeated exposures to petroleum distillates or related hydrocarbons:

- Primary threat to life, from pure petroleum distillate ingestion and/or inhalation, is respiratory failure.
- Patients should be quickly evaluated for signs of respiratory distress (e.g. cyanosis, tachypnoea, intercostal retraction, obtundation) and given oxygen. Patients with inadequate tidal volumes or poor arterial blood gases (pO₂ 50 mm Hg) should be intubated.
- Arrhythmias complicate some hydrocarbon ingestion and/or inhalation and electrocardiographic evidence of myocardial injury has been reported; intravenous lines and cardiac monitors should be established in obviously symptomatic patients. The lungs excrete inhaled solvents, so that hyperventilation improves clearance.
- A chest x-ray should be taken immediately after stabilisation of breathing and circulation to document aspiration and detect the presence of pneumothorax.
- Epinephrine (adrenalin) is not recommended for treatment of bronchospasm because of potential myocardial sensitisation to catecholamines. Inhaled cardioselective bronchodilators (e.g. Alupent, Salbutamol) are the preferred agents, with aminophylline a second choice.
- Lavage is indicated in patients who require decontamination; ensure use of cuffed endotracheal tube in adult patients. [Ellenhorn and Barceloux: Medical Toxicology]

Treat symptomatically.

SECTION 5 Firefighting measures

Extinguishing media

SMALL FIRE:

- Water spray, dry chemical or CO₂

LARGE FIRE:

- Water spray or fog.

Special hazards arising from the substrate or mixture

Fire Incompatibility	▸ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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Advice for firefighters

Fire Fighting	▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ May be violently or explosively reactive. ▸ Wear breathing apparatus plus protective gloves. ▸ Prevent, by any means available, spillage from entering drains or water course.
Fire/Explosion Hazard	▸ Liquid and vapour are highly flammable. ▸ Severe fire hazard when exposed to heat or flame. ▸ Vapour forms an explosive mixture with air. ▸ Severe explosion hazard, in the form of vapour, when exposed to flame or spark. Combustion products include: carbon monoxide (CO) carbon dioxide (CO₂) other pyrolysis products typical of burning organic material. Contains low boiling substance: Closed containers may rupture due to pressure buildup under fire conditions.

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	▸ Clean up all spills immediately. ▸ Avoid breathing vapours and contact with skin and eyes. ▸ Wear protective clothing, impervious gloves and safety glasses. ▸ Shut off all possible sources of ignition and increase ventilation.
Major Spills	▸ DO NOT exert excessive pressure on valve; DO NOT attempt to operate damaged valve. ▸ Clear area of personnel and move upwind. ▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ May be violently or explosively reactive. ▸ Wear breathing apparatus plus protective gloves. ▸ Remove leaking cylinders to a safe place if possible. ▸ Release pressure under safe, controlled conditions by opening the valve.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	▸ Avoid all personal contact, including inhalation. ▸ Wear protective clothing when risk of exposure occurs. ▸ Use in a well-ventilated area. ▸ Prevent concentration in hollows and sumps.
Other information	▸ Keep dry to avoid corrosion of cans. Corrosion may result in container perforation and internal pressure may eject contents of can ▸ Store in original containers in approved flammable liquid storage area. ▸ DO NOT store in pits, depressions, basements or areas where vapours may be trapped. ▸ No smoking, naked lights, heat or ignition sources. ▸ Keep containers securely sealed.

Conditions for safe storage, including any incompatibilities

Suitable container	▸ Aerosol dispenser. ▸ Check that containers are clearly labelled.
Storage incompatibility	▸ Avoid reaction with oxidising agents

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
New Zealand Workplace Exposure Standards (WES)	naphtha petroleum, light aliphatic solvent	Oil mist, mineral	5 mg/m3	10 mg/m3	Not Available	om-Sampled by a method that does not collect vapour.
New Zealand Workplace Exposure Standards (WES)	LPG (liquefied petroleum gas)	LPG (Liquefied petroleum gas)	1000 ppm / 1800 mg/m3	Not Available	Not Available	Not Available

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
naphtha petroleum, light aliphatic solvent	1,200 mg/m3	6,700 mg/m3	40,000 mg/m3
LPG (liquefied petroleum gas)	65,000 ppm	2.30E+05 ppm	4.00E+05 ppm

Ingredient	Original IDLH	Revised IDLH
naphtha petroleum, light aliphatic solvent	2,500 mg/m3	Not Available
LPG (liquefied petroleum gas)	2,000 ppm	Not Available

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.
Personal protection	
Eye and face protection	No special equipment for minor exposure i.e. when handling small quantities. OTHERWISE: For potentially moderate or heavy exposures: ▸ Safety glasses with side shields. ▸ NOTE: Contact lenses pose a special hazard; soft lenses may absorb irritants and ALL lenses concentrate them.
Skin protection	See Hand protection below
Hands/feet protection	▸ No special equipment needed when handling small quantities. ▸ OTHERWISE: ▸ For potentially moderate exposures: ▸ Wear general protective gloves, eg. light weight rubber gloves. ▸ For potentially heavy exposures: ▸ Wear chemical protective gloves, eg. PVC. and safety footwear.
Body protection	See Other protection below

Other protection	No special equipment needed when handling small quantities.
	OTHERWISE: ▸ Overalls. ▸ Skin cleansing cream. ▸ Eyewash unit. ▸ The clothing worn by process operators insulated from earth may develop static charges far higher (up to 100 times) than the minimum ignition energies for various flammable gas-air mixtures. This holds true for a wide range of clothing materials including cotton. ▸ Avoid dangerous levels of charge by ensuring a low resistivity of the surface material worn outermost. BRETHERICK: Handbook of Reactive Chemical Hazards.

Respiratory protection

Type AX-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required. Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	AX-AUS P2	-	AX-PAPR-AUS / Class 1 P2
up to 50 x ES	-	AX-AUS / Class 1 P2	-
up to 100 x ES	-	AX-2 P2	AX-PAPR-2 P2 ^

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Clear colourless highly flammable liquid with an ethereal odour; not miscible with water. Supplied as an aerosol pack. Contents under PRESSURE . Contains highly flammable hydrocarbon propellant.		
Physical state	Liquid	Relative density (Water = 1)	0.87
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	550
pH (as supplied)	Not Applicable	Decomposition temperature	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	80 (initial)	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	-17	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	HIGHLY FLAMMABLE.	Oxidising properties	Not Available
Upper Explosive Limit (%)	7.4	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	1.2	Volatile Component (%vol)	60
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Immiscible	pH as a solution (%)	Not Applicable
Vapour density (Air = 1)	>1	VOC g/L	Not Available

SECTION 10 Stability and reactivity

Reactivity	See section 7
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Chemical stability	▸ Elevated temperatures. ▸ Presence of open flame. ▸ Product is considered stable. ▸ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled	Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo. Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual. There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Inhalation of toxic gases may cause: ▸ Central Nervous System effects including depression, headache, confusion, dizziness, stupor, coma and seizures; ▸ respiratory: acute lung swellings, shortness of breath, wheezing, rapid breathing, other symptoms and respiratory arrest; ▸ heart: collapse, irregular heartbeats and cardiac arrest; ▸ gastrointestinal: irritation, ulcers, nausea and vomiting (may be bloody), and abdominal pain. Inhalation of high concentrations of gas/vapour causes lung irritation with coughing and nausea, central nervous depression with headache and dizziness, slowing of reflexes, fatigue and inco-ordination. Central nervous system (CNS) depression may include general discomfort, symptoms of giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech and may progress to unconsciousness. Serious poisonings may result in respiratory depression and may be fatal. Material is highly volatile and may quickly form a concentrated atmosphere in confined or unventilated areas. The vapour may displace and replace air in breathing zone, acting as a simple asphyxiant. This may happen with little warning of overexposure. Symptoms of asphyxia (suffocation) may include headache, dizziness, shortness of breath, muscular weakness, drowsiness and ringing in the ears. If the asphyxia is allowed to progress, there may be nausea and vomiting, further physical weakness and unconsciousness and, finally, convulsions, coma and death. WARNING: Intentional misuse by concentrating/inhaling contents may be lethal. Exposure to hydrocarbons may result in irregularity of heart beat. Symptoms of moderate poisoning may include dizziness, headache, nausea.
Ingestion	Swallowing of the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis; serious consequences may result. (ICSC13733) Accidental ingestion of the material may be damaging to the health of the individual. Not normally a hazard due to physical form of product. Considered an unlikely route of entry in commercial/industrial environments Ingestion of petroleum hydrocarbons can irritate the pharynx, oesophagus, stomach and small intestine, and cause swellings and ulcers of the mucous. Symptoms include a burning mouth and throat; larger amounts can cause nausea and vomiting, narcosis, weakness, dizziness, slow and shallow breathing, abdominal swelling, unconsciousness and convulsions.
Skin Contact	Repeated exposure may cause skin cracking, flaking or drying following normal handling and use. Skin contact with the material may damage the health of the individual; systemic effects may result following absorption. Spray mist may produce discomfort Open cuts, abraded or irritated skin should not be exposed to this material
Eye	There is some evidence to suggest that this material can cause eye irritation and damage in some persons. Not considered to be a risk because of the extreme volatility of the gas. Direct eye contact with petroleum hydrocarbons can be painful, and the corneal epithelium may be temporarily damaged. Aromatic species can cause irritation and excessive tear secretion.
Chronic	Based on experience with animal studies, exposure to the material may result in toxic effects to the development of the foetus, at levels which do not cause significant toxic effects to the mother. There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Main route of exposure to the gas in the workplace is by inhalation. Constant or exposure over long periods to mixed hydrocarbons may produce stupor with dizziness, weakness and visual disturbance, weight loss and anaemia, and reduced liver and kidney function. Skin exposure may result in drying and cracking and redness of the skin. Chronic solvent inhalation exposures may result in nervous system impairment and liver and blood changes. [PATTYS]

808 Silicone Spray	TOXICITY	IRRITATION
	Not Available	Not Available

naphtha petroleum, light aliphatic solvent	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >1900 mg/kg ^[1]	Eye: no adverse effect observed (not irritating) ^[1]
	Inhalation(Rat) LC50; >4.42 mg/L4h ^[1]	Skin: adverse effect observed (irritating) ^[1]
	Oral (Rat) LD50; >4500 mg/kg ^[1]	
LPG (liquefied petroleum gas)	TOXICITY	IRRITATION
	Inhalation(Rat) LC50; 658 mg/l4h ^[2]	Not Available
Legend:	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

NAPHTHA PETROLEUM, LIGHT ALIPHATIC SOLVENT	For petroleum: This product contains benzene, which can cause acute myeloid leukaemia, and n-hexane, which can be metabolized to compounds which are toxic to the nervous system. This product contains toluene, and animal studies suggest high concentrations of toluene lead to hearing loss. This product contains ethyl benzene and naphthalene, from which animal testing shows evidence of tumour formation. Cancer-causing potential: Animal testing shows inhaling petroleum causes tumours of the liver and kidney; these are however not considered to be relevant in humans. Mutation-causing potential: Most studies involving gasoline have returned negative results regarding the potential to cause mutations, including all recent studies in living human subjects (such as in petrol service station attendants).
LPG (LIQUEFIED PETROLEUM GAS)	inhalation of the gas
808 Silicone Spray & LPG (LIQUEFIED PETROLEUM GAS)	No significant acute toxicological data identified in literature search.

Acute Toxicity	✗	Carcinogenicity	✗
Skin Irritation/Corrosion	✗	Reproductivity	✓
Serious Eye Damage/Irritation	✗	STOT - Single Exposure	✗
Respiratory or Skin sensitisation	✗	STOT - Repeated Exposure	✗
Mutagenicity	✗	Aspiration Hazard	✓

Legend: ✗ – Data either not available or does not fill the criteria for classification
 ✓ – Data available to make classification

SECTION 12 Ecological information

Toxicity

808 Silicone Spray	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
naphtha petroleum, light aliphatic solvent	Endpoint	Test Duration (hr)	Species	Value	Source
	NOEC(ECx)	72h	Algae or other aquatic plants	<0.1mg/l	1
	LC50	96h	Fish	>100000mg/L	4
	EC50	72h	Algae or other aquatic plants	6.5mg/l	1
	EC50	96h	Algae or other aquatic plants	64mg/l	2
LPG (liquefied petroleum gas)	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50(ECx)	96h	Algae or other aquatic plants	7.71mg/l	2
	LC50	96h	Fish	24.11mg/l	2
	EC50	96h	Algae or other aquatic plants	7.71mg/l	2
Legend:	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data				

For Hydrocarbons: log Kow 1. BCF~10.
 For Aromatics: log Kow 2-3.
 BCF 20-200.
 Drinking Water Standards: hydrocarbon total: 10 ug/l (UK max.).
DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
	No Data available for all ingredients	No Data available for all ingredients

Bioaccumulative potential

Ingredient	Bioaccumulation
	No Data available for all ingredients

Mobility in soil

Ingredient	Mobility
	No Data available for all ingredients

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	▶ DO NOT allow wash water from cleaning or process equipment to enter drains. ▶ It may be necessary to collect all wash water for treatment before disposal. ▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▶ Where in doubt contact the responsible authority. ▶ Consult State Land Waste Management Authority for disposal. ▶ Discharge contents of damaged aerosol cans at an approved site. ▶ Allow small quantities to evaporate. ▶ DO NOT incinerate or puncture aerosol cans.
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Ensure that the hazardous substance is disposed in accordance with the Hazardous Substances (Disposal) Notice 2017

Disposal Requirements

Packages that have been in direct contact with the hazardous substance must be only disposed if the hazardous substance was appropriately removed and cleaned out from the package. The package must be disposed according to the manufacturer's directions taking into account the material it is made of. Packages which hazardous content have been appropriately treated and removed may be recycled.

The hazardous substance must only be disposed if it has been treated by a method that changed the characteristics or composition of the substance and it is no longer hazardous.

SECTION 14 Transport information

Labels Required

	
Marine Pollutant	NO
HAZCHEM	Not Applicable

Land transport (UN)

UN number	1950	
UN proper shipping name	AEROSOLS	
Transport hazard class(es)	Class	2.1
	Subrisk	Not Applicable
Packing group	Not Applicable	
Environmental hazard	Not Applicable	
Special precautions for user	Special provisions	63; 190; 277; 327; 344; 381
	Limited quantity	1000ml

Air transport (ICAO-IATA / DGR)

UN number	1950
UN proper shipping name	Aerosols, flammable

Transport hazard class(es)	ICAO/IATA Class	2.1
	ICAO / IATA Subrisk	Not Applicable
	ERG Code	10L
Packing group	Not Applicable	
Environmental hazard	Not Applicable	
Special precautions for user	Special provisions	A145 A167 A802
	Cargo Only Packing Instructions	203
	Cargo Only Maximum Qty / Pack	150 kg
	Passenger and Cargo Packing Instructions	203
	Passenger and Cargo Maximum Qty / Pack	75 kg
	Passenger and Cargo Limited Quantity Packing Instructions	Y203
	Passenger and Cargo Limited Maximum Qty / Pack	30 kg G

Sea transport (IMDG-Code / GGVSee)

UN number	1950	
UN proper shipping name	AEROSOLS	
Transport hazard class(es)	IMDG Class	2.1
	IMDG Subrisk	Not Applicable
Packing group	Not Applicable	
Environmental hazard	Not Applicable	
Special precautions for user	EMS Number	F-D , S-U
	Special provisions	63 190 277 327 344 381 959
	Limited Quantities	1000 ml

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
naphtha petroleum, light aliphatic solvent	Not Available
LPG (liquefied petroleum gas)	Not Available

Transport in bulk in accordance with the ICG Code

Product name	Ship Type
naphtha petroleum, light aliphatic solvent	Not Available
LPG (liquefied petroleum gas)	Not Available

SECTION 15 Regulatory information

Safety, health and environmental regulations / legislation specific for the substance or mixture

This substance is to be managed using the conditions specified in an applicable Group Standard

HSR Number	Group Standard
HSR002515	Aerosols (Flammable) Group Standard 2017

Please refer to Section 8 of the SDS for any applicable tolerable exposure limit or Section 12 for environmental exposure limit.

naphtha petroleum, light aliphatic solvent is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

New Zealand Approved Hazardous Substances with controls

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

New Zealand Inventory of Chemicals (NZIoC)

New Zealand Workplace Exposure Standards (WES)

LPG (liquefied petroleum gas) is found on the following regulatory lists

Chemical Footprint Project - Chemicals of High Concern List	New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data
New Zealand Approved Hazardous Substances with controls	New Zealand Inventory of Chemicals (NZIoC)
New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals	New Zealand Workplace Exposure Standards (WES)

Hazardous Substance Location

Subject to the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Hazard Class	Quantity (Closed Containers)	Quantity (Open Containers)
2.1.2A	3 000 L (aggregate water capacity)	3 000 L (aggregate water capacity)

Certified Handler

Subject to Part 4 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Class of substance	Quantities
Not Applicable	Not Applicable

Refer Group Standards for further information

Maximum quantities of certain hazardous substances permitted on passenger service vehicles

Subject to Regulation 13.14 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Hazard Class	Gas (aggregate water capacity in mL)	Liquid (L)	Solid (kg)	Maximum quantity per package for each classification
2.1.2A				1L (aggregate water capacity)

Tracking Requirements

Not Applicable

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (naphtha petroleum, light aliphatic solvent; LPG (liquefied petroleum gas))
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	No (naphtha petroleum, light aliphatic solvent)
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	Yes
Legend:	<i>Yes = All CAS declared ingredients are on the inventory</i> <i>No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.</i>

SECTION 16 Other information

Revision Date	22/04/2021
Initial Date	09/07/2002

SDS Version Summary

Version	Date of Update	Sections Updated
7.1	01/11/2019	One-off system update. NOTE: This may or may not change the GHS classification
8.1	22/04/2021	Synonyms, Name

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average
PC—STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit.
IDLH: Immediately Dangerous to Life or Health Concentrations
ES: Exposure Standard
OSF: Odour Safety Factor
NOAEL :No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index
AIIIC: Australian Inventory of Industrial Chemicals
DSL: Domestic Substances List
NDSL: Non-Domestic Substances List
IECSC: Inventory of Existing Chemical Substance in China
EINECS: European INventory of Existing Commercial chemical Substances
ELINCS: European List of Notified Chemical Substances
NLP: No-Longer Polymers
ENCS: Existing and New Chemical Substances Inventory
KECI: Korea Existing Chemicals Inventory
NZIoC: New Zealand Inventory of Chemicals
PICCS: Philippine Inventory of Chemicals and Chemical Substances
TSCA: Toxic Substances Control Act
TCSI: Taiwan Chemical Substance Inventory
INSQ: Inventario Nacional de Sustancias Químicas
NCI: National Chemical Inventory
FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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TEL (+61 3) 9572 4700.



CRC 2092 Stainless Steel Zinc

CRC Industries (CRC Industries New Zealand)

Chemwatch: 4838-11

Version No: 6.1.1.1

Safety Data Sheet according to the Health and Safety at Work (Hazardous Substances) Regulations 2017

Chemwatch Hazard Alert Code: 4

Issue Date: 07/02/2020

Print Date: 23/03/2021

S.GHS.NZL.EN

SECTION 1 Identification of the substance / mixture and of the company / undertaking

Product Identifier

Product name	CRC 2092 Stainless Steel Zinc
Chemical Name	Not Applicable
Synonyms	Not Available
Proper shipping name	AEROSOLS
Chemical formula	Not Applicable
Other means of identification	Not Available

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses	To provide a stainless steel finish anti corrosive coating to metal surfaces. Application is by spray atomisation from a hand held aerosol pack Use according to manufacturer's directions. The use of a quantity of material in an unventilated or confined space may result in increased exposure and an irritating atmosphere developing. Before starting consider control of exposure by mechanical ventilation.
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Details of the supplier of the safety data sheet

Registered company name	CRC Industries (CRC Industries New Zealand)
Address	10 Highbrook Drive East Tamaki Auckland New Zealand
Telephone	+64 9 272 2700
Fax	+64 9 274 9696
Website	www.crc.co.nz
Email	customerservices@crc.co.nz

Emergency telephone number

Association / Organisation	CRC Industries (CRC Industries New Zealand)
Emergency telephone numbers	NZ Poisons Centre 0800 POISON (0800 764 766)
Other emergency telephone numbers	111 (NZ Emergency Services)

SECTION 2 Hazards identification

Classification of the substance or mixture

Classification ^[1]	Flammable Aerosols Category 1, Acute Toxicity (Oral) Category 4, Skin Corrosion/Irritation Category 2, Eye Irritation Category 2, Reproductive Toxicity Category 2, Specific target organ toxicity - single exposure Category 2, Specific target organ toxicity - repeated exposure Category 2, Acute Aquatic Hazard Category 1, Chronic Aquatic Hazard Category 4, Acute Vertebrate Hazard Category 3
Legend:	1. Classified by Chemwatch; 2. Classification drawn from CCID EPA NZ; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI
Determined by Chemwatch using GHS/HSNO criteria	2.1.2A, 6.1D (oral), 6.3A, 6.4A, 6.8B, 6.9B, 9.1A, 9.1D, 9.3C

Label elements

Hazard pictogram(s)	   
Signal word	Danger

Hazard statement(s)

H222	Extremely flammable aerosol.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H361	Suspected of damaging fertility or the unborn child.
H371	May cause damage to organs.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H413	May cause long lasting harmful effects to aquatic life.
H433	Harmful to terrestrial vertebrates.

Precautionary statement(s) Prevention

P201	Obtain special instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211	Do not spray on an open flame or other ignition source.
P251	Do not pierce or burn, even after use.

Precautionary statement(s) Response

P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P311	IF exposed or concerned: Call a POISON CENTER/doctor/physician/first aider.
P314	Get medical advice/attention if you feel unwell.
P337+P313	If eye irritation persists: Get medical advice/attention.

Precautionary statement(s) Storage

P405	Store locked up.
P410+P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.
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SECTION 3 Composition / information on ingredients

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
7440-66-6	10-25	<u>zinc powder</u>
108-88-3	10-25	<u>toluene</u>
1330-20-7	1-9	<u>xylene</u>
Not Available	5-10	stainless steel powder
68476-85-7.	25-35	<u>hydrocarbon propellant</u>

SECTION 4 First aid measures

Description of first aid measures

Eye Contact	If aerosols come in contact with the eyes: ▶ Immediately hold the eyelids apart and flush the eye continuously for at least 15 minutes with fresh running water. ▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
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	▸ Transport to hospital or doctor without delay. ▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If solids or aerosol mists are deposited upon the skin: ▸ Flush skin and hair with running water (and soap if available). ▸ Remove any adhering solids with industrial skin cleansing cream. ▸ DO NOT use solvents. ▸ Seek medical attention in the event of irritation.
Inhalation	If aerosols, fumes or combustion products are inhaled: ▸ Remove to fresh air. ▸ Lay patient down. Keep warm and rested. ▸ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▸ If breathing is shallow or has stopped, ensure clear airway and apply resuscitation, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▸ Transport to hospital, or doctor.
Ingestion	▸ Avoid giving milk or oils. ▸ Avoid giving alcohol. Not considered a normal route of entry.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

Following acute or short term repeated exposures to toluene:

- Toluene is absorbed across the alveolar barrier, the blood/air mixture being 11.2/15.6 (at 37 degrees C.) The concentration of toluene, in expired breath, is of the order of 18 ppm following sustained exposure to 100 ppm. The tissue/blood proportion is 1/3 except in adipose where the proportion is 8/10.
- Metabolism by microsomal mono-oxygenation, results in the production of hippuric acid. This may be detected in the urine in amounts between 0.5 and 2.5 g/24 hr which represents, on average 0.8 gm/gm of creatinine. The biological half-life of hippuric acid is in the order of 1-2 hours.
- Primary threat to life from ingestion and/or inhalation is respiratory failure.
- Patients should be quickly evaluated for signs of respiratory distress (eg cyanosis, tachypnoea, intercostal retraction, obtundation) and given oxygen. Patients with inadequate tidal volumes or poor arterial blood gases (pO₂ <50 mm Hg or pCO₂ > 50 mm Hg) should be intubated.
- Arrhythmias complicate some hydrocarbon ingestion and/or inhalation and electrocardiographic evidence of myocardial damage has been reported; intravenous lines and cardiac monitors should be established in obviously symptomatic patients. The lungs excrete inhaled solvents, so that hyperventilation improves clearance.
- A chest x-ray should be taken immediately after stabilisation of breathing and circulation to document aspiration and detect the presence of pneumothorax.
- Epinephrine (adrenaline) is not recommended for treatment of bronchospasm because of potential myocardial sensitisation to catecholamines. Inhaled cardioselective bronchodilators (e.g. Alupent, Salbutamol) are the preferred agents, with aminophylline a second choice.
- Lavage is indicated in patients who require decontamination; ensure use.

BIOLOGICAL EXPOSURE INDEX - BEI

These represent the determinants observed in specimens collected from a healthy worker exposed at the Exposure Standard (ES or TLV):

Determinant	Index	Sampling Time	Comments
o-Cresol in urine	0.5 mg/L	End of shift	B
Hippuric acid in urine	1.6 g/g creatinine	End of shift	B, NS
Toluene in blood	0.05 mg/L	Prior to last shift of workweek	

NS: Non-specific determinant; also observed after exposure to other material

B: Background levels occur in specimens collected from subjects NOT exposed

For acute or short term repeated exposures to xylene:

- Gastro-intestinal absorption is significant with ingestions. For ingestions exceeding 1-2 ml (xylene)/kg, intubation and lavage with cuffed endotracheal tube is recommended. The use of charcoal and cathartics is equivocal.
- Pulmonary absorption is rapid with about 60-65% retained at rest.
- Primary threat to life from ingestion and/or inhalation, is respiratory failure.
- Patients should be quickly evaluated for signs of respiratory distress (e.g. cyanosis, tachypnoea, intercostal retraction, obtundation) and given oxygen. Patients with inadequate tidal volumes or poor arterial blood gases (pO₂ < 50 mm Hg or pCO₂ > 50 mm Hg) should be intubated.
- Arrhythmias complicate some hydrocarbon ingestion and/or inhalation and electrocardiographic evidence of myocardial injury has been reported; intravenous lines and cardiac monitors should be established in obviously symptomatic patients. The lungs excrete inhaled solvents, so that hyperventilation improves clearance.
- A chest x-ray should be taken immediately after stabilisation of breathing and circulation to document aspiration and detect the presence of pneumothorax.
- Epinephrine (adrenaline) is not recommended for treatment of bronchospasm because of potential myocardial sensitisation to catecholamines. Inhaled cardioselective bronchodilators (e.g. Alupent, Salbutamol) are the preferred agents, with aminophylline a second choice.

BIOLOGICAL EXPOSURE INDEX - BEI

These represent the determinants observed in specimens collected from a healthy worker exposed at the Exposure Standard (ES or TLV):

Determinant	Index	Sampling Time	Comments
Methylhippu-ric acids in urine	1.5 gm/gm creatinine	End of shift	
	2 mg/min	Last 4 hrs of shift	

SECTION 5 Firefighting measures

Extinguishing media

SMALL FIRE:

- Water spray, dry chemical or CO2

LARGE FIRE:

- Water spray or fog.

Special hazards arising from the substrate or mixture

Fire Incompatibility	▸ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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Advice for firefighters

Fire Fighting	▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ May be violently or explosively reactive. ▸ Wear breathing apparatus plus protective gloves. ▸ Prevent, by any means available, spillage from entering drains or water course.
Fire/Explosion Hazard	▸ Liquid and vapour are highly flammable. ▸ Severe fire hazard when exposed to heat or flame. ▸ Vapour forms an explosive mixture with air. ▸ Severe explosion hazard, in the form of vapour, when exposed to flame or spark. Combustion products include: carbon monoxide (CO) Combustible. Will burn if ignited. carbon dioxide (CO2) other pyrolysis products typical of burning organic material. Contains low boiling substance: Closed containers may rupture due to pressure buildup under fire conditions.

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	▸ Clean up all spills immediately. ▸ Avoid breathing vapours and contact with skin and eyes. ▸ Wear protective clothing, impervious gloves and safety glasses. ▸ Shut off all possible sources of ignition and increase ventilation.
Major Spills	▸ Remove leaking cylinders to a safe place if possible. ▸ Release pressure under safe, controlled conditions by opening the valve. ▸ DO NOT exert excessive pressure on valve; DO NOT attempt to operate damaged valve. ▸ Clear area of personnel and move upwind. ▸ Alert Fire Brigade and tell them location and nature of hazard. ▸ May be violently or explosively reactive. ▸ Wear breathing apparatus plus protective gloves.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 Handling and storage

Precautions for safe handling

Safe handling	▸ Avoid all personal contact, including inhalation. ▸ Wear protective clothing when risk of exposure occurs. ▸ Use in a well-ventilated area. ▸ Prevent concentration in hollows and sumps.
Other information	▸ Store below 38 deg. C. ▸ Keep dry to avoid corrosion of cans. Corrosion may result in container perforation and internal pressure may eject contents of can ▸ Store in original containers in approved flammable liquid storage area. ▸ DO NOT store in pits, depressions, basements or areas where vapours may be trapped. ▸ No smoking, naked lights, heat or ignition sources. ▸ Keep containers securely sealed.

Conditions for safe storage, including any incompatibilities

Suitable container	▸ CARE: Packing of high density product in light weight metal or plastic packages may result in container collapse with product release ▸ Heavy gauge metal packages / Heavy gauge metal drums ▸ Aerosol dispenser.
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	▶ Check that containers are clearly labelled.
Storage incompatibility	▶ Avoid reaction with oxidising agents

SECTION 8 Exposure controls / personal protection

Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
New Zealand Workplace Exposure Standards (WES)	zinc powder	Particulates not otherwise classified	10 mg/m3	Not Available	Not Available	Not Available
New Zealand Workplace Exposure Standards (WES)	zinc powder	Particulates not otherwise classified respirable dust	3 mg/m3	Not Available	Not Available	Not Available
New Zealand Workplace Exposure Standards (WES)	toluene	Toluene (Toluol)	50 ppm / 188 mg/m3	Not Available	Not Available	skin-Skin absorption
New Zealand Workplace Exposure Standards (WES)	xylene	Dimethylbenzene	50 ppm / 217 mg/m3	Not Available	Not Available	Not Available
New Zealand Workplace Exposure Standards (WES)	hydrocarbon propellant	LPG (Liquefied petroleum gas)	1000 ppm / 1800 mg/m3	Not Available	Not Available	Not Available

Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
zinc powder	6 mg/m3	21 mg/m3	120 mg/m3
toluene	Not Available	Not Available	Not Available
xylene	Not Available	Not Available	Not Available
hydrocarbon propellant	65,000 ppm	2.30E+05 ppm	4.00E+05 ppm

Ingredient	Original IDLH	Revised IDLH
zinc powder	Not Available	Not Available
toluene	500 ppm	Not Available
xylene	900 ppm	Not Available
hydrocarbon propellant	2,000 ppm	Not Available

Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.
Personal protection	
Eye and face protection	▶ Safety glasses with side shields. ▶ Chemical goggles. ▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.
Skin protection	See Hand protection below
Hands/feet protection	▶ No special equipment needed when handling small quantities. ▶ OTHERWISE: ▶ For potentially moderate exposures: ▶ Wear general protective gloves, eg. light weight rubber gloves. ▶ For potentially heavy exposures: ▶ Wear chemical protective gloves, eg. PVC. and safety footwear.
Body protection	See Other protection below
Other protection	No special equipment needed when handling small quantities. OTHERWISE: ▶ Overalls. ▶ Skin cleansing cream. ▶ Eyewash unit. ▶ The clothing worn by process operators insulated from earth may develop static charges far higher (up to 100 times) than the minimum ignition energies for various flammable gas-air mixtures. This holds true for a wide range of clothing materials

including cotton.
 ▶ Avoid dangerous levels of charge by ensuring a low resistivity of the surface material worn outermost.
 BREThERICK: Handbook of Reactive Chemical Hazards.

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

"Forsberg Clothing Performance Index".

The effect(s) of the following substance(s) are taken into account in the

computer-generated selection:

CRC 2092 Stainless Steel Zinc

Material	CPI
PE/EVAL/PE	A
PVA	A
VITON	A
TEFLON	B
BUTYL	C
BUTYL/NEOPRENE	C
CPE	C
HYPALON	C
NAT+NEOPR+NITRILE	C
NATURAL+NEOPRENE	C
NEOPRENE	C
NEOPRENE/NATURAL	C
NITRILE	C
NITRILE+PVC	C
PVC	C
PVDC/PE/PVDC	C
SARANEX-23	C
SARANEX-23 2-PLY	C
VITON/CHLOROBUTYL	C
VITON/NEOPRENE	C

* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

Respiratory protection

Type AX Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required. Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	AX-AUS	-	AX-PAPR-AUS / Class 1
up to 50 x ES	-	AX-AUS / Class 1	-
up to 100 x ES	-	AX-2	AX-PAPR-2 ^

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- ▶ Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- ▶ The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- ▶ Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

SECTION 9 Physical and chemical properties

Information on basic physical and chemical properties

Appearance	Viscous stainless steel coloured, highly flammable liquid; not miscible with water. Supplied as an aerosol pack. Contents under PRESSURE . Contains highly flammable hydrocarbon propellant.		
Physical state	Liquid	Relative density (Water = 1)	Not Available
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	Not Applicable	Decomposition temperature	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	Not Available	Molecular weight (g/mol)	Not Applicable

Flash point (°C)	-81 (propellant)	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	HIGHLY FLAMMABLE.	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Immiscible	pH as a solution (1%)	Not Applicable
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	▸ Elevated temperatures. ▸ Presence of open flame. ▸ Product is considered stable. ▸ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled	Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo. Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual. There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Inhalation of toxic gases may cause: ▸ Central Nervous System effects including depression, headache, confusion, dizziness, stupor, coma and seizures; ▸ respiratory: acute lung swellings, shortness of breath, wheezing, rapid breathing, other symptoms and respiratory arrest; ▸ heart: collapse, irregular heartbeats and cardiac arrest; ▸ gastrointestinal: irritation, ulcers, nausea and vomiting (may be bloody), and abdominal pain. Central nervous system (CNS) depression may include general discomfort, symptoms of giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech and may progress to unconsciousness. Serious poisonings may result in respiratory depression and may be fatal. Material is highly volatile and may quickly form a concentrated atmosphere in confined or unventilated areas. The vapour may displace and replace air in breathing zone, acting as a simple asphyxiant. This may happen with little warning of overexposure. Inhalation of high concentrations of gas/vapour causes lung irritation with coughing and nausea, central nervous depression with headache and dizziness, slowing of reflexes, fatigue and inco-ordination. WARNING: Intentional misuse by concentrating/inhaling contents may be lethal. Headache, fatigue, tiredness, irritability and digestive disturbances (nausea, loss of appetite and bloating) are the most common symptoms of xylene overexposure. Injury to the heart, liver, kidneys and nervous system has also been noted amongst workers. Inhaling high concentrations of mixed hydrocarbons can cause narcosis, with nausea, vomiting and lightheadedness. Low molecular weight (C2-C12) hydrocarbons can irritate mucous membranes and cause incoordination, giddiness, nausea, vertigo, confusion, headache, appetite loss, drowsiness, tremors and stupor. Exposure to hydrocarbons may result in irregularity of heart beat. Symptoms of moderate poisoning may include dizziness, headache, nausea.
Ingestion	Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual. Swallowing of the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis; serious consequences may result. (ICSC13733) Not normally a hazard due to physical form of product. Considered an unlikely route of entry in commercial/industrial environments
Skin Contact	The material may cause moderate inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterised by redness, swelling and blistering. Repeated exposure may cause skin cracking, flaking or drying following normal handling and use. Skin contact with the material may damage the health of the individual; systemic effects may result following absorption. Spray mist may produce discomfort Open cuts, abraded or irritated skin should not be exposed to this material
Eye	Not considered to be a risk because of the extreme volatility of the gas. There is evidence that material may produce eye irritation in some persons and produce eye damage 24 hours or more after instillation. Severe inflammation may be expected with pain.

Chronic	Harmful: danger of serious damage to health by prolonged exposure through inhalation. This material can cause serious damage if one is exposed to it for long periods. It can be assumed that it contains a substance which can produce severe defects. Based on experience with animal studies, exposure to the material may result in toxic effects to the development of the foetus, at levels which do not cause significant toxic effects to the mother. There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Main route of exposure to the gas in the workplace is by inhalation. Constant or exposure over long periods to mixed hydrocarbons may produce stupor with dizziness, weakness and visual disturbance, weight loss and anaemia, and reduced liver and kidney function. Skin exposure may result in drying and cracking and redness of the skin. Women exposed to xylene in the first 3 months of pregnancy showed a slightly increased risk of miscarriage and birth defects. Evaluation of workers chronically exposed to xylene has demonstrated lack of genetic toxicity. Intentional abuse (glue sniffing) or occupational exposure to toluene can result in chronic habituation. Chronic abuse has caused inco-ordination, tremors of the extremities (due to widespread cerebrum withering), headache, abnormal speech, temporary memory loss, convulsions, coma, drowsiness, reduced colour perception, blindness, nystagmus (rapid, involuntary eye movements), hearing loss leading to deafness and mild dementia.
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CRC 2092 Stainless Steel Zinc	TOXICITY	IRRITATION
	Not Available	Not Available
zinc powder	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: 1130 mg/kg ^[2]	Eye: no adverse effect observed (not irritating) ^[1]
	Oral(Rat) LD50; >2000 mg/kg ^[1]	Skin: no adverse effect observed (not irritating) ^[1]
toluene	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >5000 mg/kg ^[1]	Eye (rabbit): 2mg/24h - SEVERE
	Inhalation(Rat) LC50; 12.528.8 mg/l ^[2]	Eye (rabbit):0.87 mg - mild
	Oral(Rat) LD50; 636 mg/kg ^[2]	Eye (rabbit):100 mg/30sec - mild
		Eye: adverse effect observed (irritating) ^[1]
		Skin (rabbit):20 mg/24h-moderate
		Skin (rabbit):500 mg - moderate
		Skin: adverse effect observed (irritating) ^[1]
		Skin: no adverse effect observed (not irritating) ^[1]
xylene	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >1700 mg/kg ^[2]	Eye (human): 200 ppm irritant
	Inhalation(Rat) LC50; 5922 ppm ^[1]	Eye (rabbit): 5 mg/24h SEVERE
	Oral(Rat) LD50; 11.494 mg/kg ^[1]	Eye (rabbit): 87 mg mild
		Eye: adverse effect observed (irritating) ^[1]
		Skin (rabbit):500 mg/24h moderate
hydrocarbon propellant	TOXICITY	IRRITATION
	Inhalation(Rat) LC50; 658 mg/l ^[2]	Not Available
Legend:	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

ZINC POWDER	Inhalation (human) TClO: 124 mg/m3/50min. Skin (human):0.3mg/3DaysInt. mild
XYLENE	Reproductive effector in rats The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The substance is classified by IARC as Group 3: NOT classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing.
HYDROCARBON PROPELLANT	No significant acute toxicological data identified in literature search. inhalation of the gas
CRC 2092 Stainless Steel Zinc & TOLUENE & XYLENE	The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.

CRC 2092 Stainless Steel Zinc & TOLUENE	For toluene: Acute toxicity: Humans exposed to high levels of toluene for short periods of time experience adverse central nervous system effects ranging from headaches to intoxication, convulsions, narcosis (sleepiness) and death. When inhaled or swallowed, toluene can cause severe central nervous system depression, and in large doses has a narcotic effect. 60mL has caused death. Death of heart muscle fibres, liver swelling, congestion and bleeding of the lungs and kidney injury were all found on autopsy. Exposure to inhalation at a concentration of 600 parts per million for 8 hours resulted in the same and more serious symptoms including euphoria (a feeling of well-being), dilated pupils, convulsions and nausea.			
	Acute Toxicity	✓	Carcinogenicity	✗
	Skin Irritation/Corrosion	✓	Reproductivity	✓
	Serious Eye Damage/Irritation	✓	STOT - Single Exposure	✓
	Respiratory or Skin sensitisation	✗	STOT - Repeated Exposure	✓
Mutagenicity	✗	Aspiration Hazard	✗	

Legend: ✗ – Data either not available or does not fill the criteria for classification
 ✓ – Data available to make classification

SECTION 12 Ecological information

Toxicity

CRC 2092 Stainless Steel Zinc	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
zinc powder	Endpoint	Test Duration (hr)	Species	Value	Source
	NOEC(ECx)	336	Fish	<0.001mg/L	4
	LC50	96	Fish	0.001mg/L	4
	EC50	48	Crustacea	1.4mg/l	2
	EC50	72	Algae or other aquatic plants	0.005mg/l	4
	EC50	96	Algae or other aquatic plants	0.027mg/L	4
toluene	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96	Fish	>1.055<1.809mg/L	4
	EC50	48	Crustacea	3.78mg/L	5
	NOEC(ECx)	96	Crustacea	0.104mg/L	4
	EC50	96	Algae or other aquatic plants	>1.632mg/L	4
xylene	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	48	Crustacea	1.8mg/l	2
	LC50	96	Fish	2.6mg/l	2
	EC50	72	Algae or other aquatic plants	4.6mg/l	2
	EC50(ECx)	Not Reported	Fish	0.017mg/L	4
hydrocarbon propellant	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96	Fish	24.11mg/l	2
	EC50(ECx)	96	Algae or other aquatic plants	7.71mg/l	2
	EC50	96	Algae or other aquatic plants	7.71mg/l	2
	LC50	96	Fish	24.11mg/l	2
	EC50(ECx)	96	Algae or other aquatic plants	7.71mg/l	2
	EC50	96	Algae or other aquatic plants	7.71mg/l	2
Legend:		Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data			

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
 Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.
 Wastes resulting from use of the product must be disposed of on site or at approved waste sites.
 For Metal:
 Atmospheric Fate - Metal-containing inorganic substances generally have negligible vapour pressure and are not expected to partition to air.
 Environmental Fate: Environmental processes, such as oxidation, the presence of acids or bases and microbiological processes, may transform insoluble metals

to more soluble ionic forms. Environmental processes may enhance bioavailability and may also be important in changing solubilities.

Aquatic/Terrestrial Fate: When released to dry soil, most metals will exhibit limited mobility and remain in the upper layer; some will leach locally into ground water and/ or surface water ecosystems when soaked by rain or melt ice. A metal ion is considered infinitely persistent because it cannot degrade further.

For Aromatic Substances Series:

Environmental Fate: Large, molecularly complex polycyclic aromatic hydrocarbons, or PAHs, are persistent in the environment longer than smaller PAHs.

Atmospheric Fate: PAHs are 'semi-volatile substances" which can move between the atmosphere and the Earth's surface in repeated, temperature-driven cycles of deposition and volatilization. Terrestrial Fate: BTEX compounds have the potential to move through soil and contaminate ground water, and their vapors are highly flammable and explosive.

Ecotoxicity - Within an aromatic series, acute toxicity increases with increasing alkyl substitution on the aromatic nucleus.

For Xylenes:

log Koc : 2.05-3.08; Koc : 25.4-204; Half-life (hr) air : 0.24-42; Half-life (hr) H2O surface water : 24-672; Half-life (hr) H2O ground : 336-8640; Half-life (hr) soil : 52-672; Henry's Pa m3 /mol : 637-879; Henry's atm m3 /mol - 7.68E-03; BOD 5 if unstated - 1.4,1%; COD - 2.56,13% ThOD - 3.125 : BCF : 23; log BCF : 1.17-2.41.

Environmental Fate: Most xylenes released to the environment will occur in the atmosphere and volatilisation is the dominant environmental fate process. Soil - Xylenes are expected to have moderate mobility in soil evaporating rapidly from soil surfaces. The extent of the degradation is expected to depend on its concentration, residence time in the soil, the nature of the soil, and whether resident microbial populations have been acclimated.

For Toluene:

log Kow : 2.1-3;
log Koc : 1.12-2.85;
Koc : 37-260;
log Kom : 1.39-2.89;
Half-life (hr) air : 2.4-104;
Half-life (hr) H2O surface water : 5.55-528;
Half-life (hr) H2O ground : 168-2628;
Half-life (hr) soil : <48-240;
Henry's Pa m3 /mol : 518-694;
Henry's atm m3 /mol : 5.94;
E-03BOD 5 0.86-2.12, 5%COD - 0.7-2.52,21-27%;
ThOD - 3.13 : BCF - 1.67-380;
log BCF - 0.22-3.28.

Atmospheric Fate: The majority of toluene evaporates to the atmosphere from the water and soil. The main degradation pathway for toluene in the atmosphere is reaction with photochemically produced hydroxyl radicals. The estimated atmospheric half life for toluene is about 13 hours.

DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
toluene	LOW (Half-life = 28 days)	LOW (Half-life = 4.33 days)
xylene	HIGH (Half-life = 360 days)	LOW (Half-life = 1.83 days)

Bioaccumulative potential

Ingredient	Bioaccumulation
toluene	LOW (BCF = 90)
xylene	MEDIUM (BCF = 740)

Mobility in soil

Ingredient	Mobility
toluene	LOW (KOC = 268)

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	▶ DO NOT allow wash water from cleaning or process equipment to enter drains. ▶ It may be necessary to collect all wash water for treatment before disposal. ▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▶ Where in doubt contact the responsible authority. ▶ Consult State Land Waste Management Authority for disposal. ▶ Discharge contents of damaged aerosol cans at an approved site. ▶ Allow small quantities to evaporate. ▶ DO NOT incinerate or puncture aerosol cans.
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Ensure that the hazardous substance is disposed in accordance with the Hazardous Substances (Disposal) Notice 2017

Disposal Requirements

Packages that have been in direct contact with the hazardous substance must be only disposed if the hazardous substance was appropriately removed and cleaned out from the package. The package must be disposed according to the manufacturer's directions taking into account the material it is made of. Packages which hazardous content have been appropriately treated and removed may be recycled.

The hazardous substance must only be disposed if it has been treated by a method that changed the characteristics or composition of the substance and it is no

longer hazardous.

SECTION 14 Transport information

Labels Required

	
Marine Pollutant	
HAZCHEM	Not Applicable

Land transport (UN)

UN number	1950	
UN proper shipping name	AEROSOLS	
Transport hazard class(es)	Class	2.1
	Subrisk	Not Applicable
Packing group	Not Applicable	
Environmental hazard	Environmentally hazardous	
Special precautions for user	Special provisions	63; 190; 277; 327; 344; 381
	Limited quantity	1000ml

Air transport (ICAO-IATA / DGR)

UN number	1950	
UN proper shipping name	Aerosols, flammable	
Transport hazard class(es)	ICAO/IATA Class	2.1
	ICAO / IATA Subrisk	Not Applicable
	ERG Code	10L
Packing group	Not Applicable	
Environmental hazard	Environmentally hazardous	
Special precautions for user	Special provisions	A145 A167 A802
	Cargo Only Packing Instructions	203
	Cargo Only Maximum Qty / Pack	150 kg
	Passenger and Cargo Packing Instructions	203
	Passenger and Cargo Maximum Qty / Pack	75 kg
	Passenger and Cargo Limited Quantity Packing Instructions	Y203
	Passenger and Cargo Limited Maximum Qty / Pack	30 kg G

Sea transport (IMDG-Code / GGVSee)

UN number	1950	
UN proper shipping name	AEROSOLS	
Transport hazard class(es)	IMDG Class	2.1
	IMDG Subrisk	Not Applicable
Packing group	Not Applicable	
Environmental hazard	Marine Pollutant	
Special precautions for user	EMS Number	F-D , S-U
	Special provisions	63 190 277 327 344 381 959
	Limited Quantities	1000 ml

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group
zinc powder	Not Available
toluene	Not Available
xylene	Not Available
hydrocarbon propellant	Not Available

Transport in bulk in accordance with the ICG Code

Product name	Ship Type
zinc powder	Not Available
toluene	Not Available
xylene	Not Available
hydrocarbon propellant	Not Available

SECTION 15 Regulatory information

Safety, health and environmental regulations / legislation specific for the substance or mixture

This substance is to be managed using the conditions specified in an applicable Group Standard

HSR Number	Group Standard
HSR002515	Aerosols (Flammable) Group Standard 2017

zinc powder is found on the following regulatory lists	
New Zealand Approved Hazardous Substances with controls	New Zealand Inventory of Chemicals (NZIoC)
New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals	New Zealand Workplace Exposure Standards (WES)
New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data	
toluene is found on the following regulatory lists	
Chemical Footprint Project - Chemicals of High Concern List	New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs	New Zealand Inventory of Chemicals (NZIoC)
New Zealand Approved Hazardous Substances with controls	New Zealand Workplace Exposure Standards (WES)
New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals	
xylene is found on the following regulatory lists	
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs	New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data
New Zealand Approved Hazardous Substances with controls	New Zealand Inventory of Chemicals (NZIoC)
New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals	New Zealand Workplace Exposure Standards (WES)
hydrocarbon propellant is found on the following regulatory lists	
Chemical Footprint Project - Chemicals of High Concern List	New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data
New Zealand Approved Hazardous Substances with controls	New Zealand Inventory of Chemicals (NZIoC)
New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals	New Zealand Workplace Exposure Standards (WES)

Hazardous Substance Location

Subject to the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Hazard Class	Quantity (Closed Containers)	Quantity (Open Containers)
2.1.2A	3 000 L (aggregate water capacity)	3 000 L (aggregate water capacity)

Certified Handler

Subject to Part 4 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Class of substance	Quantities
Not Applicable	Not Applicable

Refer Group Standards for further information

Maximum quantities of certain hazardous substances permitted on passenger service vehicles

Subject to Regulation 13.14 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Hazard Class	Gas (aggregate water capacity in mL)	Liquid (L)	Solid (kg)	Maximum quantity per package for each classification
2.1.2A				1L (aggregate water capacity)

Tracking Requirements

Not Applicable

National Inventory Status

National Inventory	Status
Australia - AIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (zinc powder; toluene; xylene; hydrocarbon propellant)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	No (zinc powder)
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - ARIPS	Yes
Legend:	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

SECTION 16 Other information

Revision Date	07/02/2020
Initial Date	18/09/2006

SDS Version Summary

Version	Issue Date	Sections Updated
5.1.1.1	01/11/2019	One-off system update. NOTE: This may or may not change the GHS classification
6.1.1.1	07/02/2020	Physical Properties

Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

- PC—TWA: Permissible Concentration-Time Weighted Average
- PC—STEL: Permissible Concentration-Short Term Exposure Limit
- IARC: International Agency for Research on Cancer
- ACGIH: American Conference of Governmental Industrial Hygienists
- STEL: Short Term Exposure Limit
- TEEL: Temporary Emergency Exposure Limit.
- IDLH: Immediately Dangerous to Life or Health Concentrations
- OSF: Odour Safety Factor
- NOAEL :No Observed Adverse Effect Level
- LOAEL :Lowest Observed Adverse Effect Level

TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index

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TEL (+61 3) 9572 4700.



Safety Data Sheet California CARB Compliant

1 - Identification

Product Name: WD-40 Multi-Use Product Aerosol	Manufacturer: WD-40 Company
Product Use: Lubricant, Penetrant, Drives Out Moisture, Removes and Protects Surfaces From Corrosion	Address: 9715 Businesspark Avenue San Diego, California, USA 92131
Restrictions on Use: None identified	Telephone:
SDS Date Of Preparation: August 2, 2021	Emergency: 1-888-324-7596
	Information: 1-888-324-7596
	Chemical Spills: 1-800-424-9300 (Chemtrec) 1-703-527-3887 (International Calls)

2 – Hazards Identification

Hazcom 2012/GHS Classification:

Flammable Aerosol Category 1

Gas Under Pressure: Compressed Gas

Aspiration Toxicity Category 1

Specific Target Organ Toxicity Single Exposure Category 3 (nervous system effects)

Note: This product is a consumer product and is labeled in accordance with the US Consumer Product Safety Commission regulations which take precedence over OSHA Hazard Communication labeling. The actual container label will not include the label elements below. The labeling below applies to industrial/professional products.

Label Elements:



DANGER!

Extremely Flammable Aerosol.

Contains gas under pressure; may explode if heated.

May be fatal if swallowed and enters airways.

May cause drowsiness or dizziness.

Prevention

Keep away from heat, sparks, open flames, hot surfaces. – No smoking.

Do not spray on an open flame or other ignition source.

Pressurized container: Do not pierce or burn, even after use.

Avoid breathing vapors or mists.

Use only outdoors or in a well-ventilated area.

Response

IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting.

IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.

Storage

Store locked up.

Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. Store in a well-ventilated place.

Disposal

Dispose of contents and container in accordance with local and national regulations.

3 - Composition/Information on Ingredients

Ingredient	CAS #	Weight Percent	US Hazcom 2012/ GHS Classification
LVP Aliphatic Hydrocarbon	64742-47-8	45-50%	Aspiration Toxicity Category 1
Petroleum Base Oil	64742-56-9 64742-65-0 64742-53-6 64742-54-7 64742-71-8	<35%	Not Hazardous
Aliphatic Hydrocarbon	64742-47-8	<25%	Flammable Liquid Category 3 Aspiration Toxicity Category 1 Specific Target Organ Toxicity Single Exposure Category 3 (nervous system effects)
Carbon Dioxide	124-38-9	2-3%	Simple Asphyxiant Gas Under Pressure, Compressed Gas

Note: The specific chemical identity and exact percentages are a trade secret.

4 – First Aid Measures

Ingestion (Swallowed): Aspiration Hazard. DO NOT induce vomiting. Call physician, poison control center or the WD-40 Safety Hotline at 1-888-324-7596 immediately.

Eye Contact: Flush thoroughly with water. Remove contact lenses if present after the first 5 minutes and continue flushing for several more minutes. Get medical attention if irritation persists.

Skin Contact: Wash with soap and water. If irritation develops and persists, get medical attention.

Inhalation (Breathing): If irritation is experienced, move to fresh air. Get medical attention if irritation or other symptoms develop and persist.

Signs and Symptoms of Exposure: Harmful or fatal if swallowed. Aspiration of liquid into the lungs during swallowing or vomiting may cause lung damage. May cause eye and respiratory irritation. Inhalation of mists or vapors may cause drowsiness, dizziness and other nervous system effects. Skin contact may cause drying of the skin.

Indication of Immediate Medical Attention/Special Treatment Needed: Immediate medical attention is needed for ingestion.

5 – Fire Fighting Measures

Suitable (and unsuitable) Extinguishing Media: Use water fog, dry chemical, carbon dioxide or foam. Do not use water jet or flooding amounts of water. Burning product will float on the surface and spread fire.

Specific Hazards Arising from the Chemical: Extremely flammable aerosol. Contents under pressure. Keep away from ignition sources and open flames. Exposure of containers to extreme heat and flames can cause them to rupture often with violent force. Vapors are heavier than air and may travel along surfaces to remote ignition sources and flash back. Combustion will produce oxides of carbon and hydrocarbons.

Special Protective Equipment and Precautions for Fire-Fighters: Firefighters should always wear positive pressure self-contained breathing apparatus and full protective clothing. Cool fire-exposed containers with water. Use shielding to protect against bursting containers.

6 – Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Procedures: Wear appropriate protective clothing (see Section 8). Eliminate all sources of ignition and ventilate area.

Methods and Materials for Containment/Cleanup: Leaking cans should be placed in a plastic bag or open pail until the pressure has dissipated. Contain and collect liquid with an inert absorbent and place in a container for disposal. Clean spill area thoroughly. Report spills to authorities as required.

7 – Handling and Storage

Precautions for Safe Handling: Avoid contact with eyes. Avoid prolonged contact with skin. Avoid breathing vapors or aerosols. Use only with adequate ventilation. Keep away from heat, sparks, pilot lights, hot surfaces and open flames. Unplug electrical tools, motors and appliances before spraying or bringing the can near any source of electricity. Electricity can burn a hole in the can and cause contents to burst into flames. To avoid serious burn injury, do not let the can touch battery terminals, electrical connections on motors or appliances or any other source of electricity. Wash thoroughly with soap and water after handling. Keep containers closed when not in use. Keep out of the reach of children. Do not puncture, crush or incinerate containers, even when empty.

Conditions for Safe Storage: Store in a cool, well-ventilated area, away from incompatible materials. Do not store above 120°F or in direct sunlight. U.F.C (NFPA 30B) Level 3 Aerosol. Store away from oxidizers.

8 – Exposure Controls/Personal Protection

Chemical	Occupational Exposure Limits
LVP Aliphatic Hydrocarbon	1200 mg/m ³ TWA (manufacturer recommended)
Petroleum Base Oil	5 mg/m ³ TWA (Inhalable) ACGIH TLV (as Mineral oil) 5 mg/m ³ TWA OSHA PEL (as Oil mist, mineral)
Aliphatic Hydrocarbon	1200 mg/m ³ TWA (manufacturer recommended)
Carbon Dioxide	5000 ppm TWA, 30,000 ppm STEL ACGIH TLV 5000 ppm TWA OSHA PEL

The Following Controls are Recommended for Normal Consumer Use of this Product

Appropriate Engineering Controls: Use in a well-ventilated area.

Personal Protection:

Eye Protection: Avoid eye contact. Always spray away from your face.

Skin Protection: Avoid prolonged skin contact. Chemical resistant gloves recommended for operations where skin contact is likely.

Respiratory Protection: None needed for normal use with adequate ventilation.

For Bulk Processing or Workplace Use the Following Controls are Recommended

Appropriate Engineering Controls: Use adequate general and local exhaust ventilation to maintain exposure levels below that occupational exposure limits.

Personal Protection:

Eye Protection: Safety goggles recommended where eye contact is possible.

Skin Protection: Wear chemical resistant gloves.

Respiratory Protection: None required if ventilation is adequate. If the occupational exposure limits are exceeded, wear a NIOSH approved respirator. Respirator selection and use should be based on contaminant type, form and concentration. Follow OSHA 1910.134, ANSI Z88.2 and good Industrial Hygiene practice.

Work/Hygiene Practices: Wash with soap and water after handling.

9 – Physical and Chemical Properties

Appearance:	Light green to amber liquid	Flammable Limits: (Solvent Portion)	LEL: 0.6% UEL: 8%
Odor:	Mild petroleum odor	Vapor Pressure:	95-115 PSI @ 70°F
Odor Threshold:	Not established	Vapor Density:	Greater than 1 (air=1)
pH:	Not Applicable	Relative Density:	0.8 – 0.82 @ 60°F
Melting/Freezing Point:	Not established	Solubilities:	Insoluble in water
Boiling Point/Range:	361 - 369°F (183 - 187°C)	Partition Coefficient; n-octanol/water:	Not established
Flash Point:	138°F (59°C) Tag Closed Cup (liquid)	Autoignition Temperature:	Not established
Evaporation Rate:	Not established	Decomposition Temperature:	Not established
Flammability (solid, gas):	Flammable Aerosol	Viscosity:	2.79-2.96 cSt @ 100°F
VOC:	24.1%	Pour Point:	-63°C (-81.4°F) ASTM

	MIR=0.43gO3/gVOC		D-97
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10 – Stability and Reactivity

Reactivity: Not reactive under normal conditions

Chemical Stability: Stable

Possibility of Hazardous Reactions: May react with strong oxidizers generating heat.

Conditions to Avoid: Avoid heat, sparks, flames and other sources of ignition. Do not puncture or incinerate containers.

Incompatible Materials: Strong oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide and carbon dioxide.

11 – Toxicological Information

Symptoms of Overexposure:

Inhalation: High concentrations may cause nasal and respiratory irritation and central nervous system effects such as headache, dizziness and nausea. Intentional abuse may be harmful or fatal.

Skin Contact: Prolonged and/or repeated contact may produce mild irritation and defatting with possible dermatitis.

Eye Contact: Contact may be irritating to eyes. May cause redness and tearing.

Ingestion: This product has low oral toxicity. Swallowing may cause gastrointestinal irritation, nausea, vomiting and diarrhea. This product is an aspiration hazard. If swallowed, can enter the lungs and may cause chemical pneumonitis, severe lung damage and death.

Chronic Effects: None expected.

Carcinogen Status: None of the components are listed as a carcinogen or suspect carcinogen by IARC, NTP, ACGIH or OSHA.

Reproductive Toxicity: None of the components is considered a reproductive hazard.

Numerical Measures of Toxicity:

Acute Toxicity Estimates: Oral > 5,000 mg/kg; Dermal >2,000 mg/kg based on an assessment of the ingredients. This product is not classified as toxic by established criteria. It is an aspiration hazard.

12 – Ecological Information

Ecotoxicity: No specific aquatic toxicity data is currently available; however components of this product are not expected to be harmful to aquatic organisms

Persistence and Degradability: Components are readily biodegradable.

Bioaccumulative Potential: Bioaccumulation is not expected based on an assessment of the ingredients.

Mobility in Soil: No data available

Other Adverse Effects: None known

13 - Disposal Considerations

If this product becomes a waste, it would be expected to meet the criteria of a RCRA ignitable hazardous waste (D001). However, it is the responsibility of the generator to determine at the time of disposal the proper classification and method of disposal. Do not puncture or incinerate containers, even empty. Dispose in accordance with federal, state, and local regulations.

14 – Transportation Information

DOT Surface Shipping Description: UN1950, Aerosols, 2.1 Ltd. Qty

(Note: Shipping Papers are not required for Limited Quantities unless transported by air or vessel – each package must be marked with the Limited Quantity Mark)

IMDG Shipping Description: UN1950, Aerosols, 2.1, LTD QTY

ICAO Shipping Description: UN1950, Aerosols, flammable, 2.1

NOTE: WD-40 Company does not test aerosol cans to assure that they meet the pressure and other requirements for transport by air. We do not recommend that our aerosol products be transported by air.

15 – Regulatory Information

U.S. Federal Regulations:

CERCLA 103 Reportable Quantity: This product is not subject to CERCLA reporting requirements, however, oil spills are reportable to the National Response Center under the Clean Water Act and many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.

SARA TITLE III:

Hazard Category For Section 311/312: Refer to Section 2 for the OSHA Hazard Classification.

Section 313 Toxic Chemicals: This product contains the following chemicals subject to SARA Title III Section 313 Reporting requirements: None

Section 302 Extremely Hazardous Substances (TPQ): None

EPA Toxic Substances Control Act (TSCA) Status: All of the components of this product are listed on the TSCA inventory.

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65): This product does not require a California Proposition 65 warning.

VOC Regulations: This product complies with the consumer product VOC limits of CARB, the US EPA and states adopting the OTC VOC rules.

Canadian Environmental Protection Act: All of the ingredients are listed on the Canadian Domestic Substances List or exempt from notification

16 – Other Information

HMIS Hazard Rating:

Health – 1 (slight hazard), Fire Hazard – 4 (severe hazard), Physical Hazard – 0 (minimal hazard)

Revision Date: August 2, 2021

Supersedes: March 5, 2019

Revision Summary: Section 9: Appearance

Prepared by: Industrial Health & Safety Consultants, Inc. Shelton, CT, USA

Reviewed by: I. Kowalski

Regulatory Affairs Dept.

1012200/No.0084706

SDS ATTACHMENT

PLEASE ATTACH THIS COMPLETED SHEET TO THE SDS FOR:

PRODUCT:

ZG90 Zinc Galv

DATE:

(SDS date)

7-Feb-20

1. Manufacturer/Supplier:

Tradegear Ltd
Level 1, 99 Clarence Street
Riccarton
Christchurch 8011
New Zealand
Phone: 0800 22 44 34 or +64 3 341 8055
Fax: 0800 22 11 51 or +64 9 522 8833
24 hr emergency contact: +64 21 510 622
Website: www.tradegear.co.nz
Email: office@tradegear.co.nz

Emergency Information:

National Poison Centre: 0800 764 766
Chemcall 24/7 Emergency Response Service: 0800 243 622

2 & 15. Hazards Identification & Regulatory Requirements:

Product Name:	ZG-90 Aerosol (Zinc Cold-Glav)
Group Standard, Approval #	Aerosols (Flammable) Group Standard 2006, HSR002515
HSNO Classes (from GHS codes)	2.1.2A, 6.3A, 6.4A, 6.9B, 9.1C
Class 9 Hazard/Precautionary Statements	Harmful to aquatic life with long lasting effects. Read label before use (supply to public) Read SDS before use (supply to public) Avoid release to the environment
TEL or EEL applicable?	None

Productname : ZG-90
Ref.Nr.: BDS002214_3_20200207 (EN)

Creationdate : 07.02.20 Version : 1.2
Replaces: BDS002214_20190919

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

ZG-90
Aerosol

1.2. Relevant identified uses of the substance or mixture and uses advised against

Paints

1.3. Details of the supplier of the safety data sheet

CRC Industries UK Ltd.
Wylds Road
Castlefield Industrial Estate
TA6 4DD Bridgwater Somerset
United Kingdom
Tel.: +44 1278 727200
Fax.: +44 1278 425644
E-mail : hse.uk@crcind.com

1.4. Emergency telephone number

(+44)(0)1278 72 7200 (office hours)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

Physical:	Aerosols, category 1 Extremely flammable aerosol. Pressurised container: May burst if heated.
Classification is based on test data.	
Health:	Eye irritation, category 2 Causes serious eye irritation. Specific target organ toxicity - single exposure, category 3 May cause drowsiness or dizziness.
Classification based on calculation method.	
Environment:	Hazardous to the aquatic environment, chronic category 3 Harmful to aquatic life with long lasting effects.
Classification based on calculation method.	



Productname : ZG-90
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2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008

Product identifier:	Contains: acetone; propan-2-one; propanone n-butyl acetate 1-methoxy-2-propanol; monopropylene glycol methyl ether
Hazard pictogram(s):	 
Signal word:	Danger
Hazard statement(s):	H222 : Extremely flammable aerosol. H229 : Pressurised container: May burst if heated. H319 : Causes serious eye irritation. H336 : May cause drowsiness or dizziness. H412 : Harmful to aquatic life with long lasting effects.
Precautionary statement(s):	P102 : Keep out of reach of children. P210 : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P211 : Do not spray on an open flame or other ignition source. P251 : Do not pierce or burn, even after use. P261 : Avoid breathing dust/fume/gas/mist/vapours/spray. P271 : Use only outdoors or in a well-ventilated area. P410/412 : Protect from sunlight. Do not expose to temperatures exceeding 50°C/122°F. P501-2 : Dispose of contents/container to an authorised waste collection point.
Supplemental Hazard information:	Repeated exposure may cause skin dryness or cracking.

2.3. Other hazards

No information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable.

3.2. Mixtures

Hazardous ingredient	Registration number	CAS-nr.	EC-nr	w/w %	Hazard Class and Category	Hazard statement	Notes
dimethyl ether	01-2119472128-37	115-10-6	204-065-8	50-75	Flam. Gas 1, Press. Gas	H220,H280	A
acetone; propan-2-one; propanone	01-2119471330-49	67-64-1	200-662-2	10-25	Flam. Liq. 2, Eye Irrit. 2, STOT SE 3	H225,H319,H336	A
n-butyl acetate	01-	123-	204-	5-10	Flam. Liq. 3, STOT SE 3	H226 H336	



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	2119485493-29	86-4	658-1				
1-methoxy-2-propanol; monopropylene glycol methyl ether	01- 2119457435-35	107- 98-2	203- 539-1	1-5	Flam. Liq. 3, STOT SE 3	H226,H336	A
zinc oxide	01- 2119463881-32	1314- 13-2	215- 222-5	0-1	Aquatic Acute 1, Aquatic Chronic 1	H400,H410	B
aluminium powder (stabilized)	01- 2119529243-45	7429- 90-5	231- 072-3	0-1	Water-react. 2, Flam. Sol. 1	H261,H228	A
Hydrocarbons, C9, aromatics	01- 2119455851-35	-	(918- 668-5)	0-1	Flam. Liq. 3, STOT SE 3, STOT SE 3, Asp. Tox. 1, Aquatic Chronic 2	H226,H335,H336,H304,H411	Q
Hydrocarbons, C9-C11, n- alkanes, isoalkanes, cyclics, < 2% aromatics	01- 2119463258-33	-	(919- 857-5)	0-1	Flam. Liq. 3, Asp. Tox. 1, STOT SE 3	H226,H304,H336	B,Q

Explanation notes

A : substance with Community workplace exposure limit

B : substance with national established workplace exposure limit

Q : The CAS-no is only an indicative identifier to be used outside the EU for global inventory entries.

(* Explanation phrases : see chapter 16)

SECTION 4: First aid measures**4.1. Description of first aid measures**

Contact with eyes :	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Contact with skin :	Take off contaminated clothing and wash before reuse. IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.
Inhalation :	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
Ingestion :	If swallowed accidentally, do not induce vomiting and seek medical advice.

4.2. Most important symptoms and effects, both acute and delayed

Inhalation :	Excessive inhalation of solvent vapours may give rise to nausea, headaches and dizziness
Ingestion :	May cause gastrointestinal disturbances Symptoms : sore throat, abdominal pain, nausea, vomiting
Skin contact :	May cause irritation. Symptoms : redness and pain
Eye contact :	Irritating to eyes Symptoms : redness and pain

4.3. Indication of any immediate medical attention and special treatment needed

General Advice :	If you feel unwell, seek medical advice (show the label where possible) If symptoms persist always call a doctor
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SECTION 5: Firefighting measures

5.1. Extinguishing media

foam, carbon dioxide or dry agent

5.2. Special hazards arising from the substance or mixture

Aerosols may explode if heated above 50°C
Forms hazardous decomposition products
CO,CO2

5.3. Advice for firefighters

Keep container(s) exposed to fire cool, by spraying with water
In case of fire, do not breathe fumes

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Shut off all ignition sources
Ensure adequate ventilation
Wear suitable protective clothing and gloves.

6.2. Environmental precautions

Do not allow to enter public sewers and watercourses
If polluted water reaches drainage systems or water courses, immediately inform appropriate authorities

6.3. Methods and material for containment and cleaning up

Absorb spillage in suitable inert material
Place in appropriate container

6.4. Reference to other sections

For further information see section 8

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Keep away from heat and sources of ignition
Take precautionary measures against static discharges
Equipment should be earthed
Use explosion-proof electrical/ventilating/lighting/.../equipment.



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Use only non-sparking tools.
 Do not breathe aerosols or vapours.
 Ensure adequate ventilation
 Avoid contact with skin and eyes.
 Wash thoroughly after use
 Wear protective gloves/protective clothing/eye protection/face protection.
 Eyewash bottles should be available

7.2. Conditions for safe storage, including any incompatibilities

Pressurized container : protect from sunlight and do not expose to temperatures exceeding 50°C.
 Keep out of reach of children.

7.3. Specific end use(s)

Paints

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limits :

Hazardous ingredient	CAS-nr.	method	
EU established exposure limits:			
1-methoxy-2-propanol; monopropylene glycol methyl ether	107-98-2	TWA	100 ppm
		STEL	150 ppm
dimethyl ether	115-10-6	TWA	1000 ppm
acetone; propan-2-one; propanone	67-64-1	TWA	500 ppm
National established exposure limits, United Kingdom			
1-methoxy-2-propanol; monopropylene glycol methyl ether	107-98-2	TWA	100 ppm
		STEL	150 ppm
dimethyl ether	115-10-6	TWA	400 ppm
		STEL	500 ppm
n-butyl acetate	123-86-4	TWA	150 ppm
		STEL	200 ppm
acetone; propan-2-one; propanone	67-64-1	TWA	500 ppm
		STEL	1500 ppm
National established exposure limits, Ireland			
1-methoxy-2-propanol; monopropylene glycol methyl ether	107-98-2	TWA	100 ppm
		STEL	150 ppm
dimethyl ether	115-10-6	TWA	1000 ppm
		STEL	-
n-butyl acetate	123-86-4	TWA	150 ppm
		STEL	200 ppm
acetone; propan-2-one; propanone	67-64-1	TWA	500 ppm
		STEL	-



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8.2. Exposure controls

Control procedures :	Ensure adequate ventilation Keep away from heat and sources of ignition Take precautionary measures against static discharges
Personal protection :	Take precautions to avoid contact with skin and eyes when handling the product. Ensure adequate ventilation Wear suitable protective gloves
inhalation :	In case of insufficient ventilation, wear suitable respiratory equipment.
recommended respiratory protection:	Air purifying respirator equipped with organic gas/vapor cartridge (type A)
hands and skin :	When handling the product wear chemical-resistant gloves (standard EN 374). The breakthrough time of the glove should be longer than the total duration of product use. If work lasts longer than the breakthrough time, gloves should be changed part-way through.
Recommended gloves:	Nitrile
eyes :	Wear safety eyewear according to EN 166.
Environmental protection:	Avoid release to the environment. Collect spillage.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

(for aerosols data for the product without propellant)

Appearance : physical state :	DME propelled liquid.
colour :	Grey.
odour :	Characteristic odor.
pH :	Not applicable.
Boiling point/range :	Not available.
Flash point :	< 0 °C
Evaporation rate :	Not available.
Explosion limits : upper limit :	Not available.
lower limit :	Not available.
Vapour pressure :	Not available.
Relative density :	0.973 g/cm ³ (@ 20°C).
Solubility in water :	Insoluble in water
Auto-ignition :	> 200 °C
Viscosity :	Not available.

9.2. Other information

VOC = volatile organic compounds	973 g/l
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SECTION 10: Stability and reactivity



Productname :	ZG-90	Creationdate :	07.02.20 Version : 1.2
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10.1. Reactivity

No hazardous reactions known if used for its intended purpose

10.2. Chemical stability

Stable

10.3. Possibility of hazardous reactions

No hazardous reactions known if used for its intended purpose

10.4. Conditions to avoid

Avoid overheating

10.5. Incompatible materials

Strong oxidising agent

10.6. Hazardous decomposition products

CO,CO2

SECTION 11: Toxicological information**11.1. Information on toxicological effects**

acute toxicity:	based on available data the classification criteria are not met
skin corrosion/irritation:	based on available data the classification criteria are not met
serious eye damage/irritation:	Causes serious eye irritation.
respiratory or skin sensitisation:	based on available data the classification criteria are not met
germ cell mutagenicity:	based on available data the classification criteria are not met
carcinogenicity:	based on available data the classification criteria are not met
toxicity for reproduction:	based on available data the classification criteria are not met
STOT-single exposure:	May cause drowsiness or dizziness.
STOT repeated exposure:	based on available data the classification criteria are not met
aspiration hazard:	based on available data the classification criteria are not met

Information on likely routes of exposure:

Inhalation :	Inhalation of solvent vapours may give rise to nausea, headaches and dizziness
Ingestion :	May cause gastrointestinal disturbances
Skin contact :	May cause irritation.
Eye contact :	Irritating to eyes



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Toxicological data :

Hazardous ingredient	CAS-nr.	method	
1-methoxy-2-propanol; monopropylene glycol methyl ether	107-98-2	LD50 oral rat	4016 mg/kg
		LC50 inhal.rat	27596 mg/l
		LD50 derm.rabit	2000 mg/kg
dimethyl ether	115-10-6	LC50 inhal.rat	309 mg/l
n-butyl acetate	123-86-4	LD50 oral rat	10760 mg/kg
		LC50 inhal.rat	> 20 mg/l
		LD50 derm.rabit	> 1400 mg/kg
zinc oxide	1314-13-2	LD50 oral rat	7950 mg/kg
		LC50 inhal.rat	> 5.7 mg/l
acetone; propan-2-one; propanone	67-64-1	LD50 oral rat	> 5800 mg/kg
		LC50 inhal.rat	76 mg/l
		LD50 derm.rabit	> 15800 mg/kg
Hydrocarbons, C9, aromatics	-	LD50 oral rat	3492 mg/kg
		LC50 inhal.rat	> 6.393 mg/l
		LD50 derm.rabit	> 3160 mg/kg
Hydrocarbons, C9-C11, n-alkanes, isoalkanes, cyclics, < 2% aromatics	-	LD50 oral rat	>5000 mg/kg
		LC50 inhal.rat	4951 mg/m3
		LD50 derm.rabit	>5000 mg/kg

SECTION 12: Ecological information**12.1. Toxicity**

Hazardous to the aquatic environment, chronic category 3
Harmful to aquatic life with long lasting effects.

Ecotoxicological data:

Hazardous ingredient	CAS-nr.	method	
1-methoxy-2-propanol; monopropylene glycol methyl ether	107-98-2	LC50 fish	6812 mg/l
		EC50 daphnia	23300 mg/l
dimethyl ether	115-10-6	IC50 algae	154.9 mg/l
		LC50 fish	4.1 mg/l
		EC50 daphnia	4.4 mg/l
n-butyl acetate	123-86-4	IC50 algae	647 mg/l
		LC50 fish	18 mg/l
		EC50 daphnia	44 mg/l
zinc oxide	1314-13-2	IC50 algae	0.136 mg/l
		LC50 fish	0.169 mg/l
		EC50 daphnia	1.7 mg/l
acetone; propan-2-one; propanone	67-64-1	IC50 algae	530 mg/l
		LC50 fish	5540 mg/l



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		EC50 daphnia	8800 mg/l
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12.2. Persistence and degradability

No experimental data available

12.3. Bioaccumulative potential

No experimental data available

12.4. Mobility in soil

Insoluble in water

12.5. Results of PBT and vPvB assessment

No information available

12.6. Other adverse effects

No experimental data available
GWP (global warming potential): 1

SECTION 13: Disposal considerations

13.1. Waste treatment methods

National regulations : Disposal should be in accordance with local, state or national legislation

SECTION 14: Transport information

14.1. UN number

UN-number : 1950

14.2. UN proper shipping name

Proper shipping name: AEROSOLS

14.3. Transport hazard class(es)

Class: 2.1
ADR/RID - Classification code: 5F

14.4. Packing group

Packing group: Not applicable.



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14.5. Environmental hazards

ADR/RID - Environmentally hazardous:	No
IMDG - Marine pollutant:	No
IATA/ICAO - Environmentally hazardous:	No

14.6. Special precautions for user

ADR/RID - Tunnelcode:	(D)
IMDG - Ems:	F-D, S-U
IATA/ICAO - PAX:	203
IATA/ICAO - CAO	203

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

The Safety Data Sheet is compiled according to the current European requirements.
Regulation (EC) No 1907/2006 (REACH)
Regulation (EC) No 1272/2008 (CLP)
Dir. 2013/10/EU, 2008/47/EC amendment of the aerosol dispenser directive 75/324/EEC.

15.2. Chemical safety assessment

No information available

SECTION 16: Other information

*Explanation hazard statements: H220 : Extremely flammable gas.
H225 : Highly flammable liquid and vapour.
H226 : Flammable liquid and vapour.
H228 : Flammable solid.
H261 : In contact with water releases flammable gases.
H280 : Contains gas under pressure; may explode if heated.
H304 : May be fatal if swallowed and enters airways.
H319 : Causes serious eye irritation.
H335 : May cause respiratory irritation.
H336 : May cause drowsiness or dizziness.
H400 : Very toxic to aquatic life.
H410 : Very toxic to aquatic life with long lasting effects.
H411 : Toxic to aquatic life with long lasting effects.

acronyms and synonyms: TWA = time weight average



Productname :	ZG-90	Creationdate :	07.02.20 Version : 1.2
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STEL = short time exposure limit
VOC = volatile organic compounds
PBT = persistent bioaccumulative toxic
vPvB = very persistent very bioaccumulative

This product should be stored, handled and used in accordance with good industrial hygiene practices and in conformity with any legal regulation.

The information contained herewith is based on the present state of our knowledge and is intended to describe our products from the point of view of safety requirements. It does not guarantee any specific properties.

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