



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

DESMODUR RFE
Revision Number 3.02

Revision date 27-Mar-2022
Supersedes Date: 16-Jun-2021

Section 1: Identification

Product identifier

Product Name DESMODUR RFE

Other means of identification

Recommended use of the chemical and restrictions on use

Recommended use Contact adhesives

Uses advised against Consumer use

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
International +64 4 917 9888
Poison Centre : 0800 764 766

Section 2: Hazard identification

GHS Classification

Flammable liquids	Category 2 (HSNO - 3.1B)
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)
Specific target organ toxicity (single exposure)	Category 3 (HSNO - 6.9B)
Chronic aquatic toxicity	Category 4 (HSNO - 9.1D)

Label elements



Signal word
Danger

Hazard statements

H225 - Highly flammable liquid and vapor
H303 - May be harmful if swallowed

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H316 - Causes mild skin irritation
H319 - Causes serious eye irritation
H336 - May cause drowsiness or dizziness
H413 - May cause long lasting harmful effects to aquatic life

Precautionary Statements - Prevention

Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Avoid release to the environment
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Keep cool
Use explosion-proof electrical/ ventilating/ lighting/ equipment

Precautionary Statements - Response

Call a POISON CENTER or doctor/physician if you feel unwell

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 skin irritation occurs: Get medical advice/attention

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower

Inhalation

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

Fire

In case of fire: Use CO₂, dry chemical, or foam for extinction

Precautionary Statements - Storage

Store in a well-ventilated place. Keep container tightly closed

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Other hazards which do not result in classification

Contact with water (moisture) liberates carbon dioxide, which causes pressure increase in closed containers.

Section 3: Composition/information on ingredients

Chemical name	CAS No	Weight-%
Ethyl acetate	141-78-6	40 - <80
Phenol, 4-isocyanato-, phosphorothioate (3:1) (ester)	4151-51-3	20- <40
Chlorobenzene	108-90-7	1 - <3

Section 4: First-aid measures

Description of first aid measures

General advice

Show this safety data sheet to the doctor in attendance.

Inhalation

Remove to fresh air. IF exposed or concerned: Get medical advice/attention.

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. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and

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	persists.
Skin contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
Ingestion	Do NOT induce vomiting. Rinse mouth. Never give anything by mouth to an unconscious person. Call a physician.
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.

Most important symptoms and effects, both acute and delayed

Symptoms	May cause redness and tearing of the eyes. Burning sensation. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Prolonged contact may cause redness and irritation.
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Indication of any immediate medical attention and special treatment needed

Note to physicians	Treat symptomatically.
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Section 5: Fire-fighting measures

Hazchem code •3YE

Suitable Extinguishing Media

Suitable Extinguishing Media Dry chemical. Carbon dioxide (CO₂). Water spray. Alcohol resistant foam.

Large Fire CAUTION: Use of water spray when fighting fire may be inefficient.

Unsuitable extinguishing media Do not scatter spilled material with high pressure water streams.

Specific hazards arising from the chemical

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.

Hazardous combustion products Carbon oxides. Hydrogen chloride. Nitrogen oxides (NO_x). Hydrogen cyanide. Isocyanates.

Special protective actions for fire-fighters

Special protective equipment and precautions for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

Section 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.

Other information Ventilate the area. Refer to protective measures listed in Sections 7 and 8.

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For emergency responders Use personal protection recommended in Section 8.

Environmental precautions

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

Methods for containment Do NOT close container (evolution of carbon dioxide - CO₂). Keep wet and put outdoors in a secured place for a few days. Then dispose to of according to local / national regulations (see Section 13). 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. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up 2%, Liquid dishwashing soap, a mixture of 90% water and 8-10% sodium carbonate. Take precautionary measures against static discharges. Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Decontaminate floor with decontamination solution letting stand for at least 15 minutes.

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

Advice on 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.

General hygiene considerations 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.

Conditions for safe storage, including any incompatibilities

Storage Conditions 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. Protect from moisture.

Recommended storage temperature Keep at temperatures between 50 and 95 °F / 10 and 35 °C.

Incompatible materials None known based on information supplied.

Section 8: Exposure controls/personal protection

Control parameters

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Exposure Limits

Chemical name	New Zealand	ACGIH TLV	United Kingdom	Australia
Ethyl acetate 141-78-6	TWA: 200 ppm TWA: 720 mg/m ³	TWA: 400 ppm	TWA: 734 mg/m ³ TWA: 200 ppm STEL: 1468 mg/m ³ STEL: 400 ppm	TWA: 200 ppm TWA: 720 mg/m ³ STEL: 400 ppm STEL: 1440 mg/m ³
Phenol, 4-isocyanato-, phosphorothioate (3:1) (ester) 4151-51-3	TWA: 0.02 mg/m ³ STEL: 0.07 mg/m ³	-	TWA: 0.02 mg/m ³ STEL: 0.07 mg/m ³ Sen+	TWA: 0.02 mg/m ³ STEL: 0.07 mg/m ³
Chlorobenzene 108-90-7	TWA: 10 ppm TWA: 46 mg/m ³	TWA: 10 ppm	TWA: 1 ppm TWA: 4.7 mg/m ³ STEL: 3 ppm STEL: 14 mg/m ³ Sk*	TWA: 10 ppm TWA: 46 mg/m ³

Biological occupational exposure limits

Chemical name	New Zealand	ACGIH
Chlorobenzene 108-90-7	-	100 mg/g creatinine - urine (4-Chlorocatechol with hydrolysis) - end of shift at end of workweek 20 mg/g creatinine - urine (p-Chlorophenol with hydrolysis) - end of shift at end of workweek

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Tight sealing safety goggles.

Hand protection Wear suitable gloves. Impervious gloves.

Skin and body protection Wear suitable protective clothing. Long sleeved clothing. Chemical resistant apron.
Antistatic boots.

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 Liquid
Appearance Liquid
Color Light yellow or brown
Odor Ester.
Odor threshold No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	No data available	None known
Melting point / freezing point	No data available	None known
Initial boiling point and boiling range	77 °C	
Flash point	-4 °C	

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Evaporation rate	No data available	None known
Flammability	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	11.5	
Lower flammability or explosive limits	2.2	
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	3 Pa.s	
Explosive properties	No information available.	
Oxidizing properties	No information available.	
Other information		
Softening Point	No information available	
Molecular weight	No information available	
VOC Content (%)	72	
Density	1	
Bulk density	No information available	
Particle characteristics		

Section 10: Stability and reactivity

Reactivity

Reactivity No information available.

Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge Yes.

Possibility of hazardous reactions

Hazardous polymerization Hazardous polymerization may take place during a fire due to heat. Closed containers could violently rupture.

Possibility of hazardous reactions Contact with water (moisture) liberates carbon dioxide, which causes pressure increase in closed containers. Exothermic reaction with. Amines. Alcohols.

Conditions to avoid

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

Incompatible materials

Incompatible materials None known based on information supplied.

Hazardous decomposition products

Hazardous decomposition products None under normal use conditions.

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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. May cause drowsiness or dizziness.

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 Specific test data for the substance or mixture is not available. 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 May cause redness and tearing of the eyes. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting. Prolonged contact may cause redness and irritation.

Acute toxicity

Numerical measures of toxicity

No information available

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

ATEmix (oral) 2,385.50 mg/kg
ATEmix (inhalation-dust/mist) 150.00 mg/l

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Ethyl acetate	=5620 mg/kg (Rattus)	> 18000 mg/kg (Oryctolagus cuniculus) > 20 mL/kg (Oryctolagus cuniculus)	LC0 29.3 mg/l air
Phenol, 4-isocyanato-, phosphorothioate (3:1) (ester)	-	-	5721 mg/l , 4h (dust/mist)
Chlorobenzene	2000 - 4000 mg/kg (Rattus)	> 7940 mg/kg (Oryctolagus cuniculus)	=13.5 mg/L (Rattus) 7 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 Based on available data, the classification criteria are not met.

Ethyl acetate (141-78-6)

Method	Species	Exposure route	Results
OECD Test No. 406: Skin Sensitization	Guinea pig	Dermal	No sensitization responses were observed

Phenol, 4-isocyanato-, phosphorothioate (3:1) (ester) (4151-51-3)

Method	Species	Exposure route	Results
OECD Test No. 406: Skin	Guinea pig		No sensitization responses

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

Carcinogenicity No information available.

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

STOT - single exposure May cause drowsiness or dizziness. May cause respiratory irritation. Classification based on data available for ingredients.

Respiratory irritation No information available.

Narcotic effects Narcotic effects.

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.

Section 12: Ecological information

Ecotoxicity

Ecotoxicity May cause long lasting harmful effects to aquatic life.

Aquatic ecotoxicity

Chemical name	Algae/aquatic plants	Fish	Crustacea
Ethyl acetate	EC50: =3300mg/L (48h, <i>Desmodesmus subspicatus</i>)	LC50: =484mg/L (96h, <i>Oncorhynchus mykiss</i>) LC50: 352 - 500mg/L (96h, <i>Oncorhynchus mykiss</i>) LC50: 220 - 250mg/L (96h, <i>Pimephales promelas</i>)	EC50: =560mg/L (48h, <i>Daphnia magna</i>)
Phenol, 4-isocyanato-, phosphorothioate (3:1) (ester)	-	LC50 (96h) >100 mg/L (<i>Brachydanio rerio</i>) Static	EC50 (48h) >100 mg/L <i>Daphnia</i> (<i>Daphnia magna</i>) Static
Chlorobenzene	EC50: 2.55 - 420mg/L (96h, <i>Pseudokirchneriella subcapitata</i>) EC50: =12.5mg/L (96h, <i>Pseudokirchneriella subcapitata</i>)	LC50 96 h 4.1 - 4.9 mg/L (<i>Lepomis macrochirus</i> static) LC50 96 h = 4.5 mg/L (<i>Pimephales promelas</i> static) LC50 96 h 4.1 - 5.3 mg/L (<i>Oncorhynchus mykiss</i> flow-through)	EC50: =0.59mg/L (48h, <i>Daphnia magna</i>)

Terrestrial ecotoxicity

Chemical name	Earthworm	Avian	Honeybees
Chlorobenzene	Acute Toxicity: LC50 = 29 mg/cm ² (<i>Eisenia foetida</i> , 48 h filter paper)	-	-

Persistence and degradability No information available.

Bioaccumulative potential

Bioaccumulation There is no data for this product.

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Component Information

Chemical name	Partition coefficient
Ethyl acetate	0.73
Phenol, 4-isocyanato-, phosphorothioate (3:1) (ester)	8.26
Chlorobenzene	3.79

Mobility in soil

Other adverse effects

No information available.

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. Flammable substances - may not be disposed of into or onto a landfill or sewage facility.

They may only be burnt in certain situations.

Flammable gases, liquids and solids may only be discharged into the environment or landfill as waste if the substance will not at any time come into contact with any explosives, oxidising gases, liquids or solids or organic peroxides; and there will be no ignition source in the vicinity of the disposal site at any time and if the substance were to ignite, no person, or place where a person may legally be, would be exposed to an unsafe level of heat radiation. 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. Environmentally hazardous substances – if the substance, or if it contains a component that is hazardous to the aquatic environment or bioaccumulative and not rapidly degradable, then any component that is bioaccumulative and not rapidly degradable must be removed. The product may only be discharged into the environment if an environmental exposure limit has been set for the substance (or a component of the substance); and the discharge does not, after reasonable mixing, result in the concentration of the substance in an environmental medium exceeding the environmental exposure limit.

Contaminated packaging

For packages that have been in direct contact with hazardous substances, the person must ensure that the package is rendered incapable of containing any substance. It must be disposed of in a manner that is consistent with the requirements for disposal of the substance that it contained, taking into account the material the package is manufactured from. Packages may only be reused or recycled if:

- the substance has a physical hazard other than corrosive to metal, and has been treated to remove any residual contents of the hazardous substance;
- or for substances that have a health or environmental hazard, or corrosive to metal, the contents of the residue in the package are below the threshold for the substance to be classified as hazardous in the Hazardous Substances (Hazard Classification) Notice 2020.

Section 14: Transport information

Hazchem code •3YE
IATA
UN number or ID number UN1173

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UN proper shipping name Ethyl acetate
Transport hazard class(es) 3
Packing group II
Description UN1173, Ethyl acetate, 3, II

IMDG

UN number or ID number UN1173
UN proper shipping name Ethyl acetate
Transport hazard class(es) 3
Packing group II
EmS-No F-E, S-D
Marine pollutant NP
Description UN1173, Ethyl acetate, 3, II, (-4°C c.c.)

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

No information available

ADR

UN number or ID number UN1173
Proper Shipping Name Ethyl acetate
Transport hazard class(es) 3
Labels 3
Packing group II
Description UN1173, Ethyl acetate, 3, II, (D/E)
Limited quantity (LQ) 1 L
Classification code F1
Tunnel restriction code (D/E)

Section 15: Regulatory information

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

New Zealand

ERMA Group

HSR002662

Chemical name	New Zealand HSNO Chemical Classification
Ethyl acetate - 141-78-6	>82% in a non hazardous diluent - 3.1B,6.1E (All),6.1E (O),6.1E (I),6.4A,6.9B (All),6.9B (I) (HSR006414) - 3.1B,6.1E (All),6.1E (O),6.4A,6.9B (All),6.9B (I) (HSR001041) >10-82% in a non hazardous diluent - 3.1B,6.4A,6.9B (All),6.9B (I) (HSR006415)
Chlorobenzene - 108-90-7	- 3.1C,6.1D (All),6.1D (O),6.1D (I),6.3B,6.4A,6.9A (All),6.9A (I),6.9B (O),9.1A (All),9.1A (C),9.1B (A),9.1B (F),9.3C (HSR001108)

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 check the Health and Safety at Work Act 2015 for further information

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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

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Revision Note

***Indicates updated data since last publication.

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