

SAFETY DATA SHEET

1. Identification

Material name: Vulkem® 171 PRIMER
Material: 271171 817

Recommended use and restriction on use

Recommended use: Coatings
Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor Information

Tremco U.S Sealants
3735 Green Road
Beachwood OH 44122
US

Contact person: EH&S Department
Telephone: 216-292-5000
Emergency telephone number: 1-800-424-9300 (US); 1-613-996-6666 (Canada)

2. Hazard(s) identification

Hazard Classification

Physical Hazards

Flammable liquids Category 3

Health Hazards

Acute toxicity (Inhalation - vapor) Category 3
Acute toxicity (Inhalation - dust and mist) Category 2
Skin Corrosion/Irritation Category 2
Serious Eye Damage/Eye Irritation Category 2A
Respiratory sensitizer Category 1
Skin sensitizer Category 1
Carcinogenicity Category 1B
Toxic to reproduction Category 2
Specific Target Organ Toxicity - Single Exposure Category 3¹
Specific Target Organ Toxicity - Repeated Exposure Category 2²

Target Organs

1. Respiratory tract irritation.
2. hearing

Unknown toxicity - Health

Acute toxicity, oral 10.17 %
Acute toxicity, dermal 31.79 %
Acute toxicity, inhalation, vapor 64.51 %

Acute toxicity, inhalation, dust or mist 55.55 %

Environmental Hazards

Acute hazards to the aquatic environment Category 3

Chronic hazards to the aquatic environment Category 2

Unknown toxicity - Environment

Acute hazards to the aquatic environment 56.45 %

Chronic hazards to the aquatic environment 48.66 %

Label Elements

Hazard Symbol:



Signal Word: Danger

Hazard Statement: Flammable liquid and vapor.
Toxic if inhaled.
Causes skin irritation.
Causes serious eye irritation.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.
May cause cancer.
Suspected of damaging fertility or the unborn child.
May cause respiratory irritation.
May cause damage to organs through prolonged or repeated exposure.
Harmful to aquatic life.
Toxic to aquatic life with long lasting effects.

Precautionary Statements

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof electrical, ventilating and lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Do not breathe dust/fume/gas/mist/vapors/spray. Wash face, hands and any exposed skin thoroughly after handling. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wear protective

gloves/protective clothing/eye protection/face protection. Use personal protective equipment as required. [In case of inadequate ventilation] wear respiratory protection.

Response: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. Wash contaminated clothing before reuse. If skin irritation or rash occurs: Get medical advice/attention. Specific treatment (see supplemental first aid instructions on this label). IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. If experiencing respiratory symptoms: 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. IF exposed or concerned: Get medical advice/attention. In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction. Collect spillage.

Storage: Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal: Dispose of contents/ container to an approved facility in accordance with local, regional, national and international regulations.

Hazard(s) not otherwise classified (HNOC): Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment.

3. Composition/information on ingredients

Mixtures

Chemical Identity	CAS number	Content in percent (%)*
Trimethyl benzene (mixed isomers)	25551-13-7	10 - <20%
1,2,4-Trimethylbenzene	95-63-6	10 - <20%
Xylene	1330-20-7	10 - <20%
2,4-Toluene diisocyanate	584-84-9	5 - <10%
Aromatic petroleum distillates	64742-95-6	5 - <10%
4,4'-Methylene bis(phenylisocyanate)	101-68-8	5 - <10%
1,3,5-Trimethylbenzene	108-67-8	5 - <10%
Toluene-2,6-Diisocyanate	91-08-7	1 - <5%
Ethylbenzene	100-41-4	1 - <2.5%
1,2,3-Trimethylbenzene	526-73-8	1 - <5%
Cumene	98-82-8	0.1 - <1%
Toluene	108-88-3	0.1 - <1%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Description of necessary first-aid measures

Inhalation: Call a physician or poison control center immediately. If breathing stops, provide artificial respiration. Move to fresh air. If breathing is difficult, give oxygen.

Skin Contact:	Take off immediately all contaminated clothing. Get medical attention. Destroy or thoroughly clean contaminated shoes. Immediately remove contaminated clothing and shoes and wash skin with soap and plenty of water. If skin irritation or an allergic skin reaction develops, get medical attention.
Eye contact:	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Get medical attention.
Ingestion:	Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
Personal Protection for First-aid Responders:	Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

Most important symptoms/effects, acute and delayed

Symptoms:	Respiratory tract irritation. Prolonged or repeated contact with skin may cause redness, itching, irritation and eczema/chapping.
Hazards:	No data available.

Indication of immediate medical attention and special treatment needed

Treatment:	Symptoms may be delayed.
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5. Fire-fighting measures

General Fire Hazards:	Use water spray to keep fire-exposed containers cool. Water may be ineffective in fighting the fire. Fight fire from a protected location. Move containers from fire area if you can do so without risk.
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Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media: Avoid water in straight hose stream; will scatter and spread fire.

Specific hazards arising from the chemical:	Vapors may travel considerable distance to a source of ignition and flash back. Vapors may cause a flash fire or ignite explosively. Prevent buildup of vapors or gases to explosive concentrations.
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Special protective equipment and precautions for fire-fighters

Special fire-fighting procedures: No data available.

Special protective equipment for fire-fighters: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:	Ventilate closed spaces before entering them. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep upwind. Evacuate area. See Section 8 of the SDS for Personal Protective Equipment. Keep unauthorized personnel away. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
Accidental release measures:	In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.
Methods and material for containment and cleaning up:	Dam and absorb spillages with sand, earth or other non-combustible material. Collect spillage in containers, seal securely and deliver for disposal according to local regulations.
Environmental Precautions:	Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so. Avoid release to the environment.

7. Handling and storage

Handling

Technical measures (e.g. Local and general ventilation):	Observe good industrial hygiene practices. Observe occupational exposure limits and minimize the risk of inhalation of vapors and mist. Mechanical ventilation or local exhaust ventilation may be required.
Safe handling advice:	Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Use personal protective equipment as required. Avoid contact with eyes. Wash hands thoroughly after handling. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground and bond container and receiving equipment. Take precautionary measures against static discharges. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin. Avoid contact with eyes, skin, and clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Contact avoidance measures:	No data available.
Hygiene measures:	Observe good industrial hygiene practices. Wash hands before breaks and immediately after handling the product. Avoid contact with eyes. When using do not smoke. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Wash contaminated clothing before reuse. Avoid contact with skin. Contaminated work clothing should not be allowed out of the workplace.

Storage

Safe storage conditions:	Store locked up. Store in a well-ventilated place. Store in a cool place.
Safe packaging materials:	No data available.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	Type	Exposure Limit Values	Source
Trimethyl benzene (mixed isomers)	TWA	25 ppm	US. ACGIH Threshold Limit Values, as amended (2011)
1,2,4-Trimethylbenzene	REL	25 ppm 125 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards, as amended (2010)
	TWA	25 ppm 125 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000), as amended (1989)
	TWA	25 ppm	US. ACGIH Threshold Limit Values, as amended (2008)
Xylene	PEL	100 ppm 435 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended (02 2006)
	STEL	150 ppm	US. ACGIH Threshold Limit Values, as amended (2008)
	TWA	100 ppm	US. ACGIH Threshold Limit Values, as amended (2008)
2,4-Toluene diisocyanate	Ceiling	0.02 ppm 0.14 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended (02 2006)
2,4-Toluene diisocyanate - Inhalable fraction and vapor.	STEL	0.005 ppm	US. ACGIH Threshold Limit Values, as amended (03 2016)
	TWA	0.001 ppm	US. ACGIH Threshold Limit Values, as amended (03 2016)
4,4'-Methylene bis(phenylisocyanate)	TWA	0.005 ppm	US. ACGIH Threshold Limit Values, as amended (2011)
	Ceiling	0.02 ppm 0.2 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended (02 2006)
1,3,5-Trimethylbenzene	TWA	25 ppm	US. ACGIH Threshold Limit Values, as amended (2008)
Toluene-2,6-Diisocyanate - Inhalable fraction and vapor.	STEL	0.005 ppm	US. ACGIH Threshold Limit Values, as amended (03 2016)
	TWA	0.001 ppm	US. ACGIH Threshold Limit Values, as amended (03 2016)
Ethylbenzene	TWA	20 ppm	US. ACGIH Threshold Limit Values, as amended (2011)
	PEL	100 ppm 435 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended (02 2006)
1,2,3-Trimethylbenzene	TWA	25 ppm	US. ACGIH Threshold Limit Values, as amended (2011)
Cumene	PEL	50 ppm 245 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000), as amended (02 2006)
	TWA	5 ppm	US. ACGIH Threshold Limit Values, as amended (01 2021)
Toluene	TWA	20 ppm	US. ACGIH Threshold Limit Values, as amended (2008)
	TWA	200 ppm	US. OSHA Table Z-2 (29 CFR 1910.1000), as amended (02 2006)
	MAX. CONC	500 ppm	US. OSHA Table Z-2 (29 CFR 1910.1000), as amended (02 2006)
	Ceiling	300 ppm	US. OSHA Table Z-2 (29 CFR 1910.1000), as amended (02 2006)

Chemical name	Type	Exposure Limit Values	Source
1,2,4-Trimethylbenzene	TWA	25 ppm 123 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2), as amended (07 2009)
1,2,4-Trimethylbenzene	TWA	25 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
1,2,4-Trimethylbenzene	TWA	25 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
1,2,4-Trimethylbenzene	TWA	25 ppm	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (03 2020)
Xylene	STEL	150 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	100 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Xylene	STEL	150 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
	TWA	100 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
Xylene	TWA	100 ppm 434 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
	STEL	150 ppm 651 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
1,3,5-Trimethylbenzene	TWA	25 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
1,3,5-Trimethylbenzene	TWA	25 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
1,3,5-Trimethylbenzene	TWA	25 ppm	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (03 2020)
Ethylbenzene	TWA	20 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (09 2011)
Ethylbenzene	TWA	20 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (06 2015)
Ethylbenzene	TWA	20 ppm	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (03 2020)
Cumene	STEL	75 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	25 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)

Cumene	TWA	50 ppm		Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
Cumene	TWA	50 ppm	246 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
2,4-Toluene diisocyanate	CEILING	0.01 ppm		Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	0.005 ppm		Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
2,4-Toluene diisocyanate	TWA	0.005 ppm		Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (06 2015)
	CEV	0.02 ppm		Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (06 2015)
2,4-Toluene diisocyanate	TWA	0.005 ppm	0.036 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
	STEL	0.02 ppm	0.14 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
Toluene	TWA	20 ppm		Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
Toluene	TWA	20 ppm		Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Toluene	TWA	50 ppm	188 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
4,4'-Methylene bis(phenylisocyanate)	CEILING	0.01 ppm		Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	0.005 ppm		Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
4,4'-Methylene bis(phenylisocyanate)	TWA	0.005 ppm		Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (06 2015)
	CEV	0.02 ppm		Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (06 2015)
4,4'-Methylene bis(phenylisocyanate)	TWA	0.005 ppm	0.051 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
Polymethylene polyphenyl isocyanate	TWA	0.005 ppm		Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	CEILING	0.01 ppm		Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)

Chemical name	Type	Exposure Limit Values	Source
Trimethyl benzene (mixed isomers)	TWA	25 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Trimethyl benzene (mixed isomers)	TWA	25 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
Trimethyl benzene (mixed isomers)	TWA	25 ppm	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (03 2020)
1,2,4-Trimethylbenzene	TWA	25 ppm 123 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2), as amended (07 2009)
1,2,4-Trimethylbenzene	TWA	25 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
1,2,4-Trimethylbenzene	TWA	25 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
1,2,4-Trimethylbenzene	TWA	25 ppm	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (03 2020)
Xylene	STEL	150 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	100 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Xylene	STEL	150 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
	TWA	100 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
Xylene	TWA	100 ppm 434 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
	STEL	150 ppm 651 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
2,4-Toluene diisocyanate	CEILING	0.01 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	0.005 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
2,4-Toluene diisocyanate	TWA	0.005 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (06 2015)
	CEV	0.02 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (06 2015)
2,4-Toluene diisocyanate	TWA	0.005 ppm 0.036 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
	STEL	0.02 ppm 0.14 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)

4,4'-Methylene bis(phenylisocyanate)	CEILING	0.01 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	0.005 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
4,4'-Methylene bis(phenylisocyanate)	TWA	0.005 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (06 2015)
	CEV	0.02 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (06 2015)
4,4'-Methylene bis(phenylisocyanate)	TWA	0.005 ppm 0.051 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
Polymethylene polyphenyl isocyanate	TWA	0.005 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	CEILING	0.01 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
1,3,5-Trimethylbenzene	TWA	25 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
1,3,5-Trimethylbenzene	TWA	25 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
1,3,5-Trimethylbenzene	TWA	25 ppm	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (03 2020)
Toluene-2,6-Diisocyanate	CEILING	0.01 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	0.005 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Toluene-2,6-Diisocyanate	TWA	0.005 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (06 2015)
	CEV	0.02 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (06 2015)
Toluene-2,6-Diisocyanate	TWA	0.005 ppm 0.036 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
	STEL	0.02 ppm 0.14 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)

Ethylbenzene	TWA	20 ppm		Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (09 2011)
Ethylbenzene	TWA	20 ppm		Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (06 2015)
Ethylbenzene	TWA	20 ppm		Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (03 2020)
1,2,3-Trimethylbenzene	TWA	25 ppm		Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
1,2,3-Trimethylbenzene	TWA	25 ppm		Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
1,2,3-Trimethylbenzene	TWA	25 ppm		Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (03 2020)
Cumene	STEL	75 ppm		Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	25 ppm		Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Cumene	TWA	50 ppm		Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
Cumene	TWA	50 ppm	246 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
Cymene	TWA	50 ppm	274 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
Toluene	TWA	20 ppm		Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
Toluene	TWA	20 ppm		Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Toluene	TWA	50 ppm	188 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
Phosphoric acid	TWA		1 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	STEL		3 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Phosphoric acid	TWA		1 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
	STEL		3 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (11 2010)
Phosphoric acid	STEL		3 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
	TWA		1 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)

Benzene	STEL	2.5 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	0.5 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Biological Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Benzene	TWA	0.5 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (06 2015)
	STEL	2.5 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents), as amended (06 2015)
Benzene	TWA	1 ppm 3 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)
	STEL	5 ppm 15.5 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety), as amended (09 2017)

Biological Limit Values

Chemical Identity	Exposure Limit Values	Source
Xylene (Methylhippuric acids: Sampling time: End of shift.)	1.5 g/g (Creatinine in urine)	ACGIH BEI (03 2013)
2,4-Toluene diisocyanate (Toluene diamine (sum of 2,4- and 2,6-isomers), with hydrolysis: Sampling time: End of shift.)	5 µg/g (Creatinine in urine)	ACGIH BEI (03 2018)
Toluene-2,6-Diisocyanate (Toluene diamine (sum of 2,4- and 2,6-isomers), with hydrolysis: Sampling time: End of shift.)	5 µg/g (Creatinine in urine)	ACGIH BEI (03 2018)
Ethylbenzene (Sum of mandelic acid and phenylglyoxylic acid: Sampling time: End of shift.)	0.15 g/g (Creatinine in urine)	ACGIH BEI (02 2014)
Toluene (o-Cresol, with hydrolysis: Sampling time: End of shift.)	0.3 mg/g (Creatinine in urine)	ACGIH BEI (03 2013)
Toluene (toluene: Sampling time: Prior to last shift of work week.)	0.02 mg/l (Blood)	ACGIH BEI (03 2013)
Toluene (toluene: Sampling time: End of shift.)	0.03 mg/l (Urine)	ACGIH BEI (03 2013)

Appropriate Engineering Controls

Observe good industrial hygiene practices. Observe occupational exposure limits and minimize the risk of inhalation of vapors and mist. Mechanical ventilation or local exhaust ventilation may be required.

Individual protection measures, such as personal protective equipment

Eye/face protection:

Wear safety glasses with side shields (or goggles).

Skin Protection

Hand Protection:

Additional Information: Use suitable protective gloves if risk of skin contact.

Skin and Body Protection:	Wear suitable protective clothing. Wear chemical-resistant gloves, footwear, and protective clothing appropriate for the risk of exposure. Contact health and safety professional or manufacturer for specific information.
Respiratory Protection:	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister. Contact health and safety professional or manufacturer for specific information.
Hygiene measures:	Observe good industrial hygiene practices. Wash hands before breaks and immediately after handling the product. Avoid contact with eyes. When using do not smoke. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Wash contaminated clothing before reuse. Avoid contact with skin. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance

Physical state:	liquid
Form:	liquid
Color:	Colorless
Odor:	Mild petroleum/solvent
Odor threshold:	No data available.
pH:	No data available.
Melting point/freezing point:	No data available.
Initial boiling point and boiling range:	> 121 °C > 250 °F
Flash Point:	34 °C 94 °F (Setaflash Closed Cup)
Evaporation rate:	Slower than Ether
Flammability (solid, gas):	No
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper:	No data available.
Explosive limit - lower:	No data available.
Vapor pressure:	No data available.
Vapor density:	Vapors are heavier than air and may travel along the floor and in the bottom of containers.
Relative density:	0.96
Solubility(ies)	
Solubility in water:	Practically Insoluble
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.

Auto-ignition temperature: No data available.
Decomposition temperature: No data available.
Viscosity: No data available.

10. Stability and reactivity

Reactivity: No data available.

Chemical Stability: Material is stable under normal conditions.

Possibility of hazardous reactions: No data available.

Conditions to avoid: Heat, sparks, flames.

Incompatible Materials: Alcohols. Amines. Strong acids. Strong bases. Water, moisture.

Hazardous Decomposition Products: Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

11. Toxicological information

Information on likely routes of exposure

Inhalation: In high concentrations, vapors, fumes or mists may irritate nose, throat and mucus membranes.

Skin Contact: May be harmful in contact with skin. Causes skin irritation. May cause an allergic skin reaction.

Eye contact: Causes serious eye irritation.

Ingestion: May be ingested by accident. Ingestion may cause irritation and malaise.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation: No data available.

Skin Contact: No data available.

Eye contact: No data available.

Ingestion: No data available.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral Product: ATEmix: 5,316.8 mg/kg

Dermal Product: ATEmix: 2,623.3 mg/kg

Inhalation

Product: ATEmix: 4.76 mg/l
ATEmix : 0.18 mg/l

Repeated dose toxicity

Product: No data available.

Skin Corrosion/Irritation

Product: No data available.

Specified substance(s):

1,2,4-Trimethylbenzene	in vivo (Rabbit): Irritating , 24 - 72 h
Xylene	in vivo (Rat): Slightly irritating , 24 h
2,4-Toluene diisocyanate	(Rabbit): Moderately irritating , 4 - 72 h
Aromatic petroleum distillates	in vivo (Rabbit): Irritating , 7 d
4,4'-Methylene bis(phenylisocyanate)	in vivo (Rabbit): Irritating , 24 - 72 h
1,3,5-Trimethylbenzene	in vivo (Rabbit): Irritating
Cumene	in vivo (Rabbit): Not irritant , 24 h
Toluene	in vivo (Rabbit): Irritating , 24 - 72 h

Serious Eye Damage/Eye Irritation

Product: No data available.

Specified substance(s):

1,2,4-Trimethylbenzene	Rabbit, 30 min: Not irritant
Xylene	Rabbit, 24 hrs: Moderately irritating Rabbit, 1 hrs: Not irritant
Aromatic petroleum distillates	Rabbit, 24 - 72 hrs: Minimal irritant
1,3,5-Trimethylbenzene	Rabbit, 30 min: Not irritant
Cumene	Rabbit, 24 - 72 hrs: Not irritant
Toluene	Rabbit, 24 - 72 hrs: Not irritant

Respiratory or Skin Sensitization

Product: May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause sensitization by inhalation.

Carcinogenicity

Product: May cause cancer. Suspected of causing cancer.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

2,4-Toluene diisocyanate	Overall evaluation: Possibly carcinogenic to humans.
Toluene-2,6-Diisocyanate	Overall evaluation: Possibly carcinogenic to humans.
Ethylbenzene	Overall evaluation: Possibly carcinogenic to humans.
Cumene	Overall evaluation: Possibly carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens:

2,4-Toluene diisocyanate	Reasonably Anticipated to be a Human Carcinogen.
Toluene-2,6-Diisocyanate	Reasonably Anticipated to be a Human Carcinogen.
Cumene	Reasonably Anticipated to be a Human Carcinogen.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended:

No carcinogenic components identified

Germ Cell Mutagenicity

In vitro
Product: No data available.

In vivo
Product: No data available.

Reproductive toxicity

Product: Suspected of damaging fertility or the unborn child.

Specific Target Organ Toxicity - Single Exposure

Product: No data available.

Specified substance(s):
Cumene Inhalation - vapor: Category 3 with respiratory tract irritation.

Specific Target Organ Toxicity - Repeated Exposure

Product: No data available.

Target Organs

Specific Target Organ Toxicity - Single Exposure: Respiratory tract irritation.

Specific Target Organ Toxicity - Repeated Exposure: hearing

Aspiration Hazard

Product: No data available.

Other effects: No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: No data available.

Specified substance(s):

1,2,4-Trimethylbenzene	LC 50 (Pimephales promelas, 96 h): 7.72 mg/l Experimental result, Key study
Xylene	LC 50 (Fathead minnow (Pimephales promelas), 96 h): 13.41 mg/l Mortality
2,4-Toluene diisocyanate	LC 50 (Oncorhynchus mykiss, 96 h): 133 mg/l Read-across from supporting substance (structural analogue or surrogate), Key study
4,4'-Methylene bis(phenylisocyanate)	LC 0 (Oryzias latipes, 96 h): > 3,000 mg/l Experimental result, Key study
Ethylbenzene	LC 50 (Oncorhynchus mykiss, 96 h): 4.2 mg/l Experimental result, Key study
Cumene	LC 50 (Cyprinodon variegatus, 96 h): 4.7 mg/l Experimental result, Key study
Toluene	LC 50 (Pimephales promelas, 96 h): 26 mg/l Not specified, Not specified

Aquatic Invertebrates

Product: No data available.

Specified substance(s):

1,2,4-Trimethylbenzene	LC 50 (Daphnia magna, 48 h): 3.6 mg/l experimental result Experimental result, Key study
2,4-Toluene diisocyanate	EC 50 (Daphnia magna, 48 h): 12.5 mg/l read-across from supporting substance (structural analogue or surrogate) Read-across from supporting substance (structural analogue or surrogate), Key study
Aromatic petroleum distillates	EC 50 (Daphnia magna, 48 h): 4.5 mg/l experimental result Experimental result, Key study
1,3,5-Trimethylbenzene	LC 50 (Daphnia magna, 48 h): 6 mg/l experimental result Experimental result, Key study
Ethylbenzene	EC 50 (Daphnia magna, 48 h): 1.8 - 2.4 mg/l experimental result

	Experimental result, Key study
Cumene	EC 50 (Daphnia magna, 48 h): 2.14 mg/l experimental result Experimental result, Key study
Toluene	LC 50 (Ceriodaphnia dubia, 2 d): 3.78 mg/l experimental result Experimental result, Key study

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Specified substance(s):

Toluene NOAEL (Pimephales promelas): 4 mg/l experimental result Experimental result, Supporting study

Aquatic Invertebrates

Product: No data available.

Specified substance(s):

2,4-Toluene diisocyanate NOAEL (Daphnia magna): 0.5 mg/l read-across from supporting substance (structural analogue or surrogate) Read-across from supporting substance (structural analogue or surrogate), Key study

Aromatic petroleum distillates EC 50 (Daphnia magna): 10 mg/l experimental result Experimental result, Key study

4,4'-Methylene bis(phenylisocyanate) NOAEL (Daphnia magna): >= 10 mg/l read-across based on grouping of substances (category approach) Read-across based on grouping of substances (category approach), Key study

1,3,5-Trimethylbenzene NOAEL (Daphnia magna): 0.4 mg/l experimental result Experimental result, Key study

Ethylbenzene NOAEL (Ceriodaphnia dubia): 1 mg/l secondary data Other, Key study

Cumene NOAEL (Daphnia magna): 0.35 mg/l experimental result Experimental result, Key study

Toluene NOAEL (Ceriodaphnia dubia): 0.74 mg/l experimental result Experimental result, Key study

Toxicity to Aquatic Plants

Product: No data available.

Persistence and Degradability

Biodegradation

Product: No data available.

Specified substance(s):

1,3,5-Trimethylbenzene 50 % (4.4 d) Detected in water. QSAR, Key study

Ethylbenzene 70 - 80 % (28 d) Detected in water. Experimental result, Key study

Cumene 70 % (20 d) Detected in water. Experimental result, Key study

BOD/COD Ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product: No data available.

Specified substance(s):

1,2,4-Trimethylbenzene Pimephales promelas, Bioconcentration Factor (BCF): 243 Aquatic sediment QSAR, Key study

Xylene Oncorhynchus mykiss, Bioconcentration Factor (BCF): > 8.1 - < 25.9 Aquatic sediment Experimental result, Key study

Aromatic petroleum distillates Bioconcentration Factor (BCF): 10 - 2,500 Aquatic sediment Estimated by calculation, Key study

4,4'-Methylene bis(phenylisocyanate) Cyprinus carpio, Bioconcentration Factor (BCF): 200 Aquatic sediment Experimental result, Key study

1,3,5-Trimethylbenzene Pimephales promelas, Bioconcentration Factor (BCF): 161 Aquatic sediment QSAR, Key study

Ethylbenzene Oncorhynchus kisutch, Bioconcentration Factor (BCF): 1 Aquatic sediment Other, Key study

Cumene Bioconcentration Factor (BCF): 94.69 Aquatic sediment Estimated by calculation, Key study

Toluene Leuciscus idus, Bioconcentration Factor (BCF): 90 Aquatic sediment Experimental result, Key study

Partition Coefficient n-octanol / water (log Kow)

Product: No data available.

Specified substance(s):

1,2,4-Trimethylbenzene Log Kow: 3.78

Xylene Log Kow: 2.77 - 3.15 No Not specified, Not specified

2,4-Toluene diisocyanate Log Kow: 3.74

4,4'-Methylene bis(phenylisocyanate) Log Kow: 5.22

1,3,5-Trimethylbenzene Log Kow: 3.42

Toluene-2,6-Diisocyanate Log Kow: 3.74

Ethylbenzene	Log Kow: 3.15 Log Kow: 3.13 - 3.14 No Other, Supporting study
Cumene	Log Kow: 3.66
Toluene	Log Kow: 2.73

Mobility in soil: No data available.

Other adverse effects: Toxic to aquatic life with long lasting effects. Harmful to aquatic life with long lasting effects.

13. Disposal considerations

Disposal methods: Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Contaminated Packaging: No data available.

14. Transport information

TDG:

UN1133, ADHESIVES, 3, PG III

CFR / DOT:

UN1133, Adhesives, 3, PG III

IMDG:

UN1133, ADHESIVES, 3, PG III

Further Information:

The above shipping description may not be accurate for all container sizes and all modes of transportation. Please refer to Bill of Lading.

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Chemical Identity

2,4-Toluene diisocyanate

Reportable quantity

De minimis concentration: TSCA 5(a)(2)% One-Time Export Notification only.

Toluene-2,6-Diisocyanate

De minimis concentration: TSCA 5(a)(2)% One-Time Export Notification only.

US. Toxic Substances Control Act (TSCA) Section 5(a)(2) Final Significant New Use Rules (SNURs) (40 CFR 721, Subpt E)

None present or none present in regulated quantities.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050), as amended

<u>Chemical Identity</u>	<u>OSHA hazard(s)</u>
Benzene	Blood respiratory tract irritation Central nervous system Flammability Cancer Skin Aspiration Eye

CERCLA Hazardous Substance List (40 CFR 302.4):

<u>Chemical Identity</u>	<u>Reportable quantity</u>
Xylene	100 lbs.
2,4-Toluene diisocyanate	100 lbs.
4,4'-Methylene bis(phenylisocyanate)	5000 lbs.
Toluene-2,6-Diisocyanate	100 lbs.
Ethylbenzene	1000 lbs.
Cumene	5000 lbs.
Toluene	1000 lbs.
Phosphoric acid	5000 lbs.
Benzene	10 lbs.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

- Fire Hazard
- Immediate (Acute) Health Hazards
- Delayed (Chronic) Health Hazard
- Flammable (gases, aerosols, liquids, or solids)
- Acute toxicity (any route or exposure)
- Skin Corrosion or Irritation
- Serious eye damage or eye irritation
- Respiratory or Skin Sensitization
- Carcinogenicity
- Reproductive toxicity
- Specific target organ toxicity (single or repeated exposure)
- Hazards Not Otherwise Classified (HNOC)

US. EPCRA (SARA Title III) Section 304 Extremely Hazardous Substances Reporting Quantities and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Hazardous Substances

Not regulated.

US. EPCRA (SARA Title III Section 313 Toxic Chemical Release Inventory (TRI) Reporting

<u>Chemical Identity</u>	<u>% by weight</u>
1,2,4-Trimethylbenzene	1.0%
Xylene	1.0%
2,4-Toluene diisocyanate	0.1%
4,4'-Methylene bis(phenylisocyanate)	1.0%
Polymethylene polyphenyl isocyanate	1.0%
Toluene-2,6-Diisocyanate	0.1%
Ethylbenzene	0.1%
Cumene	0.1%

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

<u>Chemical Identity</u>	<u>Reportable quantity</u>
2,4-Toluene diisocyanate	lbs
Toluene-2,6-Diisocyanate	lbs

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

<u>Chemical Identity</u>	<u>Reportable quantity</u>
Xylene	Reportable quantity: 100 lbs.

US State Regulations

US. California Proposition 65



WARNING

Cancer and Reproductive Harm - www.P65Warnings.ca.gov

International regulations

Montreal protocol

Not applicable

Stockholm convention

Not applicable

Rotterdam convention

Not applicable

Kyoto protocol

Not applicable

VOC:

Regulatory VOC (less water and exempt solvent) : 552 g/l

VOC Method 310 : 57.48 %

Inventory Status:

Australia AICS:	One or more components in this product are not listed on or exempt from the Inventory.
EINECS, ELINCS or NLP:	One or more components in this product are not listed on or exempt from the Inventory.
Japan (ENCS) List:	One or more components in this product are not listed on or exempt from the Inventory.
China Inv. Existing Chemical Substances:	One or more components in this product are not listed on or exempt from the Inventory.
Korea Existing Chemicals Inv. (KECI):	One or more components in this product are not listed on or exempt from the Inventory.
Canada NDSL Inventory:	One or more components in this product are not listed on or exempt from the Inventory.
Philippines PICCS:	One or more components in this product are not listed on or exempt from the Inventory.
US TSCA Inventory:	All components in this product are listed on or exempt from the Inventory.
New Zealand Inventory of Chemicals:	One or more components in this product are not listed on or exempt from the Inventory.
Japan ISHL Listing:	One or more components in this product are not listed on or exempt from the Inventory.
Japan Pharmacopoeia Listing:	One or more components in this product are not listed on or exempt from the Inventory.
Canada DSL Inventory List:	All components in this product are listed on or exempt from the Inventory.
Ontario Inventory:	One or more components in this

product are not listed on or exempt from the Inventory.

Mexico INSQ: One or more components in this product are not listed on or exempt from the Inventory.

Taiwan Chemical Substance Inventory: One or more components in this product are not listed on or exempt from the Inventory.

16. Other information, including date of preparation or last revision

Revision Date: 07/26/2022

Version #: 1.2

Further Information: No data available.

Disclaimer: For Industrial Use Only. Keep out of Reach of Children. The hazard information herein is offered solely for the consideration of the user, subject to their own investigation of compliance with applicable regulations, including the safe use of the product under every foreseeable condition.