

# SAFETY DATA SHEET

## 1. Identification

**Material name:** VULKEM 640 ALUMINUM

**Material:** 640720 805

**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 - dust and mist) Category 4

Respiratory sensitizer Category 1

Skin sensitizer Category 1

Germ Cell Mutagenicity Category 1B

Carcinogenicity Category 1A

#### Unknown toxicity - Health

Acute toxicity, oral 11.6 %

Acute toxicity, dermal 18.99 %

Acute toxicity, inhalation, vapor 99.94 %

Acute toxicity, inhalation, dust or mist 97.24 %

#### Environmental Hazards

Acute hazards to the aquatic environment Category 2

#### Unknown toxicity - Environment

Acute hazards to the aquatic environment	81.89 %
Chronic hazards to the aquatic environment	100 %

## Label Elements

### Hazard Symbol:



**Signal Word:** Danger

**Hazard Statement:** Flammable liquid and vapor.  
Harmful if inhaled.  
May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
May cause an allergic skin reaction.  
May cause genetic defects.  
May cause cancer.  
Toxic to aquatic life.

### Precautionary Statements

**Prevention:** 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/lighting/...] equipment. Use non-sparking tools. Take action to prevent static discharges. 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. [In case of inadequate ventilation] wear respiratory protection. Contaminated work clothing should not be allowed out of the workplace. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required.

**Response:** IF INHALED: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER/doctor. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. If skin irritation or rash occurs: Get medical advice/attention. Call a POISON CENTER/doctor if you feel unwell. Specific treatment (see on this label). Wash contaminated clothing before reuse. In case of fire: Use... to extinguish.

**Storage:** Store in a well-ventilated place. Keep cool. Store locked up.

**Disposal:** Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

**Hazard(s) not otherwise classified (HNOC):**

Static accumulating flammable liquid can become electrostatically charged even in bonded and grounded equipment. Sparks may ignite liquid and vapor. May cause flash fire or explosion.

**3. Composition/information on ingredients**

**Mixtures**

Chemical Identity	CAS number	Content in percent (%)*
Calcium Carbonate (Limestone)	1317-65-3	10 - 30%
Aromatic petroleum distillates	64742-95-6	7 - 13%
1,2,4-Trimethylbenzene	95-63-6	5 - 10%
Xylene	1330-20-7	3 - 7%
Titanium dioxide	13463-67-7	3 - 7%
Aluminum	7429-90-5	1 - 5%
Hydrotreated heavy naphtha	64742-48-9	1 - 5%
Ethylbenzene	100-41-4	1 - 5%
1,3,5-Trimethylbenzene	108-67-8	1 - 5%
4,4'-Methylene bis(phenylisocyanate)	101-68-8	0.1 - 1%
Trimethyl benzene (mixed isomers)	25551-13-7	0.1 - 1%
Cumene	98-82-8	0.1 - 1%
Aluminum oxide	1344-28-1	0.1 - 1%
Polymethylene polyphenyl isocyanate	9016-87-9	0.1 - 1%
Crystalline Silica (Quartz)/ Silica Sand	14808-60-7	0.1 - 1%
2,4-Toluene diisocyanate	584-84-9	0.1 - 1%
Dibutyl tin dilaurate	77-58-7	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**

- Ingestion:** Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
- 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. If skin irritation occurs: Get medical advice/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:** Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses. If eye irritation persists: Get medical advice/attention.

**Most important symptoms/effects, acute and delayed**

**Symptoms:** Respiratory tract irritation.

**Indication of immediate medical attention and special treatment needed**

**Treatment:** Symptoms may be delayed.

**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.

**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.

**Special protective equipment and precautions for firefighters**

**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.

**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.

**Notification Procedures:** In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

**Environmental Precautions:** Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water sources or sewer.

## 7. Handling and storage

**Precautions for safe handling:** Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Use personal protective equipment as required. 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 eyes, skin, and clothing. Wash hands thoroughly after handling.

**Conditions for safe storage, including any incompatibilities:** Store locked up. Store in a well-ventilated place. Store in a cool place.

## 8. Exposure controls/personal protection

### Control Parameters

#### Occupational Exposure Limits

Chemical Identity	Type	Exposure Limit Values	Source
Calcium Carbonate (Limestone) - Total dust.	PEL	15 mg/m <sup>3</sup>	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Calcium Carbonate (Limestone) - Respirable fraction.	PEL	5 mg/m <sup>3</sup>	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
1,2,4-Trimethylbenzene	REL	25 ppm 125 mg/m <sup>3</sup>	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	TWA	25 ppm 125 mg/m <sup>3</sup>	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	25 ppm 125 mg/m <sup>3</sup>	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	AN ESL	25 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (07 2011)
	ST ESL	140 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	ST ESL	700 µg/m <sup>3</sup>	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	AN ESL	125 µg/m <sup>3</sup>	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (07 2011)
	TWA PEL	25 ppm 125 mg/m <sup>3</sup>	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010)
	TWA	25 ppm	US. ACGIH Threshold Limit Values (2011)
Xylene	STEL	150 ppm 655 mg/m <sup>3</sup>	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	REL	100 ppm 435 mg/m <sup>3</sup>	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	STEL	150 ppm 655 mg/m <sup>3</sup>	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	REL	100 ppm 435 mg/m <sup>3</sup>	US. NIOSH: Pocket Guide to Chemical Hazards (2010)

	STEL	150 ppm	655 mg/m <sup>3</sup>	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	REL	100 ppm	435 mg/m <sup>3</sup>	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	STEL	150 ppm	655 mg/m <sup>3</sup>	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	100 ppm	435 mg/m <sup>3</sup>	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	100 ppm	435 mg/m <sup>3</sup>	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	STEL	150 ppm	655 mg/m <sup>3</sup>	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	ST ESL		350 µg/m <sup>3</sup>	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (07 2011)
	ST ESL		80 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (07 2011)
	AN ESL		42 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (07 2011)
	AN ESL		180 µg/m <sup>3</sup>	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (07 2011)
	STEL	150 ppm	655 mg/m <sup>3</sup>	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010)
	Ceiling	300 ppm		US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010)
	TWA PEL	100 ppm	435 mg/m <sup>3</sup>	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010)
	TWA	100 ppm		US. ACGIH Threshold Limit Values (2011)
	STEL	150 ppm		US. ACGIH Threshold Limit Values (2011)
	PEL	100 ppm	435 mg/m <sup>3</sup>	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Titanium dioxide	TWA		10 mg/m <sup>3</sup>	US. ACGIH Threshold Limit Values (2011)
Titanium dioxide - Total dust.	PEL		15 mg/m <sup>3</sup>	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Titanium dioxide - Respirable fraction.	TWA		15 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
Titanium dioxide - Total dust.	TWA		15 mg/m <sup>3</sup>	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
Titanium dioxide - Respirable fraction.	TWA		5 mg/m <sup>3</sup>	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
Titanium dioxide - Total dust.	TWA		50 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
Aluminum - Respirable fraction.	TWA		1 mg/m <sup>3</sup>	US. ACGIH Threshold Limit Values (2011)
Aluminum - Total dust. - as Al	PEL		15 mg/m <sup>3</sup>	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Aluminum - Respirable fraction. - as Al	PEL		5 mg/m <sup>3</sup>	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (03 2016)
Aluminum - Respirable fraction.	TWA		5 mg/m <sup>3</sup>	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
	TWA		15 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
Aluminum - Total dust.	TWA		50 millions of particles per cubic foot of	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)

		air	
	TWA	15 mg/m <sup>3</sup>	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
Ethylbenzene	TWA	20 ppm	US. ACGIH Threshold Limit Values (2011)
	PEL	100 ppm 435 mg/m <sup>3</sup>	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
1,3,5-Trimethylbenzene	TWA	25 ppm	US. ACGIH Threshold Limit Values (2011)
4,4'-Methylene bis(phenylisocyanate)	TWA	0.005 ppm	US. ACGIH Threshold Limit Values (2011)
	Ceiling	0.02 ppm 0.2 mg/m <sup>3</sup>	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Trimethyl benzene (mixed isomers)	TWA	25 ppm	US. ACGIH Threshold Limit Values (2011)
Cumene	TWA	50 ppm	US. ACGIH Threshold Limit Values (2011)
	PEL	50 ppm 245 mg/m <sup>3</sup>	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Aluminum oxide - Respirable fraction.	TWA	1 mg/m <sup>3</sup>	US. ACGIH Threshold Limit Values (2011)
	PEL	5 mg/m <sup>3</sup>	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Aluminum oxide - Total dust.	PEL	15 mg/m <sup>3</sup>	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	50 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
Aluminum oxide - Respirable fraction.	TWA	15 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
	TWA	5 mg/m <sup>3</sup>	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
Aluminum oxide - Total dust.	TWA	15 mg/m <sup>3</sup>	US. OSHA Table Z-3 (29 CFR 1910.1000) (03 2016)
Crystalline Silica (Quartz)/ Silica Sand - Respirable fraction.	TWA	0.025 mg/m <sup>3</sup>	US. ACGIH Threshold Limit Values (2011)
Crystalline Silica (Quartz)/ Silica Sand - Respirable dust.	TWA	0.05 mg/m <sup>3</sup>	US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053) (03 2016)
	OSHA_ACT	0.025 mg/m <sup>3</sup>	US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053) (03 2016)
Crystalline Silica (Quartz)/ Silica Sand - Respirable dust.	PEL	0.05 mg/m <sup>3</sup>	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (03 2016)
Crystalline Silica (Quartz)/ Silica Sand - Respirable.	TWA	2.4 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000) (2000)
	TWA	0.1 mg/m <sup>3</sup>	US. OSHA Table Z-3 (29 CFR 1910.1000) (2000)
2,4-Toluene diisocyanate - Inhalable fraction and vapor.	STEL	0.005 ppm	US. ACGIH Threshold Limit Values (03 2016)
	TWA	0.001 ppm	US. ACGIH Threshold Limit Values (03 2016)
2,4-Toluene diisocyanate	Ceiling	0.02 ppm 0.14 mg/m <sup>3</sup>	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Dibutyl tin dilaurate - as Sn	STEL	0.2 mg/m <sup>3</sup>	US. ACGIH Threshold Limit Values (2011)
	TWA	0.1 mg/m <sup>3</sup>	US. ACGIH Threshold Limit Values (2011)
	PEL	0.1 mg/m <sup>3</sup>	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)

Chemical name	Type	Exposure Limit Values	Source
Calcium Carbonate (Limestone) - Total dust.	STEL	20 mg/m <sup>3</sup>	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	10 mg/m <sup>3</sup>	Canada. British Columbia OELs. (Occupational

			Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Calcium Carbonate (Limestone) - Respirable fraction.	TWA	3 mg/m <sup>3</sup>	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Calcium Carbonate (Limestone) - Total dust.	TWA	10 mg/m <sup>3</sup>	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
1,2,4-Trimethylbenzene	TWA	25 ppm 123 mg/m <sup>3</sup>	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
1,2,4-Trimethylbenzene	TWA	25 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical 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) (11 2010)
1,2,4-Trimethylbenzene	TWA	25 ppm 123 mg/m <sup>3</sup>	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Xylene	TWA	100 ppm 434 mg/m <sup>3</sup>	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
	STEL	150 ppm 651 mg/m <sup>3</sup>	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
Xylene	TWA	100 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	STEL	150 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Xylene	TWA	100 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
	STEL	150 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
Xylene	STEL	150 ppm 651 mg/m <sup>3</sup>	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
	TWA	100 ppm 434 mg/m <sup>3</sup>	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)



Titanium dioxide - Total dust.	TWA	10 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Titanium dioxide - Respirable fraction.	TWA	3 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Titanium dioxide	TWA	10 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
Titanium dioxide - Total dust.	TWA	10 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Aluminum - Respirable.	TWA	1 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Aluminum - Respirable fraction.	TWA	1 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
Aluminum	TWA	10 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Aluminum - as Al	TWA	5 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Aluminum - Welding fume. - as Al	TWA	5 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Hydrotreated heavy naphtha	TWA	525 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
Ethylbenzene	TWA	20 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical 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) (06 2015)
Ethylbenzene	STEL	125 ppm 543 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
	TWA	100 ppm 434 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
1,3,5-Trimethylbenzene	TWA	25 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical 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) (11 2010)
1,3,5-Trimethylbenzene	TWA	25 ppm 123 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
4,4'-Methylene bis(phenylisocyanate)	CEILING	0.01 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical 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 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) (06 2015)
	CEV	0.02 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (06 2015)

4,4'-Methylene bis(phenylisocyanate)	TWA	0.005 ppm 0.051 mg/m <sup>3</sup>	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Cumene	STEL	75 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	25 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical 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) (11 2010)
Cumene	TWA	50 ppm 246 mg/m <sup>3</sup>	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Polymethylene polyphenyl isocyanate	TWA	0.005 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical 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 Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Crystalline Silica (Quartz)/ Silica Sand - Respirable fraction.	TWA	0.025 mg/m <sup>3</sup>	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Crystalline Silica (Quartz)/ Silica Sand - Respirable fraction.	TWA	0.10 mg/m <sup>3</sup>	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (06 2015)
Crystalline Silica (Quartz)/ Silica Sand - Respirable dust.	TWA	0.1 mg/m <sup>3</sup>	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
2,4-Toluene diisocyanate	CEILING	0.01 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical 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 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) (06 2015)
	CEV	0.02 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (06 2015)
2,4-Toluene diisocyanate	TWA	0.005 ppm 0.036 mg/m <sup>3</sup>	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
	STEL	0.02 ppm 0.14 mg/m <sup>3</sup>	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (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)
Ethylbenzene (Sum of mandelic acid and phenylglyoxylic acid: Sampling time: End of shift.)	0.15 g/g (Creatinine in urine)	ACGIH BEI (02 2014)
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)

**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**

**General information:** Use explosion-proof ventilation equipment. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

**Eye/face protection:** Wear goggles/face shield.

**Skin Protection**

**Hand Protection:** Use suitable protective gloves if risk of skin contact.

**Other:** 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. When using do not smoke. Contaminated work clothing should not be allowed out of the workplace. Avoid contact with skin.

**9. Physical and chemical properties**

**Appearance**

**Physical state:** liquid  
**Form:** liquid

<b>Color:</b>	Gray
<b>Odor:</b>	Mild petroleum/solvent
<b>Odor threshold:</b>	No data available.
<b>pH:</b>	No data available.
<b>Melting point/freezing point:</b>	No data available.
<b>Initial boiling point and boiling range:</b>	> 121 °C > 250 °F
<b>Flash Point:</b>	39 °C 103 °F (Setaflash Closed Cup)
<b>Evaporation rate:</b>	Slower than Ether
<b>Flammability (solid, gas):</b>	No
<b>Upper/lower limit on flammability or explosive limits</b>	
<b>Flammability limit - upper (%):</b>	No data available.
<b>Flammability limit - lower (%):</b>	No data available.
<b>Explosive limit - upper (%):</b>	No data available.
<b>Explosive limit - lower (%):</b>	No data available.
<b>Vapor pressure:</b>	No data available.
<b>Vapor density:</b>	Vapors are heavier than air and may travel along the floor and in the bottom of containers.
<b>Relative density:</b>	1.2
<b>Solubility(ies)</b>	
<b>Solubility in water:</b>	Practically Insoluble
<b>Solubility (other):</b>	No data available.
<b>Partition coefficient (n-octanol/water):</b>	No data available.
<b>Auto-ignition temperature:</b>	No data available.
<b>Decomposition temperature:</b>	No data available.
<b>Viscosity:</b>	No data available.

## 10. Stability and reactivity

<b>Reactivity:</b>	No data available.
<b>Chemical Stability:</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions:</b>	No data available.
<b>Conditions to avoid:</b>	Heat, sparks, flames.
<b>Incompatible Materials:</b>	Alcohols. Amines. Strong acids. Strong bases. Water, moisture.
<b>Hazardous Decomposition Products:</b>	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation:</b>	In high concentrations, vapors, fumes or mists may irritate nose, throat and mucus membranes.
--------------------	---

**Skin Contact:** Causes mild skin irritation. May cause an allergic skin reaction.  
**Eye contact:** Eye contact is possible and should be avoided.  
**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: 21,314.81 mg/kg  
**Dermal**  
**Product:** ATEmix: 23,439.02 mg/kg  
**Inhalation**  
**Product:** ATEmix: 2.49 mg/l

**Repeated dose toxicity**  
**Product:** No data available.

**Skin Corrosion/Irritation**  
**Product:** No data available.

**Specified substance(s):**

Aromatic petroleum distillates	in vivo (Rabbit): Irritating Experimental result, Key study
1,2,4-Trimethylbenzene	in vivo (Rabbit): Irritating Read-across from supporting substance (structural analogue or surrogate), Key study
Xylene	in vivo (Rabbit): Moderate irritant Experimental result, Weight of Evidence study
Titanium dioxide	in vivo (Rabbit): Not irritant Experimental result, Supporting study
Aluminum	in vivo (Rabbit): Not classified as an Irritant Read-across from supporting substance (structural analogue or surrogate), Supporting study
Hydrotreated heavy naphtha	in vivo (Rabbit): Study design not appropriate to classify skin irritation. Experimental result, Supporting study
1,3,5-Trimethylbenzene	in vivo (Rabbit): Irritating Experimental result, Key study
4,4'-Methylene bis(phenylisocyanate)	in vivo (Rabbit): Irritating Read-across based on grouping of substances (category approach), Key study
Cumene	in vivo (Rabbit): Not irritant Experimental result, Key study
Aluminum oxide	in vivo (Rabbit): Not irritant Experimental result, Key study
2,4-Toluene diisocyanate	in vivo (Rabbit): Moderately irritating Experimental result, Supporting study
Dibutyl tin dilaurate	In vitro (Human, in vitro reconstituted epidermis model): Not irritant Experimental result, Supporting study

**Serious Eye Damage/Eye Irritation**

**Product:** No data available.

**Specified substance(s):**

Aromatic petroleum distillates	Rabbit, 24 - 72 hrs: Not irritating
1,2,4-Trimethylbenzene	Rabbit, 30 min: Not irritating
Xylene	Rabbit, 24 hrs: Moderately irritating
Titanium dioxide	Rabbit, 24 hrs: Not irritating
Aluminum	Rabbit, 24 hrs: Not irritating
Hydrotreated heavy naphtha	Rabbit, 24 - 72 hrs: Not irritating

Ethylbenzene	Rabbit, 7 d: Slightly irritating
1,3,5-Trimethylbenzene	Rabbit, 30 min: Not irritating
Cumene	Rabbit, 24 hrs: Not irritating
Aluminum oxide	Rabbit, 24 hrs: Not irritating
2,4-Toluene diisocyanate	Rabbit, 24 - 72 hrs: Category 2
Dibutyl tin dilaurate	Rabbit, 24 hrs: Highly irritating

**Respiratory or Skin Sensitization**

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

**Carcinogenicity**

**Product:** No data available.

**IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:**

Titanium dioxide	Overall evaluation: Possibly carcinogenic to humans.
Ethylbenzene	Overall evaluation: Possibly carcinogenic to humans.
Cumene	Overall evaluation: Possibly carcinogenic to humans.
Crystalline Silica (Quartz)/ Silica Sand	Overall evaluation: Carcinogenic to humans.
2,4-Toluene diisocyanate	Overall evaluation: Possibly carcinogenic to humans.

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

Cumene	Reasonably Anticipated to be a Human Carcinogen.
Crystalline Silica (Quartz)/ Silica Sand	Known To Be Human Carcinogen.
2,4-Toluene diisocyanate	Reasonably Anticipated to be a Human Carcinogen.

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):**

No carcinogenic components identified

**Germ Cell Mutagenicity**

**In vitro**  
**Product:** No data available.

**In vivo**  
**Product:** No data available.

**Reproductive toxicity**  
**Product:** No data available.

**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.

**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 (Fathead minnow (Pimephales promelas), 96 h): 7.19 - 8.28 mg/l Mortality
- Xylene LC 50 (Fathead minnow (Pimephales promelas), 96 h): 13.41 mg/l Mortality
- Aluminum LC 50 (Rainbow trout,donaldson trout (Oncorhynchus mykiss), 96 h): 0.12 mg/l Mortality
- Ethylbenzene LC 50 (Rainbow trout,donaldson trout (Oncorhynchus mykiss), 96 h): 4.2 mg/l Mortality



Cumene	LC 50 (Fathead minnow (Pimephales promelas), 96 h): 6.04 - 6.61 mg/l Mortality
2,4-Toluene diisocyanate	LC 50 (Fathead minnow (Pimephales promelas), 96 h): 108.8 - 240.4 mg/l Mortality
Dibutyl tin dilaurate	LC 50 (Ide, silver or golden orfe (Leuciscus idus), 48 h): 2 mg/l Mortality

### Aquatic Invertebrates

<b>Product:</b>	No data available.
<b>Specified substance(s):</b>	
Titanium dioxide	EC 50 (Water flea (Daphnia magna), 48 h): > 1,000 mg/l Intoxication
Ethylbenzene	EC 50 (Water flea (Daphnia magna), 48 h): 1.37 - 4.4 mg/l Intoxication
Trimethyl benzene (mixed isomers)	LC 50 (Daggerblade grass shrimp (Palaemonetes pugio), 24 h): 7 mg/l Mortality
Cumene	LC 50 (Water flea (Daphnia magna), 48 h): 7.9 - 45.1 mg/l Mortality
Dibutyl tin dilaurate	EC 50 (Water flea (Daphnia magna), 24 h): 0.66 mg/l Intoxication

### Chronic hazards to the aquatic environment:

#### Fish

<b>Product:</b>	No data available.
<b>Specified substance(s):</b>	
Hydrotreated heavy naphtha	LL 50 (Pimephales promelas, 14 d): 5.2 mg/l Experimental result, Supporting study NOAEL (Pimephales promelas, 14 d): 2.6 mg/l Experimental result, Supporting study NOAEL (Daphnia magna, 21 d): 2.6 mg/l Other, Key study EC 50 (Daphnia magna, 21 d): 10 mg/l Other, Key study

#### Aquatic Invertebrates

<b>Product:</b>	No data available.
-----------------	--------------------

#### Toxicity to Aquatic Plants

<b>Product:</b>	No data available.
-----------------	--------------------

### Persistence and Degradability

#### Biodegradation

<b>Product:</b>	No data available.
-----------------	--------------------

#### BOD/COD Ratio

<b>Product:</b>	No data available.
-----------------	--------------------

### Bioaccumulative potential Bioconcentration Factor (BCF)

**Product:** No data available.

**Specified substance(s):**  
Aluminum Brook trout (*Salvelinus fontinalis*), Bioconcentration Factor (BCF): 36 (Flow through)

**Partition Coefficient n-octanol / water (log Kow)**

**Product:** No data available.

**Specified substance(s):**  
Xylene Log Kow: 3.12 - 3.20  
Ethylbenzene Log Kow: 3.15  
Cumene Log Kow: 3.66  
Dibutyl tin dilaurate Log Kow: 3.12

**Mobility in soil:** No data available.

**Other adverse effects:** Toxic to aquatic organisms.

### 13. Disposal considerations

**Disposal instructions:** 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:**

Not Regulated

**CFR / DOT:**

Not Regulated

**IMDG:**

UN1139, COATING SOLUTION, 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)**

<u>Chemical Identity</u>	<u>Reportable quantity</u>
2,4-Toluene diisocyanate	De minimis concentration: TSCA 5(a)(2)% One-Time Export Notification only.

**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**

<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.
Ethylbenzene	1000 lbs.
4,4'-Methylene bis(phenylisocyanate)	5000 lbs.
Cumene	5000 lbs.
2,4-Toluene diisocyanate	100 lbs.
Toluene	1000 lbs.
Toluene-2,6-Diisocyanate	100 lbs.
Naphthalene	100 lbs.
Benzene	10 lbs.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

- Hazard categories**
- Fire Hazard
  - Immediate (Acute) Health Hazards
  - Delayed (Chronic) Health Hazard

**SARA 302 Extremely Hazardous Substance**

<u>Chemical Identity</u>	<u>Reportable quantity</u>	<u>Threshold Planning Quantity</u>
2,4-Toluene diisocyanate	100 lbs.	500 lbs.
Toluene-2,6-Diisocyanate	100 lbs.	100 lbs.

**SARA 304 Emergency Release Notification**

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

**SARA 311/312 Hazardous Chemical**

<u>Chemical Identity</u>	<u>Threshold Planning Quantity</u>
2,4-Toluene diisocyanate	500lbs
Toluene-2,6-Diisocyanate	100lbs
Calcium Carbonate (Limestone)	10000 lbs
Aromatic petroleum distillates	10000 lbs
1,2,4-Trimethylbenzene	10000 lbs
Xylene	10000 lbs
Titanium dioxide	10000 lbs
Aluminum	10000 lbs
Hydrotreated heavy naphtha	10000 lbs
Ethylbenzene	10000 lbs
1,3,5-Trimethylbenzene	10000 lbs
4,4'-Methylene bis(phenylisocyanate)	10000 lbs
Trimethyl benzene (mixed isomers)	10000 lbs
Cumene	10000 lbs
Aluminum oxide	10000 lbs
Polymethylene polyphenyl isocyanate	10000 lbs
Crystalline Silica (Quartz)/ Silica Sand	10000 lbs
Dibutyl tin dilaurate	10000 lbs

**SARA 313 (TRI Reporting)**

<u>Chemical Identity</u>
1,2,4-Trimethylbenzene
Xylene
Aluminum
Ethylbenzene
2,4-Toluene diisocyanate

**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)**

None present or none present in regulated quantities.

**US State Regulations**

**US. California Proposition 65**



**WARNING**

Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

**US. New Jersey Worker and Community Right-to-Know Act**

**Chemical Identity**

Calcium Carbonate (Limestone)  
1,2,4-Trimethylbenzene  
Xylene  
Titanium dioxide  
Aluminum  
Ethylbenzene  
1,3,5-Trimethylbenzene  
Crystalline Silica (Quartz)/ Silica Sand  
2,4-Toluene diisocyanate

**US. Massachusetts RTK - Substance List**

**Chemical Identity**

Calcium Carbonate (Limestone)  
1,2,4-Trimethylbenzene  
Xylene  
Titanium dioxide  
Aluminum  
Ethylbenzene  
1,3,5-Trimethylbenzene  
Crystalline Silica (Quartz)/ Silica Sand  
2,4-Toluene diisocyanate  
Toluene-2,6-Diisocyanate

**US. Pennsylvania RTK - Hazardous Substances**

**Chemical Identity**

Calcium Carbonate (Limestone)  
1,2,4-Trimethylbenzene  
Xylene  
Titanium dioxide  
Aluminum  
Hydrotreated heavy naphtha  
Ethylbenzene  
1,3,5-Trimethylbenzene  
2,4-Toluene diisocyanate

## US. Rhode Island RTK

### Chemical Identity

Calcium Carbonate (Limestone)  
1,2,4-Trimethylbenzene  
Xylene  
Titanium dioxide  
Aluminum  
Ethylbenzene  
1,3,5-Trimethylbenzene

## 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)	:	254 g/l
VOC Method 310	:	21.17 %

**Inventory Status:**

Australia AICS:	One or more components in this product are not listed on or exempt from the Inventory.
Canada DSL Inventory List:	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.

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

<b>Revision Date:</b>	02/05/2019
<b>Version #:</b>	1.2
<b>Further Information:</b>	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.