

# **Vulkem Primer #171**

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## Vulkem® Primer #171

Porous Surface Primer (Not for use in Canada and OTC states)

### Product Description

Vulkem® Primer #171 is a quick-drying, one-part, moisture-curing primer that enhances adhesion to concrete, plywood and other porous substrates where Vulkem® urethane sealants, membranes or coatings will be applied. NOT for use in Canada and OTC states.

### Basic Uses

It is used as an adhesion promoter for Vulkem brand urethane sealants and coatings and TREMproof membranes on porous surfaces such as concrete and wood.

### Coverage Rate

100 to 600 ft<sup>2</sup>/gal

### Packaging

1-qt (946-mL) can  
1-gal (3.8-L) pails  
5-gal (18.9-L) pails

### Availability

Immediately available from your local Tremco Sales Representative, Tremco Distributor or Tremco Warehouse.

### Storage

Store indoors, protected from moisture, at temperatures between 50°F and 90°F (10°C and 32°C) and out of direct sunlight.

### Limitations

- All surfaces must be sound, clean, dry and free from contamination. A thorough wire brushing, grinding, sandblasting or solvent cleaning may be required to expose clean, sound, virgin surfaces.
- Any questions regarding drying times, coverage rates and unique application techniques regarding the individual primers should be directed to Tremco Technical Services or your local Tremco Sales Representative.
- Do not apply over contaminated or damp surfaces.
- Do not thin.

### Application

Apply generously with a clean brush or roller. Do not apply in excess where it will puddle or pond. At 70 °F (21 °C), allow 30 to 45 min for primer to become tacky before applying sealant, coating or membrane. Do not allow primer to dry completely. Do not apply sealant or coating if primer becomes hard or glossy. If it does, clean with a Tremco approved solvent and coat with Vulkem 191 Primer.

### Warranty

Tremco warrants its Products to be free of defects in materials, but makes no warranty as to appearance or color. Since methods of application and on-site conditions are beyond our control and can affect performance, Tremco makes no other warranty, expressed or implied, including warranties of MERCHANTABILITY and FITNESS FOR A PARTICULAR PURPOSE, with respect to Tremco Products. Tremco's sole obligation shall be, at its option, to replace or to refund the purchase price of the quantity of Tremco Product proven to be defective, and Tremco shall not be liable for any loss or damage.

Please refer to our website at [www.tremcosealants.com](http://www.tremcosealants.com) for the most up-to-date Product Data Sheets.

NOTE: All Tremco Safety Data Sheets (SDS) are in alignment with the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) requirements.

## TYPICAL PHYSICAL PROPERTIES

### PROPERTY @ 75°F, 50% RH

### TYPICAL VALUE

Solids	42% by weight
Viscosity	200 to 300 cP
Storage Temperature Range	50 °F (10 °C) minimum to 90 °F (32 °C) maximum

0419/V171DS-DC



### Tremco Commercial Sealants & Waterproofing

3735 Green Rd  
Beachwood OH 44122  
216.292.5000 / 800.321.7906

1451 Jacobson Ave  
Ashland OH 44805  
419.289.2050 / 800.321.6357

220 Wicksteed Ave  
Toronto ON M4H1G7  
416.421.3300 / 800.363.3213

1445 Rue de Coulomb  
Boucherville QC J4B 7L8  
514.521.9555

# 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

Skin Corrosion/Irritation Category 2  
Serious Eye Damage/Eye Irritation Category 2B  
Respiratory sensitizer Category 1  
Skin sensitizer Category 1  
Germ Cell Mutagenicity Category 1B  
Carcinogenicity Category 1B  
Toxic to reproduction Category 2

#### Unknown toxicity - Health

Acute toxicity, oral 0.23 %  
Acute toxicity, dermal 3.91 %  
Acute toxicity, inhalation, vapor 99.88 %  
Acute toxicity, inhalation, dust or mist 100 %

#### Environmental Hazards

Acute hazards to the aquatic environment Category 3

#### Unknown toxicity - Environment

Acute hazards to the aquatic environment	65.71 %
Chronic hazards to the aquatic environment	100 %

## Label Elements

### Hazard Symbol:



**Signal Word:** Danger

**Hazard Statement:** Flammable liquid and vapor.  
May cause allergy or asthma symptoms or breathing difficulties if inhaled.  
May cause an allergic skin reaction.  
May cause genetic defects.  
May cause cancer.  
Suspected of damaging fertility or the unborn child.  
Harmful to aquatic life.  
Causes skin and eye irritation.

### 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. Wash thoroughly after handling. Avoid breathing dust/fume/gas/mist/vapors/spray. [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: If breathing is difficult, remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER/doctor. 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 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. IF exposed or concerned: Get medical advice/attention. 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 (%)*
Aromatic petroleum distillates	64742-95-6	15 - 40%
1,2,4-Trimethylbenzene	95-63-6	15 - 40%
Xylene	1330-20-7	7 - 13%
1,3,5-Trimethylbenzene	108-67-8	3 - 7%
Ethylbenzene	100-41-4	1 - 5%
Cumene	98-82-8	0.5 - 1.5%
2,4-Toluene diisocyanate	584-84-9	0.1 - 1%
Toluene	108-88-3	0.1 - 1%
4,4'-Methylene bis(phenylisocyanate)	101-68-8	0.1 - 1%
Polymethylene polyphenyl isocyanate	9016-87-9	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. 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.

**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.

**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:** 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.

**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
1,2,4-Trimethylbenzene	REL	25 ppm 125 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	TWA	25 ppm 125 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	25 ppm 125 mg/m3	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/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	AN ESL	125 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (07 2011)
	TWA PEL	25 ppm 125 mg/m3	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/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	REL	100 ppm 435 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	STEL	150 ppm 655 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	REL	100 ppm 435 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	STEL	150 ppm 655 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	REL	100 ppm 435 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	STEL	150 ppm 655 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	TWA	100 ppm 435 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)

	TWA	100 ppm	435 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	STEL	150 ppm	655 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	ST ESL		350 µg/m3	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/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (07 2011)
	STEL	150 ppm	655 mg/m3	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/m3	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/m3	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)
Ethylbenzene	TWA	20 ppm		US. ACGIH Threshold Limit Values (2011)
	PEL	100 ppm	435 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Cumene	TWA	50 ppm		US. ACGIH Threshold Limit Values (2011)
	PEL	50 ppm	245 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
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/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Toluene	TWA	20 ppm		US. ACGIH Threshold Limit Values (2011)
	TWA	200 ppm		US. OSHA Table Z-2 (29 CFR 1910.1000) (02 2006)
	Ceiling	300 ppm		US. OSHA Table Z-2 (29 CFR 1910.1000) (02 2006)
	MAX. CONC	500 ppm		US. OSHA Table Z-2 (29 CFR 1910.1000) (02 2006)
4,4'-Methylene bis(phenylisocyanate)	TWA	0.005 ppm		US. ACGIH Threshold Limit Values (2011)
	Ceiling	0.02 ppm	0.2 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (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) (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/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Xylene	TWA	100 ppm 434 mg/m3	Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2) (07 2009)
	STEL	150 ppm 651 mg/m3	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/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)
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)
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/m3	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/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
	STEL	0.02 ppm 0.14 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (09 2017)
Toluene	TWA	20 ppm	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Toluene	TWA	20 ppm	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
Toluene	TWA	50 ppm 188 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/m3	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)

### 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)
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

##### 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. Provide easy access to water supply and eye wash facilities.

##### Eye/face protection:

Wear safety glasses with side shields (or goggles).

##### 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. 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

<b>Physical state:</b>	liquid
<b>Form:</b>	liquid
<b>Color:</b>	Colorless
<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>	34 °C 94 °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>	0.96
<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.

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<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.
<b>Skin Contact:</b>	Causes skin irritation. May cause an allergic skin reaction.
<b>Eye contact:</b>	Causes eye irritation.
<b>Ingestion:</b>	May be ingested by accident. Ingestion may cause irritation and malaise.

### Symptoms related to the physical, chemical and toxicological characteristics

<b>Inhalation:</b>	No data available.
<b>Skin Contact:</b>	No data available.
<b>Eye contact:</b>	No data available.
<b>Ingestion:</b>	No data available.

### Information on toxicological effects

#### Acute toxicity (list all possible routes of exposure)

<b>Oral Product:</b>	ATEmix: 13,004.3 mg/kg
<b>Dermal Product:</b>	ATEmix: 8,805.65 mg/kg
<b>Inhalation Product:</b>	Not classified for acute toxicity based on available data.

**Specified substance(s):**

1,2,4-Trimethylbenzene	LC 50 (Rat): 10,200 mg/m3
1,3,5-Trimethylbenzene	LC 50 (Rat): 10,200 mg/m3
2,4-Toluene diisocyanate	LC 50 (Rat): 14 mg/l
Toluene	LC 50 (Rat): 25.7 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
1,3,5-Trimethylbenzene	in vivo (Rabbit): Irritating Experimental result, Key study
Cumene	in vivo (Rabbit): Not irritant Experimental result, Key study
2,4-Toluene diisocyanate	in vivo (Rabbit): Moderately irritating Experimental result, Supporting study
Toluene	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

**Serious Eye Damage/Eye Irritation**

**Product:** No data available.

**Specified substance(s):**

Aromatic petroleum distillates	Rabbit, 24 - 72 hrs: Not irritating
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1,2,4-Trimethylbenzene	Rabbit, 30 min: Not irritating
Xylene	Rabbit, 24 hrs: Moderately irritating
1,3,5-Trimethylbenzene	Rabbit, 30 min: Not irritating
Ethylbenzene	Rabbit, 7 d: Slightly irritating
Cumene	Rabbit, 24 hrs: Not irritating
2,4-Toluene diisocyanate	Rabbit, 24 - 72 hrs: Category 2
Toluene	Rabbit, 24 - 72 hrs: Not irritating

**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.

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

Ethylbenzene	Overall evaluation: Possibly carcinogenic to humans.
Cumene	Overall evaluation: Possibly 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.
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:** 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.

**Aspiration Hazard**

**Product:**

No data available.

**Other effects:**

No data available.

<b>12. Ecological information</b>
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**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

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

Toluene

LC 50 (Fathead minnow (Pimephales promelas), 96 h): 20.5 - 23.8 mg/l Mortality

**Aquatic Invertebrates**

**Product:**

No data available.

**Specified substance(s):**

Ethylbenzene

EC 50 (Water flea (Daphnia magna), 48 h): 1.37 - 4.4 mg/l Intoxication

Cumene

LC 50 (Water flea (Daphnia magna), 48 h): 7.9 - 45.1 mg/l Mortality

Toluene

LC 50 (Water flea (Daphnia magna), 24 h): 240 - 420 mg/l Mortality



**Chronic hazards to the aquatic environment:**

**Fish**

**Product:** No data available.

**Specified substance(s):**

Toluene  
 LOAEL (Oncorhynchus kisutch, 40 d): 2.77 mg/l Experimental result, Key study  
 NOAEL (Pimephales promelas, 32 d): 4 mg/l Experimental result, Supporting study  
 LOAEL (Pimephales promelas, 32 d): 6 mg/l Experimental result, Supporting study  
 NOAEL (Oncorhynchus kisutch, 40 d): 1.39 mg/l Experimental result, Key study

**Aquatic Invertebrates**

**Product:** No data available.

**Toxicity to Aquatic Plants**

**Product:** No data available.

**Persistence and Degradability**

**Biodegradation**

**Product:** No data available.

**BOD/COD Ratio**

**Product:** No data available.

**Bioaccumulative potential**

**Bioconcentration Factor (BCF)**

**Product:** No data available.

**Specified substance(s):**

Toluene  
 Green algae (Selenastrum capricornutum), Bioconcentration Factor (BCF): 3,016 (Static)

**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  
 Toluene  
 Log Kow: 2.73

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

**Other adverse effects:** Harmful 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:**

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.

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

None present or none present in regulated quantities.

**CERCLA Hazardous Substance List (40 CFR 302.4):**

Chemical Identity

Xylene

Ethylbenzene

Cumene

2,4-Toluene diisocyanate

Toluene

4,4'-Methylene

bis(phenylisocyanate)

Toluene-2,6-Diisocyanate

Reportable quantity

100 lbs.

1000 lbs.

5000 lbs.

100 lbs.

1000 lbs.

5000 lbs.

100 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.
Cumene	5000 lbs.
2,4-Toluene diisocyanate	100 lbs.
Toluene	1000 lbs.
Polymethylene polyphenyl isocyanate	
4,4'-Methylene bis(phenylisocyanate)	5000 lbs.
Toluene-2,6-Diisocyanate	100 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
Aromatic petroleum distillates	10000 lbs
1,2,4-Trimethylbenzene	10000 lbs
Xylene	10000 lbs
1,3,5-Trimethylbenzene	10000 lbs
Ethylbenzene	10000 lbs
Cumene	10000 lbs
Toluene	10000 lbs
4,4'-Methylene bis(phenylisocyanate)	10000 lbs
Polymethylene polyphenyl isocyanate	10000 lbs

**SARA 313 (TRI Reporting)**

<u>Chemical Identity</u>
1,2,4-Trimethylbenzene
Xylene
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

1,2,4-Trimethylbenzene  
Xylene  
1,3,5-Trimethylbenzene  
Ethylbenzene  
Diethylbenzene, Mixed Isomers  
2,4-Toluene diisocyanate

#### US. Massachusetts RTK - Substance List

##### Chemical Identity

1,2,4-Trimethylbenzene  
Xylene  
1,3,5-Trimethylbenzene  
Ethylbenzene  
2,4-Toluene diisocyanate  
Toluene-2,6-Diisocyanate

#### US. Pennsylvania RTK - Hazardous Substances

##### Chemical Identity

1,2,4-Trimethylbenzene  
Xylene  
1,3,5-Trimethylbenzene  
Ethylbenzene  
2,4-Toluene diisocyanate

#### US. Rhode Island RTK

##### Chemical Identity

1,2,4-Trimethylbenzene  
Xylene  
1,3,5-Trimethylbenzene  
Ethylbenzene

### 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) : 559 g/l  
VOC Method 310 : 58.25 %

**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>	1.1
<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.