Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product identifier

**Product Name**: EZ TPO Bonding Adhesive

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

**Relevant identified use(s)**: Adhesive

1.3 Details of the supplier of the safety data sheet

**Manufacturer**: Firestone Building Products Company

- 250 West 96th Street
- Indianapolis, IN 46260
- United States
- genflexmsds@bfdp.com

**Telephone (General)**: 800-428-4442

1.4 Emergency telephone number

**Manufacturer**: (800) 424-9300 - CHEMTREC

**Manufacturer**: (703) 527-3887 - CHEMTREC - International

Section 2: Hazards Identification

EU/EEC


According to EU Directive 67/548/EEC (DSD) or 1999/45/EC (DPD)

2.1 Classification of the substance or mixture

**CLP**

- Flammable Liquids 2 - H225
- Skin Irritation 2 - H315
- Eye Irritation 2 - H319
- Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects - H336
- Reproductive Toxicity 2 - H361d
- Specific Target Organ Toxicity Repeated Exposure 2 - H373
- Hazardous to the aquatic environment Chronic 3 - H412

**DSD/DPD**

- Highly Flammable (F)
- Irritant (Xi)
- Harmful (Xn)
- Substances Toxic To Reproduction - Category 3
- R11, R38, R48/20, R63, R65, R67, R52, R53

2.2 Label Elements

**CLP**

DANGER
Hazard statements

H225 - Highly flammable liquid and vapour
H315 - Causes skin irritation
H319 - Causes serious eye irritation
H336 - May cause drowsiness or dizziness
H361d - Suspected of damaging the unborn child.
H373 - May cause damage to organs through prolonged or repeated exposure
H412 - Harmful to aquatic life with long lasting effects

Precautionary statements

Prevention

P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P210 - Keep away from heat, sparks, open flames and/or hot surfaces. - No smoking.
P233 - Keep container tightly closed.
P240 - Ground and/or bond container and receiving equipment.
P241 - Use explosion-proof electrical/ventilating/lighting/equipment.
P242 - Use only non-sparking tools.
P243 - Take precautionary measures against static discharge.
P244 - Use explosion-proof electrical/ventilating/lighting/equipment.
P260 - Do not breathe mist, vapours, spray.
P264 - Wash thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.
P273 - Avoid release to the environment.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P281 - Use personal protective equipment as required.

Response

P370+P378 - In case of fire: Use appropriate media for extinction.
P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P312 - Call a POISON CENTER or doctor/physician if you feel unwell.
P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P321 - Specific treatment, see supplemental first aid information.
P332+P313 - If skin irritation occurs: Get medical advice/attention.
P362 - Take off contaminated clothing and wash before reuse.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 - If eye irritation persists: Get medical advice/attention.
P314 - Get medical advice/attention if you feel unwell.
P308+P313 - IF exposed or concerned: Get medical advice/attention.

Storage/Disposal

P235 - Keep cool.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Supplemental information

DSD/DPD

25-35 percent of this product consists of an ingredient of unknown toxicity.

Risk phrases

R11 - Highly flammable.
R38 - Irritating to skin.
R48/20 - Harmful: danger of serious damage to health by prolonged exposure through inhalation.
R50 - Very toxic to aquatic organisms.
R51 - Toxic to aquatic organisms.
R52 - Harmful to aquatic organisms.
R53 - May cause long-term adverse effects in the aquatic environment.
R62 - Possible risk of impaired fertility.
R63 - Possible risk of harm to the unborn child.
R65 - Harmful: may cause lung damage if swallowed.
R67 - Vapours may cause drowsiness and dizziness.

Safety phrases

S9 - Keep container in a well ventilated place
S16 - Keep away from sources of ignition - No Smoking.
S37 - Wear suitable gloves.
S57 - Use appropriate containment to avoid environmental contamination.
2.3 Other Hazards

CLP
According to Regulation (EC) No. 1272/2008 (CLP) this material is considered hazardous.

DSD/DPD
According to European Directive 1999/45/EC this preparation is considered dangerous.

United States (US)
According to OSHA 29 CFR 1910.1200 HCS

2.1 Classification of the substance or mixture

OSHA HCS 2012
Flammable Liquids 2 - H225
Acute Toxicity Oral 4 - H302
Skin Irritation 2 - H315
Eye Irritation 2A - H319
Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects - H336
Carcinogenicity 2 - H351
Reproductive Toxicity 2 - H361
Specific Target Organ Toxicity Repeated Exposure 2 - H373

2.2 Label elements

OSHA HCS 2012

DANGER

Hazard statements
Highly flammable liquid and vapour - H225
Harmful if swallowed - H302
Causes skin irritation - H315
Causes serious eye irritation - H319
May cause drowsiness or dizziness - H336
Suspected of causing cancer. - H351
Suspected of damaging fertility or the unborn child. - H361
May cause damage to organs (Central Nervous System/CNS) through prolonged or repeated exposure - H373

Precautionary statements

Prevention
Obtain special instructions before use. - P201
Do not handle until all safety precautions have been read and understood. - P202
Keep away from heat, sparks, open flames and/or hot surfaces. - No smoking. - P210
Keep container tightly closed. - P233
Ground and/or bond container and receiving equipment. - P240
Use explosion-proof electrical/ventilating/lighting/equipment. - P241
Use only non-sparking tools. - P242
Take precautionary measures against static discharge. - P243
Do not breathe mist, vapours, spray. - P260
Wash thoroughly after handling. - P264
Do not eat, drink or smoke when using this product. - P270
Use only outdoors or in a well-ventilated area. - P271
Wear protective gloves/protective clothing/eye protection/face protection. - P280

Response
In case of fire: Use appropriate media for extinction. - P370+P378
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. - P304+P340
Call a POISON CENTER or doctor/physician if you feel unwell. - P312
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. - P303+P361+P353
Specific treatment, see supplemental first aid information. - P321
Take off contaminated clothing and wash before reuse. - P362
If skin irritation occurs: Get medical advice/attention. - P332+P313
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses,
if present and easy to do. Continue rinsing. - P305+P351+P338
If eye irritation persists: Get medical advice/attention. - P337+P313
Rinse mouth. - P330
Get medical advice/attention if you feel unwell. - P314
IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician. - P309+P311

Storage/Disposal  
Keep cool. - P235
Store in a well-ventilated place. Keep container tightly closed. - P403+P233
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations. - P501

Supplemental information  
25-35 percent of this product consists of an ingredient of unknown toxicity.

2.3 Other hazards

OSHA HCS 2012

Canada 
According to WHMIS

2.1 Classification of the substance or mixture

WHMIS  
Flammable Liquids - B2
Other Toxic Effects - D2A
Other Toxic Effects - D2B

2.2 Label elements

WHMIS  
Flammable Liquids - B2
Other Toxic Effects - D2A
Other Toxic Effects - D2B

2.3 Other hazards

WHMIS
In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

2.4 Other information

NFPA

See Section 12 for Ecological Information.

Section 3 - Composition/Information on Ingredients

3.1 Substances

Material does not meet the criteria of a substance in accordance with Regulation (EC) No 1272/2008.
## 3.2 Mixtures

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>Identifiers</th>
<th>%</th>
<th>LD50/LC50</th>
<th>Classifications According to Regulation/Directive</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>CAS:108-88-3</td>
<td>34%</td>
<td>Ingestion/Oral-Rat LD50 • 636 mg/kg</td>
<td>EU DSD/DPD: Annex I: F, R11; Repr. Cat. 3, R63; Xn, R48/20-65; Xi, R38, R67; EU CLP: Annex VI: Flam. Liq. 2, H226; Repr. 2, H361d; Asp. Tox. 1, H304; STOT RE 2 *, H373; Skin Irrit. 2, H315; STOT SE 3, H336</td>
<td>NDA</td>
</tr>
<tr>
<td></td>
<td>EC:203-625-9</td>
<td>TO</td>
<td>Inhalation-Rat LC50 • 49 g/m³ 4 Hour(s)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>44%</td>
<td>Skin-Rabbit LD50 • 14100 µL/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solvent-refined light petroleum naphtha</td>
<td>CAS:64741-84-0</td>
<td>25%</td>
<td>NDA</td>
<td>EU DSD/DPD: Not Classified - Classification criteria not met; EU CLP: Not Classified - Classification criteria not met</td>
<td>NDA</td>
</tr>
<tr>
<td></td>
<td>EC:265-086-6</td>
<td>TO</td>
<td>NDA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polymers</td>
<td>NDA</td>
<td>5%</td>
<td>Ingestion/Oral-Rat LD50 • &gt;40 g/kg</td>
<td>EU DSD/DPD: Not Classified - Classification criteria not met; EU CLP: Not Classified - Classification criteria not met</td>
<td>NDA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TO</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polymers</td>
<td>NDA</td>
<td>15%</td>
<td></td>
<td>EU DSD/DPD: Not Classified - Classification criteria not met; EU CLP: Not Classified - Classification criteria not met</td>
<td>NDA</td>
</tr>
<tr>
<td>1,3-Butadiene, 2-chloro-, polymers</td>
<td>CAS:9010-98-4</td>
<td>&lt; 12%</td>
<td>Ingestion/Oral-Rat LD50 • &gt;40 g/kg</td>
<td>EU DSD/DPD: Not Classified - Classification criteria not met; EU CLP: Not Classified - Classification criteria not met</td>
<td>NDA</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acetone</td>
<td>CAS:67-64-1</td>
<td>5%</td>
<td>Ingestion/Oral-Rat LD50 • 5800 mg/kg</td>
<td>EU DSD/DPD: Annex I: F, R11, Xi; R36; R66; R67; EU CLP: Annex VI: Flam. Liq. 2, H226; Eye Irrit. 2, H319; STOT SE 3, H336</td>
<td>NDA</td>
</tr>
<tr>
<td></td>
<td>EC:200-662-2</td>
<td>TO</td>
<td>Inhalation-Rat LC50 • 50100 mg/m³</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Xylene</td>
<td>CAS:1330-20-7</td>
<td>&lt; 1%</td>
<td>Ingestion/Oral-Rat LD50 • 4300 mg/kg</td>
<td>EU DSD/DPD: Annex I: R10, Xn; R20/21, Xi; R38; EU CLP: Annex VI: Flam. Liq. 3, H226; Acute Tox. 4 *, H312; Acute Tox. 4 *, H332; Skin Irrit. 2, H315</td>
<td>NDA</td>
</tr>
<tr>
<td></td>
<td>EC:215-535-7</td>
<td></td>
<td>Inhalation-Rat LC50 • 5000 ppm 4 Hour(s)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Skin-Rabbit LD50 • &gt;1700 mg/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Styrene</td>
<td>CAS:100-42-5</td>
<td>&lt; 1%</td>
<td>Ingestion/Oral-Rat LD50 • 2650 mg/kg</td>
<td>EU DSD/DPD: Annex I: R10 Xn; R20 Xi; R36/38; EU CLP: Annex VI: Flam. Liq. 3, H226; Acute Tox. 4 *, H332; Eye Irrit. 2, H319; Skin Irrit. 2, H315</td>
<td>NDA</td>
</tr>
<tr>
<td></td>
<td>EC:202-851-5</td>
<td></td>
<td>Inhalation-Rat LC50 • 2770 ppm 4 Hour(s)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EC:215-171-9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zinc oxide</td>
<td>CAS:1314-13-2</td>
<td>&lt; 0.3%</td>
<td>NDA</td>
<td>EU DSD/DPD: Annex I: N; R50-53; EU CLP: Annex VI: Aquatic Acute 1, H400; Aquatic Chronic 1, H410</td>
<td>NDA</td>
</tr>
<tr>
<td></td>
<td>EC:215-222-5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

See Section 11 for Toxicological Information.
Section 4 - First Aid Measures

4.1 Description of first aid measures

**Inhalation**
- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing. Get medical attention immediately if symptoms occur.

**Skin**
- In case of contact with substance, immediately flush skin with running water for at least 20 minutes. Remove and isolate contaminated clothing and shoes. If skin irritation occurs: Get medical advice/attention.

**Eye**
- In case of contact with substance, immediately flush eyes with running water for at least 20 minutes. If eye irritation persists: Get medical advice/attention.

**Ingestion**
- If swallowed, rinse mouth with water (only if the person is conscious). Do NOT induce vomiting. Do not give anything by mouth to an unconscious person. Get medical attention immediately if symptoms occur.

4.2 Most important symptoms and effects, both acute and delayed
- Refer to Section 11 - Toxicological Information.

4.3 Indication of any immediate medical attention and special treatment needed

**Notes to Physician**
- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Section 5 - Firefighting Measures

5.1 Extinguishing media

**Suitable Extinguishing Media**
- CAUTION: For mixtures containing a high percentage of an alcohol or polar solvent, alcohol-resistant foam may be more effective.
- LARGE FIRES: Water spray, fog or alcohol-resistant foam.
- SMALL FIRES: Dry chemical, CO2, water spray or alcohol-resistant foam.

**Unsuitable Extinguishing Media**
- Do not use a direct stream of water.

5.2 Special hazards arising from the substance or mixture

**Unusual Fire and Explosion Hazards**
- Containers may explode when heated.
- Vapor explosion hazard indoors, outdoors or in sewers.
- HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames.
- Many liquids are lighter than water.
- Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).
- Runoff to sewer may create fire or explosion hazard.
- Vapors may form explosive mixtures with air.
- Vapors may travel to source of ignition and flash back.

**Hazardous Combustion Products**
- Oxides of carbon, oxides of nitrogen, hydrochloric acid.

5.3 Advice for firefighters
- Structural firefighters' protective clothing will only provide limited protection.
- Wear positive pressure self-contained breathing apparatus (SCBA).
- Move containers from fire area if you can do it without risk.
- LARGE FIRES: Cool containers with flooding quantities of water until well after fire is out.

Section 6 - Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

**Personal Precautions**
- CAUTION: Victim may be a source of contamination. Do not touch or walk through
As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions. If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions. LARGE SPILL: Consider initial downwind evacuation for at least 300 meters (1000 feet) ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering.

6.2 Environmental precautions
- Prevent entry into waterways, sewers, basements or confined areas.

6.3 Methods and material for containment and cleaning up
Contains/Clean-up Measures
- Stop leak if you can do it without risk.
- Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
- Use clean non-sparking tools to collect absorbed material.
- A vapor suppressing foam may be used to reduce vapors.
- All equipment used when handling the product must be grounded.
- LARGE SPILLS: Dike far ahead of liquid spill for later disposal.
- LARGE SPILLS: Water spray may reduce vapor; but may not prevent ignition in closed spaces.

6.4 Reference to other sections
- Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 - Disposal Considerations.

Section 7 - Handling and Storage

7.1 Precautions for safe handling
Handling
- Do not use in areas without adequate ventilation. Handle and open container with care. Use good safety and industrial hygiene practices.

7.2 Conditions for safe storage, including any incompatibilities
Storage
- Keep away from fire. Store in a well-ventilated place. Keep container tightly closed.

7.3 Specific end use(s)
- Refer to Section 1.2 - Relevant identified uses.

Section 8 - Exposure Controls/Personal Protection

8.1 Control parameters

<table>
<thead>
<tr>
<th>Result</th>
<th>ACGIH</th>
<th>Canada Ontario</th>
<th>Canada Quebec</th>
<th>China</th>
<th>Europe</th>
</tr>
</thead>
<tbody>
<tr>
<td>STELs</td>
<td>Not established</td>
<td>Not established</td>
<td>Not established</td>
<td>100 mg/m3 STEL</td>
<td>100 ppm STEL; 384 mg/m3 STEL</td>
</tr>
<tr>
<td>TWAs</td>
<td>20 ppm TWA</td>
<td>20 ppm TWA</td>
<td>50 ppm TWAEV; 188 mg/m3 TWAEV</td>
<td>50 mg/m3 TWA</td>
<td>50 ppm TWA; 192 mg/m3 TWA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Result</th>
<th>Germany DFG</th>
<th>Germany TRGS</th>
<th>NIOSH</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceilings</td>
<td>200 ppm Peak; 760 mg/m3 Peak</td>
<td>Not established</td>
<td>Not established</td>
<td>300 ppm Ceiling</td>
</tr>
<tr>
<td></td>
<td>50 ppm TWA AGW</td>
<td>(The risk of damage to the embryo or fetus can be excluded when AGW and BGW values</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 8.2 Exposure controls

**Engineering Measures/Controls**

This material is designed to be used outdoors, in roofing applications. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering measures.
controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

**Personal Protective Equipment**

**Respiratory**
- Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH or European Standard EN 149 approved respirator if exposure limits are exceeded or symptoms are experienced.

**Eye/Face**
- Wear chemical splash safety goggles.

**Hands**
- Wear appropriate chemical resistant gloves (neoprene, nitrile, polyvinyl alcohol (PVA)).

**Skin/Body**
- Wear appropriate chemical resistant clothing.

**Environmental Exposure Controls**
- In case of spills, keep product clear of sewers, waterways or land areas. Dispose of waste product in accordance with national and local laws and regulations.

---

**Section 9 - Physical and Chemical Properties**

**9.1 Information on Physical and Chemical Properties**

<table>
<thead>
<tr>
<th>Material Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical Form</strong></td>
</tr>
<tr>
<td>Appearance/Description</td>
</tr>
<tr>
<td>Color</td>
</tr>
<tr>
<td>Odor</td>
</tr>
<tr>
<td>Odor Threshold</td>
</tr>
</tbody>
</table>

**General Properties**

<table>
<thead>
<tr>
<th>Property</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Point</td>
<td>55 to 142 F(12.7778 to 61.1111°C)</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>Data lacking</td>
</tr>
<tr>
<td>Specific Gravity/Relative Density</td>
<td>0.844 Water=1</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not relevant</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>Data lacking</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>Insoluble</td>
</tr>
<tr>
<td>Explosive Properties</td>
<td>Explosion hazard.</td>
</tr>
</tbody>
</table>

**Volvatility**

<table>
<thead>
<tr>
<th>Property</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vapor Pressure</td>
<td>9.5 to 185 mmHg (torr) @ 68 F(20°C)</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>1.9 to 9.5 n-Butyl Acetate = 1</td>
</tr>
<tr>
<td>Volatiles (Vol.)</td>
<td>76.4 %</td>
</tr>
<tr>
<td>VOC (Vol.)</td>
<td>633 g/L</td>
</tr>
</tbody>
</table>

**Flammability**

<table>
<thead>
<tr>
<th>Property</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash Point</td>
<td>-18 C(-0.4 F)</td>
</tr>
<tr>
<td>LEL</td>
<td>1.1 %</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not relevant.</td>
</tr>
<tr>
<td>UEL</td>
<td>7.5 %</td>
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<tr>
<td>Autoignition</td>
<td>Data lacking</td>
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</table>

**Environmental**

<table>
<thead>
<tr>
<th>Property</th>
<th>Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Octanol/Water Partition coefficient</td>
<td>Data lacking</td>
</tr>
</tbody>
</table>

**9.2 Other Information**

- No additional physical and chemical parameters noted.

---

**Section 10: Stability and Reactivity**

**10.1 Reactivity**
- No dangerous reaction known under conditions of normal use.

**10.2 Chemical stability**
- Stable under normal temperatures and pressures.

**10.3 Possibility of hazardous reactions**
Hazardous polymerization will not occur.

### 10.4 Conditions to avoid

Avoid flames, sparks, and other sources of ignition. Avoid contact with combustible materials. Avoid contact with incompatible materials.

### 10.5 Incompatible materials

Acids, bases, combustible materials, oxidizing materials.

### 10.6 Hazardous decomposition products

Thermal decomposition could produce CO, CO2, and Oxides of Nitrogen.

---

**Section 11 - Toxicological Information**

#### 11.1 Information on toxicological effects

| Components | Acute Toxicity: Ingestion/Oral-Rat LD50 • 636 mg/kg; Inhalation-Rat LC50 • 49 g/m³ 4 Hour(s); Skin-Rabbit LD50 • 14100 µL/kg; Irritation: Eye-Rabbit • 100 mg 30 Second(s)-Rinse • Mild irritation; Skin-Rabbit • 435 mg • Mild irritation; Reproductive: Inhalation-Rat TClO • 1500 ppm (7-20D preg); Reproductive Effects: Specific Developmental Abnormalities: Central nervous system; Reproductive Effects: Effects on Newborn: Growth statistics (e.g., reduced weight gain); Reproductive Effects: Effects on Newborn: Biochemical and metabolic |
| Toluene (34% TO 44%) | 108-88-3 |

---

**GHS Properties**

<table>
<thead>
<tr>
<th>Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute toxicity</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Aspiration Hazard</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Carcinogenicity</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Germ Cell Mutagenicity</td>
</tr>
<tr>
<td></td>
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<tr>
<td>Skin corrosion/Irritation</td>
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<tr>
<td></td>
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<tr>
<td>Skin sensitization</td>
</tr>
<tr>
<td></td>
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<tr>
<td>STOT-RE</td>
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<tr>
<td></td>
</tr>
<tr>
<td>STOT-SE</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Toxicity for Reproduction</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Respiratory sensitization</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Serious eye damage/Irritation</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

**Route(s) of entry/exposure**

Inhalation, Skin, Eye, Ingestion/Oral
Potential Health Effects

Inhalation
  - **Acute (Immediate)**: May be harmful. May affect the central nervous system. Symptoms may include dizziness, drowsiness, lethargy, coma and death.
  - **Chronic (Delayed)**: Repeated and prolonged exposure may cause Central Nervous System (CNS) effects.

Skin
  - **Acute (Immediate)**: Causes skin irritation.
  - **Chronic (Delayed)**: No data available.

Eye
  - **Acute (Immediate)**: Causes serious eye irritation.
  - **Chronic (Delayed)**: No data available.

Ingestion
  - **Acute (Immediate)**: May be harmful.
  - **Chronic (Delayed)**: No data available.

### Carcinogenic Effects

<table>
<thead>
<tr>
<th>Substance</th>
<th>CAS</th>
<th>IARC</th>
<th>NTP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>108-88-3</td>
<td>Group 3-Not Classifiable</td>
<td>Evidence of Carcinogenicity</td>
</tr>
</tbody>
</table>

### Reproductive Effects
- Repeated and prolonged exposure may cause reproductive effects.

Section 12 - Ecological Information

#### 12.1 Toxicity

<table>
<thead>
<tr>
<th>EZ TPO Bonding Adhesive</th>
<th>Dosage</th>
<th>Species</th>
<th>Duration</th>
<th>Results</th>
<th>Exposure Conditions</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5.89-7.81 mg/L</td>
<td>Fish: Oncorhynchus Mykiss</td>
<td>96 Hour(s)</td>
<td>LC50</td>
<td>NDA</td>
<td>Toluene</td>
</tr>
<tr>
<td></td>
<td>15.22-19.05 mg/L</td>
<td>Fish: Pimephales promelas</td>
<td>96 Hour(s)</td>
<td>LC50</td>
<td>NDA</td>
<td>Toluene</td>
</tr>
<tr>
<td></td>
<td>2.1-2.98 mg/L</td>
<td>Fish: Pimephales promelas</td>
<td>96 Hour(s)</td>
<td>LC50</td>
<td>NDA</td>
<td>Solvent-refined light petroleum naphtha</td>
</tr>
<tr>
<td></td>
<td>9.74 mg/L</td>
<td>Water Flea: NDA</td>
<td>48 Hour(s)</td>
<td>EC50</td>
<td>NDA</td>
<td>Solvent-refined light petroleum naphtha</td>
</tr>
<tr>
<td></td>
<td>4.74-6.33 mg/L</td>
<td>Fish: Oncorhynchus mykiss</td>
<td>96 Hour(s)</td>
<td>LC50</td>
<td>NDA</td>
<td>Acetone</td>
</tr>
<tr>
<td></td>
<td>10294-17704 mg/L</td>
<td>Water Flea: NDA</td>
<td>48 Hour(s)</td>
<td>EC50</td>
<td>NDA</td>
<td>Acetone</td>
</tr>
</tbody>
</table>

This material may be toxic to aquatic organisms and cause long-term adverse effects in the aquatic environment.

#### 12.2 Persistence and degradability
- No information available for the product.

#### 12.3 Bioaccumulative potential
- No information available for the product.

#### 12.4 Mobility in Soil
- No information available for the product.

#### 12.5 Results of PBT and vPvB assessment
- PBT and vPvB assessment has not been carried out.
12.6 Other adverse effects

No studies have been found.

Section 13 - Disposal Considerations

13.1 Waste treatment methods

Product waste
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Packaging waste
Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Section 14 - Transport Information

<table>
<thead>
<tr>
<th>14.1 UN number</th>
<th>14.2 UN proper shipping name</th>
<th>14.3 Transport hazard class(es)</th>
<th>14.4 Packing group</th>
<th>14.5 Environmental hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOT</td>
<td>Adhesives</td>
<td>3</td>
<td>II</td>
<td>NDA</td>
</tr>
<tr>
<td>TDG</td>
<td>ADHESIVES</td>
<td>3</td>
<td>II</td>
<td>NDA</td>
</tr>
<tr>
<td>IMO/IMDG</td>
<td>ADHESIVES</td>
<td>3</td>
<td>II</td>
<td>NDA</td>
</tr>
<tr>
<td>ADN</td>
<td>ADHESIVES</td>
<td>3</td>
<td>II</td>
<td>NDA</td>
</tr>
<tr>
<td>ADR/RID</td>
<td>ADHESIVES</td>
<td>3</td>
<td>II</td>
<td>NDA</td>
</tr>
<tr>
<td>IATA/ICAO</td>
<td>Adhesives</td>
<td>3</td>
<td>II</td>
<td>NDA</td>
</tr>
</tbody>
</table>

14.6 Special precautions for user
None known.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not relevant.

14.8 Other information

DOT
Toluene has a reportable quantity of 1000 lbs (454 kg) as listed in Appendix A to 49 CFR 172.101. Hexane has a reportable quantity of 5000 lbs (2270 kg) as listed in Appendix A to 49 CFR 172.101. Cyclohexane has a reportable quantity of 1000 lbs (454 kg) as listed in Appendix A to 49 CFR 172.101.

Section 15 - Regulatory Information

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

SARA Hazard Classifications
Acute, Chronic, Fire

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS</th>
<th>MA</th>
<th>NJ</th>
<th>PA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>108-88-3</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS</th>
<th>Canada DSL</th>
<th>Canada NDSL</th>
<th>China</th>
<th>EU EINECS</th>
<th>EU ELNICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toluene</td>
<td>108-88-3</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Component</td>
<td>CAS</td>
<td>Japan ENCS</td>
<td>Korea KECL</td>
<td>TSCA</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Toluene</td>
<td>108-88-3</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Australia**

**Labor**

- **Australia - Work Health and Safety Regulations - Hazardous Substances Requiring Health Monitoring**
  - Toluene 108-88-3 Not Listed
- **Australia - High Volume Industrial Chemicals List**
  - Toluene 108-88-3
- **Australia - List of Designated Hazardous Substances - Classification**
  - Toluene 108-88-3 F, Xn, Xi Repr.Cat.3 R11, R63, R48/20, R65, R38, R67

**Environment**

- **Australia - National Pollutant Inventory (NPI) Substance List**
  - Toluene 108-88-3 10 tonne/yr Threshold category 1
- **Australia - Ozone Protection Act - Scheduled Substances**
  - Toluene 108-88-3 Not Listed
- **Australia - Priority Existing Chemical Program**
  - Toluene 108-88-3 Candidate chemical

**Bulgaria**

**Environment**

- **Bulgaria - Air Quality - Maximum Admissible Hazardous Contaminant Levels - 24 Hour**
  - Toluene 108-88-3 0.25 mg/m3 MAHCL

**Canada**

**Labor**

- **Canada - WHMIS - Classifications of Substances**
  - Toluene 108-88-3 B2, D2A, D2B
- **Canada - WHMIS - Ingredient Disclosure List**
  - Toluene 108-88-3 1 %

**Environment**

- **Canada - CEPA - Priority Substances List**
  - Toluene 108-88-3 Priority Substance List 1 (substance not considered toxic)

**Europe**

**Other**

- **EU - CLP (1272/2008) - Annex VI - Table 3.2 - Classification**
  - Toluene 108-88-3 F; R11 Xi; R38 Xn; R48/20-65 Repr.Cat.3; R63 R67
<table>
<thead>
<tr>
<th>EU - CLP (1272/2008) - Annex VI - Table 3.2 - Concentration Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Toluene</td>
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<thead>
<tr>
<th>EU - CLP (1272/2008) - Annex VI - Table 3.2 - Labelling</th>
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<thead>
<tr>
<th>EU - CLP (1272/2008) - Annex VI - Table 3.2 - Notes - Substances and Preparations</th>
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<tbody>
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<thead>
<tr>
<th>EU - CLP (1272/2008) - Annex VI - Table 3.2 - Safety Phrases</th>
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<tbody>
<tr>
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**Mexico**

<table>
<thead>
<tr>
<th>Mexico - Hazard Classifications</th>
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<tbody>
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<td>• Toluene</td>
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<thead>
<tr>
<th>Mexico - Regulated Substances</th>
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<td>• Toluene</td>
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**United States**

**Labor**

<table>
<thead>
<tr>
<th>U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals</th>
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<tbody>
<tr>
<td>• Toluene</td>
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<tr>
<th>U.S. - OSHA - Specifically Regulated Chemicals</th>
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<td>• Toluene</td>
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**Environment**

<table>
<thead>
<tr>
<th>U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants</th>
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<td>• Toluene</td>
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<table>
<thead>
<tr>
<th>U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities</th>
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<td>• Toluene</td>
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<thead>
<tr>
<th>U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs</th>
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<tr>
<th>U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs</th>
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<thead>
<tr>
<th>U.S. - CERCLA/SARA - Section 313 - Emission Reporting</th>
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<td>• Toluene</td>
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<thead>
<tr>
<th>U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing</th>
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<td>• Toluene</td>
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<table>
<thead>
<tr>
<th>U.S. - RCRA (Resource Conservation &amp; Recovery Act) - Hazardous Constituents - Appendix VIII to 40 CFR 261</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Toluene</td>
</tr>
</tbody>
</table>
U.S. - RCRA (Resource Conservation & Recovery Act) - List for Hazardous Constituents

- Toluene 108-88-3

United States - California

**Environment**

- U.S. - California - Proposition 65 - Carcinogens List
  - Toluene 108-88-3 Not Listed
- U.S. - California - Proposition 65 - Developmental Toxicity
  - Toluene 108-88-3 developmental toxicity, initial date 1/1/91
- U.S. - California - Proposition 65 - Reproductive Toxicity - Female
  - Toluene 108-88-3 female reproductive toxicity, initial date 8/7/09
- U.S. - California - Proposition 65 - Reproductive Toxicity - Male
  - Toluene 108-88-3 Not Listed

United States - Pennsylvania

**Labor**

- U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
  - Toluene 108-88-3
- U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances
  - Toluene 108-88-3 Not Listed

United States - Rhode Island

**Labor**

- U.S. - Rhode Island - Hazardous Substance List
  - Toluene 108-88-3 Toxic (skin); Flammable (skin)

### 15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out.

### Section 16 - Other Information

**Relevant Phrases (code & full text)**

- H226 - Flammable liquid and vapour
- H312 - Harmful in contact with skin
- H332 - Harmful if inhaled
- H335 - May cause respiratory irritation
- H340 - May cause genetic defects.
- H350 - May cause cancer.
- H400 - Very toxic to aquatic life
- R10 - Flammable.
- R20 - Harmful by inhalation.
- R36 - Irritating to eyes.
- R36/37 - Irritating to eyes and respiratory system.
- R36/38 - Irritating to eyes and skin.
- R45 - May cause cancer.
- R46 - May cause heritable genetic damage.
- R50 - Very toxic to aquatic organisms.
- R66 - Repeated exposure may cause skin dryness or cracking.
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Key to abbreviations
NDA = No data available