

Safety Data Sheet

Firestone Building Products Company

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

1.1 Product identifier

Product Name	UltraPly Bonding Adhesive
Synonyms	TPO Bonding Adhesive 5G; UltraPly TPO Bonding Adhesive
SDS Number/Grade	FS-025

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

Relevant identified use(s)	Adhesive
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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
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firestonemsds@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 Regulation (EC) No 1272/2008 (CLP)/REACH 1907/2006 [amended by 453/2010]
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 - Central Nervous System (CNS) through prolonged or repeated exposure via Inhalation
 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.
 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 | 25-35 percent of this product consists of an ingredient of unknown toxicity.

DSD/DPD



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.

- Safety phrases** | R67 - Vapours may cause drowsiness and dizziness.
 | 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

| Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

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

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

3.2 Mixtures

Composition					
Chemical Name	Identifiers	%	LD50/LC50	Classifications According to Regulation/Directive	Comments
Toluene	CAS: 108-88-3 EC Number: 203-625-9	34% TO 44%	Ingestion/Oral-Rat LD50 • 636 mg/kg Inhalation-Rat LC50 • 49 g/m ³ 4 Hour(s) Skin-Rabbit LD50 • 14100 µL/kg	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 OSHA HCS 2012: Flam. Liq. 2; Repr. 2; Acute Tox. 4 (Oral); STOT SE 3: Narc.; Asp. Tox. 1; STOT RE 2 (CNS)	NDA
Solvent-refined light petroleum naphtha	CAS: 64741-84-0 EC Number: 265-086-6	25% TO 35%	NDA	EU DSD/DPD: Annex I: Carc. Cat. 2; R45; Muta. Cat. 2; R46; Xn; R65 EU CLP: Annex VI: Carc. 1B, H350; Muta. 1B, H340; Asp. Tox. 1, H304 OSHA HCS 2012: Data lacking	NDA
Polymers	NDA	5% TO 15%	NDA	EU DSD/DPD: Not Classified - Classification criteria not met EU CLP: Not Classified - Classification criteria not met OSHA HCS 2012: Not Classified - Classification criteria not met	NDA
1,3-Butadiene, 2-chloro-, polymers	CAS: 9010-98-4	< 12%	Ingestion/Oral-Rat LD50 • >40 g/kg	EU DSD/DPD: Not Classified - Classification criteria not met EU CLP: Not Classified - Classification criteria not met OSHA HCS 2012: Not Classified - Classification criteria not met	NDA
Acetone	CAS: 67-64-1 EC Number: 200-662-2	5% TO 10%	Ingestion/Oral-Rat LD50 • 5800 mg/kg Inhalation-Rat LC50 • 50100 mg/m ³	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 OSHA HCS 2012: Flam. Liq. 2; Eye Irrit. 2A, STOT SE 3: Resp. Irrit. & Narc.; Repr. 2	NDA
Xylene	CAS: 1330-20-7 EC Number: 215-535-7	< 1%	Ingestion/Oral-Rat LD50 • 4300 mg/kg Inhalation-Rat LC50 • 5000 ppm 4 Hour(s) Skin-Rabbit LD50 • >1700 mg/kg	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 OSHA HCS 2012: Acute Tox 4 (Skin); Eye Irrit. 2A; Skin Irrit. 2; Repr. 2	NDA
Styrene	CAS: 100-42-5 EC Number: 202-851-5	< 1%	Ingestion/Oral-Rat LD50 • 2650 mg/kg Inhalation-Rat LC50 • 2770 ppm 4 Hour(s)	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 OSHA HCS 2012: Eye Irrit. 2; Acute Tox. 4; Carc. 2	NDA
Magnesium oxide	CAS: 1309-48-4 EC Number: 215-171-9	< 1%	NDA	EU DSD/DPD: Self Classified: Xi, R36/37 EU CLP: Self Classified: Eye Irrit. 2, H319; STOT SE 3, H335 OSHA HCS 2012: Eye Irrit. 2; STOT SE 3: Resp. Irrit.	NDA
Zinc oxide	CAS: 1314-13-2 EC Number: 215-222-5	< 0.3%	NDA	EU DSD/DPD: Annex I: N; R50-53 EU CLP: Annex VI: Aquatic Acute 1, H400; Aquatic Chronic 1, H410 OSHA HCS 2012: Not Classified	NDA

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.
Those substances designated with a "P" may polymerize explosively when heated or involved in a fire.
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 spilled material.
- Emergency Procedures** | 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

- Containment/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

Exposure Limits/Guidelines						
	Result	ACGIH	Canada Ontario	Canada Quebec	China	Europe
Toluene (108-88-3)	STELs	Not established	Not established	Not established	100 mg/m3 STEL	100 ppm STEL; 384 mg/m3 STEL
	TWAs	20 ppm TWA	20 ppm TWA	50 ppm TWAEV; 188 mg/m3 TWAEV	50 mg/m3 TWA	50 ppm TWA; 192 mg/m3 TWA
Exposure Limits/Guidelines (Con't.)						
	Result	Germany DFG	Germany TRGS	NIOSH	OSHA	

Toluene (108-88-3)	Ceilings	200 ppm Peak; 760 mg/m ³ Peak	Not established	Not established	300 ppm Ceiling
	TWAs	Not established	50 ppm TWA AGW (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed, exposure factor 4); 190 mg/m ³ TWA AGW (The risk of damage to the embryo or fetus can be excluded when AGW and BGW values are observed, exposure factor 4)	100 ppm TWA; 375 mg/m ³ TWA	200 ppm TWA
	STELs	Not established	Not established	150 ppm STEL; 560 mg/m ³ STEL	Not established
	MAKs	50 ppm TWA MAK; 190 mg/m ³ TWA MAK	Not established	Not established	Not established

Exposure Control Notations

China

- Toluene (108-88-3): **Skin:** (Skin notation)
- Styrene (100-42-5): **Skin:** (Skin notation)

Canada Quebec

- Toluene (108-88-3): **Skin:** (Skin designation)
- Styrene (100-42-5): **Carcinogens:** (C3 carcinogen - effect detected in animals) | **Skin:** (Skin designation)

ACGIH

- Toluene (108-88-3): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)
- Acetone (67-64-1): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)
- Xylene (1330-20-7): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)
- Magnesium oxide (1309-48-4): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)
- Styrene (100-42-5): **Carcinogens:** (A4 - Not Classifiable as a Human Carcinogen)

Germany TRGS

- Toluene (108-88-3): **Skin:** (skin notation)
- Xylene (1330-20-7): **Skin:** (skin notation (all isomers))

Germany DFG

- Toluene (108-88-3): **Pregnancy:** (no risk to embryo/fetus if exposure limits adhered to) | **Skin:** (skin notation)
- Acetone (67-64-1): **Pregnancy:** (classification not yet possible)
- Xylene (1330-20-7): **Pregnancy:** (classification not yet possible (all isomers)) | **Skin:** (skin notation (all isomers))
- Magnesium oxide (1309-48-4): **Pregnancy:** (no risk to embryo/fetus if exposure limits adhered to (respirable fraction); inhalable fraction)
- Styrene (100-42-5): **Carcinogens:** (Category 5 (low carcinogenic potency)) | **Pregnancy:** (no risk to embryo/fetus if exposure limits adhered to)

Exposure Limits Supplemental

ACGIH

- Toluene (108-88-3): **BEIs:** (0.02 mg/L Medium: blood Time: prior to last shift of workweek Parameter: Toluene; 0.03 mg/L Medium: urine Time: end of shift Parameter: Toluene; 0.3 mg/g creatinine Medium: urine Time: end of shift Parameter: o-Cresol with hydrolysis (background)) | **TLV Basis - Critical Effects:** (female reproductive; pregnancy loss; visual impairment)
- Acetone (67-64-1): **BEIs:** (50 mg/L Medium: urine Time: end of shift Parameter: Acetone (nonspecific)) | **TLV Basis - Critical Effects:** (CNS impairment; eye and upper respiratory tract irritation; hematologic effects) | **Notice of Intended Changes (TLVs):** (200 ppm TWA; 500 ppm STEL; BEI; TLV basis: CNS impairment, upper respiratory tract irritation)
- Xylene (1330-20-7): **BEIs:** (1.5 g/g creatinine Medium: urine Time: end of shift Parameter: Methylhippuric acids) | **TLV Basis - Critical Effects:** (CNS impairment; eye and upper respiratory tract irritation)
- Zinc oxide (1314-13-2): **TLV Basis - Critical Effects:** (metal fume fever)
- Styrene (100-42-5): **BEIs:** (400 mg/g creatinine Medium: urine Time: end of shift Parameter: Mandelic acid plus phenylglyoxylic acid (nonspecific);

0.2 mg/L Medium: venous blood Time: end of shift Parameter: Styrene (semi-quantitative)) | **TLV Basis - Critical Effects:** (CNS impairment; peripheral neuropathy; upper respiratory tract irritation)

8.2 Exposure controls

Engineering Measures/Controls

- | This adhesive 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 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.

Skin/Body

- | Wear appropriate chemical resistant gloves.

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

Material Description			
Physical Form	Liquid	Appearance/Description	Yellow amber liquid with strong aromatic odor.
Color	Yellow amber.	Odor	Aromatic
Odor Threshold	Data lacking		
General Properties			
Boiling Point	55 to 142 F(12.7778 to 61.1111 C)	Melting Point	Data lacking
Decomposition Temperature	Data lacking	pH	Data lacking
Specific Gravity/Relative Density	0.844 Water=1	Water Solubility	Insoluble
Viscosity	Not relevant	Explosive Properties	Explosion hazard.
Oxidizing Properties:	Static hazard.		
Volatility			
Vapor Pressure	9.5 to 185 mmHg (torr) @ 68 F(20 C)	Vapor Density	> 3 Air=1
Evaporation Rate	1.9 to 9.5 n-Butyl Acetate = 1	VOC (Vol.)	633 g/L
Volatiles (Vol.)	76.4 %		
Flammability			
Flash Point	-18 C(-0.4 F)	UEL	7.5 %
LEL	1.1 %	Autoignition	Data lacking
Flammability (solid, gas)	Not relevant.		
Environmental			
Octanol/Water Partition coefficient	Data lacking		

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		
Toluene (34% TO 44%)	108- 88-3	Acute Toxicity: Ingestion/Oral-Rat LD50 • 636 mg/kg; Inhalation-Rat LC50 • 49 g/m ³ 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); <i>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</i>

GHS Properties	Classification
Acute toxicity	EU/CLP • Classification criteria not met OSHA HCS 2012 • Acute Toxicity - Oral 4
Aspiration Hazard	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
Carcinogenicity	EU/CLP • Classification criteria not met OSHA HCS 2012 • Carcinogenicity 2
Germ Cell Mutagenicity	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
Skin corrosion/Irritation	EU/CLP • Skin Irritation 2 OSHA HCS 2012 • Skin Irritation 2
Skin sensitization	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met
STOT-RE	EU/CLP • Specific Target Organ Toxicity Repeated Exposure 2 OSHA HCS 2012 • Specific Target Organ Toxicity Repeated Exposure 2
STOT-SE	EU/CLP • Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects OSHA HCS 2012 • Specific Target Organ Toxicity Single Exposure 3: Narcotic Effects
Toxicity for Reproduction	EU/CLP • H361d - Suspected of damaging the unborn child; Toxic to Reproduction 2 OSHA HCS 2012 • Toxic to Reproduction 2
Respiratory sensitization	EU/CLP • Classification criteria not met OSHA HCS 2012 • Classification criteria not met

Serious eye damage/Irritation	EU/CLP • Eye Irritation 2
	OSHA HCS 2012 • Eye Irritation 2A

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

	CAS	IARC	NTP
Toluene	108-88-3	Group 3-Not Classifiable	Evidence of Carcinogenicity

Reproductive Effects | Repeated and prolonged exposure may cause reproductive effects.

Section 12 - Ecological Information

12.1 Toxicity

UltraPly Bonding Adhesive			Results	Exposure Conditions	Comments
Dosage	Species	Duration			
6.8 mg/L	Water Flea: Daphnia magna	48 Hour(s)	EC50	NDA	Toluene
28 mg/L	Water Flea: Daphnia magna	48 Hour(s)	NOEC	NDA	Toluene
0.00025 mg/L	Fish: Fathead Minnow	96 Hour(s)	LC50	NDA	Hexane

| 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

	14.1 UN number	14.2 UN proper shipping name	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards
DOT	UN1133	Adhesives	3	II	NDA
TDG	UN1133	ADHESIVES	3	II	NDA
IMO/IMDG	UN1133	ADHESIVES	3	II	NDA
ADN	UN1133	ADHESIVES	3	II	NDA
ADR/RID	UN1133	ADHESIVES	3	II	NDA
IATA/ICAO	UN1133	Adhesives	3	II	NDA

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 1000lbs (454kg) 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

State Right To Know				
Component	CAS	MA	NJ	PA
Toluene	108-88-3	Yes	Yes	Yes

Inventory						
Component	CAS	Canada DSL	Canada NDSL	China	EU EINECS	EU ELNICS
Toluene	108-88-3	Yes	No	Yes	Yes	No

Inventory (Con't.)				
Component	CAS	Japan ENCS	Korea KECL	TSCA
Toluene	108-88-3	Yes	Yes	Yes

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
EU - CLP (1272/2008) - Annex VI - Table 3.2 - Concentration Limits		
• Toluene	108-88-3	Not Listed
EU - CLP (1272/2008) - Annex VI - Table 3.2 - Labelling		

• Toluene	108-88-3	F Xn R:11-38-48/20-63-65-67 S:(2)-36/37-46-62
EU - CLP (1272/2008) - Annex VI - Table 3.2 - Notes - Substances and Preparations		
• Toluene	108-88-3	Not Listed
EU - CLP (1272/2008) - Annex VI - Table 3.2 - Safety Phrases		
• Toluene	108-88-3	S:(2)-36/37-46-62

Mexico

Other		
Mexico - Hazard Classifications		
• Toluene	108-88-3	Hazard Class = 3 PG = II UN1294
Mexico - Regulated Substances		
• Toluene	108-88-3	UN1294

United States

Labor		
U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals		
• Toluene	108-88-3	Not Listed
U.S. - OSHA - Specifically Regulated Chemicals		
• Toluene	108-88-3	Not Listed

Environment		
U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants		
• Toluene	108-88-3	
U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities		
• Toluene	108-88-3	1000 lb final RQ; 454 kg final RQ
U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs		
• Toluene	108-88-3	Not Listed
U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs		
• Toluene	108-88-3	Not Listed
U.S. - CERCLA/SARA - Section 313 - Emission Reporting		
• Toluene	108-88-3	1.0 % de minimis concentration
U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing		
• Toluene	108-88-3	Not Listed
U.S. - RCRA (Resource Conservation & Recovery Act) - Hazardous Constituents - Appendix VIII to 40 CFR 261		
• Toluene	108-88-3	waste number U220
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
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U.S. - California - Proposition 65 - Developmental Toxicity

• Toluene	108-88-3	developmental toxicity, initial date 1/1/91
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U.S. - California - Proposition 65 - Reproductive Toxicity - Female

• Toluene	108-88-3	female reproductive toxicity, initial date 8/7/09
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U.S. - California - Proposition 65 - Reproductive Toxicity - Male

• Toluene	108-88-3	Not Listed
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United States - Pennsylvania**Labor****U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List**

• Toluene	108-88-3	
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U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances

• Toluene	108-88-3	Not Listed
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United States - Rhode Island**Labor****U.S. - Rhode Island - Hazardous Substance List**

• Toluene	108-88-3	Toxic (skin); Flammable (skin)
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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
