

# Material Safety Data Sheet

## Mule-Hide TPO BONDING ADHESIVE

Date of Preparation: 09/15/08

Revision: 012

### Section 1 - Chemical Product and Company Identification

**Product/Chemical Name:** Mule-Hide TPO BONDING ADHESIVE  
**General Use:** Contact bonding Adhesive **Chemical Formula:** Mixture  
**Supplier:** Mule-Hide Products Co., Inc. 1195 Prince Hall Dr, Beloit, WI 53511 Phone: 800-786-1492  
**Manufacturer:** Carlisle SynTec Incorporated, 1285 Ritner Highway, Carlisle, PA 17013, Phone: 800-479-6832  
 Emergency Phone Number: CHEMTREC (USA) 800-424-9300

### Section 2 - Hazards Identification

#### ☆☆☆☆☆ Emergency Overview ☆☆☆☆☆

- Warning – Highly flammable liquid and vapor
- Warning – Causes skin irritation
- Warning – Causes serious eye irritation
- Warning – May be harmful if swallowed and enters airways
- Danger – May damage fertility or the unborn child
- Warning – May cause an allergic skin reaction
- Warning – Suspected of causing genetic defects (skin)
- Warning – May cause drowsiness and dizziness
- Warning – May cause damage to organs (liver, kidney, ear) through prolonged or repeated exposure

<b>HMIS</b>	
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<b>R</b>	0
<b>PPE†</b>	
†Sec. 8	

#### Potential Health Effects

**Primary Entry Routes:** Skin contact, skin absorption, eye contact, inhalation, ingestion.

**Acute Effects**

**Inhalation:** Throat irritation on short-term exposure to liquid or vapor. Aspiration into lungs can cause chemical pneumonitis which can be fatal.

**Eye:** Irritation on short-term exposure to liquid or vapor.

**Skin:** Irritation on short-term exposure to liquid or vapor.

**Ingestion:** Ingestion can cause gastrointestinal irritation.

**Carcinogenicity:** IARC, NTP, and OSHA do not list this product as a carcinogen.

**Medical Conditions Aggravated by Long-Term Exposure:** Respiratory symptoms associated with pre-existing lung disorders and pre-existing heart disorders may be aggravated by exposure to this material.

**Chronic Effects:** Overexposure may result in headache, dizziness, fatigue, nausea, possible unconsciousness, even asphyxiation. Moderate irritation of skin, eyes, and mucous membranes of upper respiratory tract on prolonged/repeated contact. Dermatitis and defatting of the skin. Chronic exposure may cause reversible liver and kidney injury.

Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Repeated exposure to Toluene has been associated with high frequency hearing loss based on animal tests.

### Section 3 - Composition / Information on Ingredients

Ingredient Name	CAS Number	% wt or % vol
Toluene	108-88-3	30-60
Heptane	142-82-5	10-30
Acetone	67-64-1	7-13
Xylene	1330-20-7	1-5
Magnesium Oxide	1309-48-4	0.1-1.0
Polychloroprene	9010-98-4	
Phenolic Resin	26022-00-4	

**Hazardous Ingredients:**

Ingredient	OSHA PEL		ACGIH TLV		NIOSH REL		NIOSH IDLH
	TWA	STEL	TWA	STEL	TWA	STEL	
Heptane	500 ppm	500 ppm	400 ppm	500 ppm	85 ppm	440 ppm	750 ppm
Acetone	1000 ppm	1000 ppm	500 ppm	750 ppm	250 ppm	none estab.	2500 ppm
Toluene	200 ppm	150 ppm	20 ppm (skin)	None estab.	100 ppm	150 ppm	500 ppm
Xylene	100 ppm	150 ppm	100 ppm	150 ppm	100 ppm	150 ppm	900 ppm
Magnesium Oxide	15mg/m <sup>3</sup> (as dust)	None estab.	10mg/m <sup>3</sup>	None estab.	10 mg/m <sup>3</sup>	None estab.	750mg/m <sup>3</sup>

## Mule-Hide TPO Bonding Adhesive

### Section 4 - First Aid Measures

**Inhalation:** Remove victim to fresh air and provide oxygen if breathing is difficult. Give artificial respiration if not breathing. Get medical attention immediately.

**Eye Contact:** Immediately flush eyes with running water for at least 15 minutes. Get medical attention.

**Skin Contact:** Immediately flush skin with running water and remove contaminated clothing. Wash exposed area with soap and water. Get medical attention.

**Ingestion:** Do not induce vomiting. Get medical attention immediately.

**Note to Physicians:** This product contains toluene and heptane.

**Special Precautions/Procedures:** Whenever possible, remove the worker from the source of contamination.

### Section 5 - Fire-Fighting Measures

**Flash Point:** -4°F (-20°C)

**Flash Point Method:** Pensky - Martens CC

**Autoignition Temperature:** 433.4°F (223 °C)

**LEL:** 1.0% v/v

**UEL:** 12.8% v/v

**Flammability Classification:** Division 2

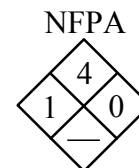
**Extinguishing Media:** In case of fire, use dry chemical, carbon dioxide, or foam. Water may not be effective as an extinguishing agent. Water fog or spray may be used to provide a smothering effect on fire and to cool fire-exposed container and surrounding combustibles. Do not use a solid stream of water because it can scatter and spread the fire.

**Unusual Fire or Explosion Hazards:** Extremely flammable. Store and use away from all sources of heat, flame, or sparks. DO not smoke while applying. Vapors are heavier than air and may travel along ground or may be moved by ventilation and ignited by pilot lights, other flames sparks, heaters, smoking, electrical motors, static discharge, or other ignition sources at location distant from material handling point and flash back. All containers should be grounded when material is transferred.

**Hazardous Combustion Products:** Toxic gases or vapors, such as carbon monoxide, carbon dioxide, or oxides of nitrogen may be released in a fire.

**Fire-Fighting Instructions:** This product contains solvents that are dangerous fire and explosion hazards when exposed to heat or flame. Fire fighters should wear self-contained breathing apparatus and full protective clothing with full-face pieces operated in the positive pressure demand mode.

**Fire-Fighting Equipment:** Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full face piece operated in pressure-demand or positive-pressure mode.



### Section 6 - Accidental Release Measures

**Spill /Leak Procedures:** Remove all sources of ignition. Avoid breathing vapors. Use self-contained breathing apparatus in enclosed area. Ventilate area. Contain and remove with inert absorbent materials and non-sparking tools.

#### Large Spills

**Containment:** For large spills, dike far ahead of liquid spill for later disposal. Do not release into sewers or waterways.

**Cleanup:** Clean-up spill as soon as possible. Collect any excess material with absorbent pads, sand, or other inert non-combustible absorbent materials. Place into appropriate waste containers for later disposal. Comply with all laws and regulations.

**Regulatory Requirements:** Follow applicable OSHA regulations (29 CFR 1910.120).

### Section 7 - Handling and Storage

**Handling Precautions:** Use away from all sources of heat, flame, or sparks. Do not smoke while using. Handling equipment must be grounded to prevent sparking. Handle with non-sparking tools. Wash with soap and water before eating or drinking. Launder contaminated clothing. KEEP OUT OF REACH OF CHILDREN.

**Storage Requirements:** Keep containers cool, dry, and store away from all sources of heat, flame, and sparks. Keep containers tightly closed and store with adequate ventilation. Do not pressurize, cut, weld, or grind the containers or empty containers which may contain residual product and solvent vapors that may ignite explosively.

### Section 8 - Exposure Controls / Personal Protection

**Engineering Controls:** Do not use in enclosed areas without proper explosion-proof ventilation. General and local exhaust ventilation must be sufficient to control vapor concentrations and keep the PEL below 100 ppm.

**Ventilation:** Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs. Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.

**Respiratory Protection:** A NIOSH approved respirator must be used if vapor concentration is 100 ppm or above.

**Protective Clothing/Equipment:** Permeation resistant gloves (that meet ANSI/ISEA 105-2005) recommended. Glasses or goggles recommended. Wear industrial shoes to protect feet from adhesive contact. Wear long sleeves and trousers to protect skin from adhesive contact.

## Mule-Hide TPO Bonding Adhesive

**Safety Stations:** Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.

**Contaminated Equipment:** Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment.

**Comments:** Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

### Section 9 - Physical and Chemical Properties

**Physical State:** Liquid

**Appearance and Odor:** Yellowish liquid with strong hydrocarbon odor.

**Odor Threshold(ppm):** Not available.

**Vapor Pressure:** 37 mm Hg at 86 °F (30 °C)

**Vapor Density (Air=1):** 2.0-3.5

**Density:** 7.09 lbs./gal. (calculated)

**Specific Gravity (H<sub>2</sub>O=1, at 4°C/39°F):** 0.849

**pH:** N/A

**Water Solubility:** Negligible.

**Boiling Point (°C):** 56-110 (133-230°F)

**Freezing/Melting Point(°C):** -91 (-132°F)

**% Volatile:** 78-82

**Evaporation Rate:** 1.9-8.3

**VOC:** 670 g/l

**Flash Point:** -4°F (-20°C)

**Flash Point Method:** Pensky - Martens CC

**Autoignition Temperature:** 433.4°F (223 °C)

**LEL:** 1.0% v/v

**UEL:** 12.8% v/v

### Section 10 - Stability and Reactivity

**Stability:** Stable.

**Possibility of Hazardous Reactions:** Will not occur.

**Chemical Incompatibilities:** Strong oxidizing agents, acids, bases.

**Conditions to Avoid:** Heat, sparks, and flames; ignition sources.

**Hazardous Decomposition Products:** Toxic gases or vapors such as carbon monoxide, carbon dioxide, or oxides of nitrogen may be released in a fire.

### Section 11- Toxicological Information

**Eye Effects:** Irritation at or above PEL of 100 ppm.

**Skin Effects:** Irritation at or above PEL of 100 ppm.

#### Toxicity Data:

**Acute Inhalation Effects:** Product toxicity has not been determined.

The following is component data:

Toluene – Rat, Inhalation, LCLo: 4000ppm/4 hrs

Heptane – Human, inhalation, TCLo: 1000 ppm/6 minutes

Acetone – Rat, inhalation, TC 50 > 20,700 ppm/8 hours

**Acute Oral Effects:** Product toxicity has not been determined.

The following is component data:

Toluene - Rat, oral, LD<sub>50</sub>:5000mg/kg

Acetone – Rat, 5800 mg/kg; Mouse, 3000 mg/kg; Rabbit, 5340 mg/kg

Heptane - Rat, ivn, LD<sub>50</sub>: 222mg/kg

**Carcinogenicity:** Not listed in IARC or NTP.

**Mutagenicity:** Some evidence in animal exposure to Toluene.

**Teratogenicity:** Some evidence in animal exposure to Toluene.

### Section 12 - Ecological Information

This product has not been tested. No data available.

### Section 13 - Disposal Considerations

**Disposal:** Dispose of in accordance with all local, state, and federal regulations.

## Mule-Hide TPO Bonding Adhesive

### Section 14 - Transport Information

#### DOT Transportation Data (49 CFR 172.101):

**Shipping Name:** Adhesives  
**Shipping Symbols:** Flammable

**Hazard Class:** 3

**ID No.:** UN1133

**Packing Group:** II

**Label:** Red flammable liquid  
label required

**Special Provisions (172.102):**  
149, B52, IB2, T4, TP1, TP8

#### Packaging Authorizations

- a) **Exceptions:** 173.150  
b) **Non-bulk Packaging:** 173.173  
c) **Bulk Packaging:** 173.242

#### Quantity Limitations

- a) **Passenger, Aircraft, or Railcar:** 5 L  
b) **Cargo Aircraft Only:** 60 L

#### Vessel Stowage Requirements

- a) **Vessel Stowage:** B  
b) **Other:** N/A

### Section 15 - Regulatory Information

#### EPA Regulations:

RCRA Hazardous Waste Number (40 CFR 261.33): Toluene U220

RCRA Hazardous Waste Classification (40 CFR 261.31): Not Classified

TSCA (Toxic Substances Control Act) Status:

TSCA (United States) – The intentional ingredients of this product are listed.

CERCLA Hazardous Substance (40 CFR 302.4) listed/unlisted specific per RCRA, Sec. 3001; CWA, Sec. 311 (b)(4); CWA, Sec. 307(a), CAA, Sec. 112

CERCLA Reportable Quantity (RQ): Toluene 1,000 lb (454.5 kg); Acetone, 5000 lb. (2272.5 kg); Xylenes (0-, M-,P-Isomers) 100 lb/45.4 kg)

SARA 311/312 Codes:

SARA Toxic Chemical (40 CFR 372.65): Toluene, CAS#108-88-3, 30-60%

SARA EHS (Extremely Hazardous Substance) (40 CFR 355): Not listed

#### OSHA Regulations:

Air Contaminant (29 CFR 1910.1000, Table Z-1, Z-1-A): Not listed

Clean Air Act Data: Toluene HAP Code: XOY

Clean Water Act: Toluene is listed as a priority pollutant. RQ: 1,000 lbs. (454.5 kg)

#### State Regulations:

California Proposition 65: This product contains the following chemical(s) known to the state of California to cause birth defects or other reproductive harm: Toluene.

Delaware Air Quality Management List: Acetone DRQ: 5,000 State: Must be reported to the DRQ.  
Toluene DRQ: 1,000 State: Must be reported to the DRQ.  
Xylene DRQ: 100 State: N

Massachusetts Hazardous Substance Codes: Toluene 108-88-3 2,4,5,6,F7,F8  
Heptane 142-82-5 2,4,5,6  
Acetone 67-64-1 2, 4, 5, 6, F8, F9  
Xylene 1330-20-7 2, 4, F8, F9

Michigan Critical Materials Register: Toluene 108-88-3 Report: -- Class: --  
Xylene 1330-20-7 Report: -- Class:--

Minnesota Hazardous Substance: Toluene Codes: ANO Hazards: skin Carcinogen: No  
Heptane Codes: ANO Hazards: -- Carcinogens: No  
Acetone Codes: AON Hazards: -- Carcinogens: No  
Xylene Codes: ANO Hazards:-- Carcinogens: No

New Jersey RTK Hazardous Substance: Toluene Dot#: 1294 Substance#: 1866 TPQ: -- EHS: No  
Xylenes: Dot# 1307 Substance#: 2014 TPQ: -- EHS: No

New York List of Hazardous Substances: Toluene RQ Air: 1,000 RQ Land: 1 Acutely Hazardous: No  
Xylene RQ Air: 1,000 RQ Land: 1 Acutely Hazardous: No  
Acetone RQ Air: 5,000 RQ Land: 1 Acutely Hazardous: No

Pennsylvania Hazardous Substance Code: Methyl Benzene (Toluene) 108-88-3 Code: E  
Heptane 142-82-5 Code: --

## Mule-Hide TPO Bonding Adhesive

Benzene, Dimethyl (Xylene) 1330-20-7 Code: E  
2 Propanone (Acetone) 67-64-1 Code: E

### Washington Air Contaminant:

TWA (ppm): 100 (Toluene) 750 (Acetone)  
TWA (mg): 375 (Toluene) 1800 (Acetone)  
STEL (ppm): 150 (Toluene) 1000 (Acetone)  
STEL (mg): 560 (Toluene) 2400 (Acetone)  
Ceiling (ppm): None listed  
Ceiling (mg): None listed  
Skin: None listed

**Canadian WHMIS Classification:** Class: B  
Division 2

## Section 16 - Other Information

**Prepared By:** Research & Development

**Revision Notes:** Section 3- Revised limits for Heptane and Toluene.

**Disclaimer:** The information contained in this document is based upon data that was supplied to Mule-Hide by other companies and organizations. No warranty of merchantability or fitness for a particular purpose is expressed or implied regarding the accuracy or completeness of the data and/or information in this material safety data sheet.