CARLISLE'S

SURE-SEAL 90-8-30A BONDING ADHESIVE

Overview

Let Carlisle simplify your next Sure-Seal® EPDM installation with their 90-8-30A Bonding Adhesive. 90-8-30A Bonding Adhesive is a high-strength, solvent-based contact adhesive that allows quick bonding of cured flashings and membranes to various substrates. This adhesive is specially formulated for application with a ½" (13 mm) medium nap roller. This Bonding Adhesive is designed for bonding Sure-White EPDM and Sure-Seal EPDM to various substrates.

Intended Uses

90-8-30A Bonding Adhesive is ideal for bonding cured flashings and membranes to various substrates.

Features and Benefits

- High-strength adhesive that allows quick bonding
- Can be applied with a medium nap roller for ease of application
- Provides excellent adhesion between various substrates and EPDM membrane

Application **

1. The surface, on or against which adhesive is to be applied, shall be clean, smooth, dry, and free of fins, sharp edges, loose and foreign materials, oil and grease. Depressions greater than 1/4" (6 mm) shall be feathered, using epoxy, mortar or other approved patching material. All sharp projections shall be removed by sweeping, blowing or vacuum cleaning.
2. After thorough stirring (minimum 5 minutes), apply Bonding Adhesive to substrate and membrane using a 9" (230 mm) wide 1/2" (13 mm) medium nap roller. Application shall be continuous and uniform avoiding globs or puddles. An open time of 5 to 50 minutes is recommended before assembly. Bonding Adhesive must be allowed to dry until it does not string or stick to a dry finger touch. Any coated area that is rained on should be allowed to dry and then recoated.Do not apply Adhesive to splice areas.
3. Mate the membrane with the adhesive-coated substrate while avoiding wrinkles. Immediately brush down the bonded portion of the sheet with a soft bristle push broom or a clean dry roller applicator to achieve maximum contact. In some applications, swelling of the membrane may occur initially, but this will disappear after several days' exposure. Do not re-broom membrane in an attempt to remove swelling.

* General properties. Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification or specification range for any particular property of this product.

** REVIEW CURRENT CARLISLE SPECIFICATIONS AND DETAILS FOR SPECIFIC APPLICATION REQUIREMENTS.

800-4-SYNTEC • P.O. Box 7000 • Carlisle, PA 17013 • Fax: 717-245-7053 • www.carlisle-syntec.com

Carlisle SynTec

CARLISLE'S

SURE-SEAL 90-8-30A BONDING ADHESIVE

Precautions

1. Review the applicable Material Safety Data Sheet for complete safety information prior to use.
2. Bonding Adhesive is EXTREMELY FLAMMABLE - It contains solvents that are dangerous fire and explosion hazards when exposed to heat, flame or sparks. Store and use away from all sources of heat, flame or sparks. Do not smoke while applying. Do not use in a confined or unventilated area. Vapors are heavier than air and may travel along ground to a distant ignition source and flash back. A red caution label is required when shipping.
3. Avoid breathing vapors. Keep container closed when not in use. Use with adequate ventilation. If inhaled, remove to fresh air. If not breathing, perform artificial respiration. If breathing is difficult, give oxygen. Call a physician immediately. During application, efforts must be made to prevent fumes from entering the building via air ventilation ducts. Do not place open containers or mix adhesive near fresh air intake units. When possible, shut down or seal off the closest units.
4. If swallowed, DO NOT INDUCE VOMITING. Call a physician immediately.
5. Avoid contact with eyes. Safety glasses or goggles are recommended. If splashed in eyes, immediately flush eyes with plenty of clean water for at least 15 minutes. Contact a physician immediately.
6. Avoid contact with skin. Wash hands thoroughly after handling. In case of contact with skin, thoroughly wash affected area with soap and water.

Note: Carlisle's special solvent resistant Hycron gloves are recommended to be worn when using this product to protect hands from irritating ingredients.

7. Do not thin Bonding Adhesive. Thinning will affect performance. Excessively thick or gelled material should be discarded.
8. Job site storage temperatures in excess of 90°F (32°C) may affect product shelf life. Should the Bonding Adhesive be stored at temperatures below 60°F (15°C), restore to room temperature prior to use.
9. These materials are sensitive to atmospheric moisture; heat will accelerate the effect of moisture. Opened containers of Bonding Adhesive should be used within 48 hours. Adhesive will begin to thicken after this point, making it difficult, and eventually impossible, to control adhesive thickness. In hot weather, do not leave sealed containers on roof for prolonged periods of time. In cold weather, keep material at room temperature until ready to use. Stir adhesive occasionally while using.
10. Coverage rates are average and may vary due to conditions on the job site.
11. KEEP OUT OF THE REACH OF CHILDREN.

Mixing

Stir thoroughly until all settled pigments are dispersed and the cement is uniform in color. Minimum five (5) minutes stirring is recommended.

Coverage Rates

Sure-Seal 90-8-30A Bonding Adhesive - 60 square feet (56 sq m) per gallon (finished surface). Porous surfaces and substrates may require more bonding adhesive than the typical coverage rate.

Typical Properties and Characteristics	
Base	Synthetic Rubber
Color	Yellow
Solids	18-22%
Flash Point	-4° F (-20° C) Closed Cup
Average Brookfield Viscosity	3500 Centipoise
VOC	660 grams/liter
Average Net Weight	7.10 lbs./gal (3.2 Kg)
Packaging	5 gallon pail
Shelf Life	1 year

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Carlisle SynTec

Material Safety Data Sheet

Aqua Base™ 120 Bonding Adhesive **MSDS No. 307431**

Date of Preparation: 07/09/07 Revision: 001

Section 1 - Chemical Product and Company Identification

Product/Chemical Name: Aqua Base™ 120 Bonding Adhesive
Chemical Formula:
CAS Number:
Other Designations: Water Based Bonding Adhesive
General Use: Roof Contact Adhesive
Manufacturer: : Carlisle SynTec Incorporated, 1285 Ritner Highway, Carlisle, PA 17013, Phone: 800-4SYNTEC
Emergency Phone Number: CHEMTREC (USA) 800-424-9300

Section 2 - Composition / Information on Ingredients

Ingredient Name	CAS Number	% wt
Vinyl Acetate	108-05-4	<1% wt
Hydrous Aluminum Silicate	1332-58-7	Non Hazardous

Trace Impurities:

	OSHA PEL		ACGIH TLV		NIOSH REL		NIOSH
Ingredient	**TWA**	**STEL**	**TWA**	**STEL**	**TWA**	**STEL**	**IDLH**
Vinyl Acetate	10 ppm 30 mg/m^3	20 ppm 60 mg/m^3	10 ppm 30 mg/m^3	20 ppm 60 mg/m^3	none estab.	none estab.	none estab.
Hydrous Aluminum Silicate	none estab.	none estab.	15 mg/m^3	none estab.	none estab.	none estab.	none estab.

Section 3 - Hazards Identification

☆☆☆☆☆ **Emergency Overview** ☆☆☆☆☆

HMIS	
H	1
F	0
R	0
PPE†	
†Sec. 8	

Potential Health Effects

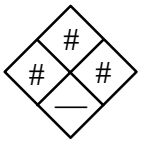
Acute Effects
Inhalation: May cause respiratory irritation.
Eye: May cause eye irritation.
Skin: May cause transient skin irritation.
Ingestion: Unknown
Carcinogenicity: The Vinyl Acetate supplier reports that there is limited evidence of carcinogenicity of the monomer in animals (IARC group 2B)
Medical Conditions Aggravated by Long-Term Exposure: None currently known.
Chronic Effects: None currently known.

Section 4 - First Aid Measures

Inhalation: Remove to fresh air.
Eye Contact: Flush with large amounts of water, lifting upper and lower lids occasionally. Continue for at least 15 minutes. Get medical attention.
Skin Contact: Remove contaminated clothing. Wash affected area with soap and water. Obtain medical attention if irritation persists.
Ingestion: If swallowed, call Poison Control Center, Hospital Emergency Room or Physician immediately.
After first aid, get appropriate in-plant, paramedic, or community medical support.
Note to Physicians: Any treatment that might be required for overexposure should be directed at the control of symptoms and the clinical conditions.

Section 5 - Fire-Fighting Measures

NFPA



Flash Point: Not applicable
Autoignition Temperature: Not applicable
LEL: 3.0% v/v
UEL: 13% v/v
Flammability Classification: Not applicable
Extinguishing Media: Will not burn
Unusual Fire or Explosion Hazards: None known
Hazardous Combustion Products: Will not burn
Fire-Fighting Instructions: No special Fire-Fighting instructions.

Section 6 - Accidental Release Measures

Spill /Leak Procedures: Confine in small area; use absorbent to clean up. Place in container for disposal.
Cleanup: Dispose in accordance with Federal, State and Local Regulations.
Regulatory Requirements:

Section 7 - Handling and Storage

Handling Precautions: Protect from freezing. Close container after each use. Keep away from children.
Storage Requirements: Protect from freezing.
Regulatory Requirements: None

Section 8 - Exposure Controls / Personal Protection

Engineering Controls:
Ventilation: Natural ventilation should be adequate under normal conditions.
Administrative Controls:
Respiratory Protection: Proper selection of respiratory protection depends upon many factors including duration and level of exposure and conditions of use. In general, exposure to organic chemicals such as those contained in this product may not require the use of respiratory protection if used in well ventilated areas. In areas of restricted ventilation a NIOSH approved Organic Vapor Respirator may be required. Under certain conditions, such as spraying, a mechanical prefilter may also be required. In confined areas or in high exposure situations a NIOSH/MSHA approved Air Supplied Respirator may be required. If the TLV's or PEL's listed in Section 2 are exceeded use a properly fitted NIOSH/MSHA approved respirator with an appropriate protection factor. Refer to OSHA 29 CFR 1910.134 "Respiratory Protection", and "Respiratory Protection A Manual and Guideline, American Industrial Hygiene Association".
Eye Protection: Wear safety spectacles with side shields. Wear face shield as necessary when spraying.
Protective Clothing/Equipment: Not likely to be needed.
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: White, mild odor
Odor Threshold:
Vapor Pressure:
Vapor Density (Air=1): Heavier than air
Formula Weight: 8.8 lbs./gal.
Density: N/A
Specific Gravity (H_2O=1, at 4 °C): 1.1
VOC: 7 gpl less water

Water Solubility:
Other Solubilities:
Boiling Range: 162°F (72°C) to 446°F (230°C)
Freezing/Melting Point:
Viscosity:
Refractive Index:
Surface Tension:
% Volatile: 56
Evaporation Rate: Slower than diethyl ether

Section 10 - Stability and Reactivity

Stability: Normally stable.
Polymerization: Hazardous polymerization will not occur.
Chemical Incompatibilities: None know.
Conditions to Avoid: None know.
Hazardous Decomposition Products: Burning, including when heated by welding or cutting, will produce smoke, carbon monoxide and carbon dioxide.

Section 11- Toxicological Information

Toxicity Data:

No information available.

Section 12 - Ecological Information

No information available

Section 13 - Disposal Considerations

Disposal: See Section 6.
Disposal Regulatory Requirements:
Container Cleaning and Disposal:

Section 14 - Transport Information

DOT Transportation Data (49 CFR 172.101):

Shipping Name:
Shipping Symbols:
Hazard Class: Adhesives, Not Regulated
ID No.:
Packing Group: DOT (HM-181)
Label:
Special Provisions (172.102):

Packaging Authorizations
a) Exceptions:
b) Non-bulk Packaging:
c) Bulk Packaging:

Quantity Limitations
a) Passenger, Aircraft, or Railcar:
b) Cargo Aircraft Only:

Vessel Stowage Requirements
a) Vessel Stowage:
b) Other:

Section 15 - Regulatory Information

All ingredients in this product are listed on the U.S. TSCA Inventory.

Ingredient	CAS #	Detail Inventory List Information
Vinyl Acetate	108-05-4	TSCA (8d) DSL
Hydrous Aluminum Silicate	1332-58-7	TSCA NDSL

Detail Inventory List Description

TSCA/Toxic Substances Control Act
(8d) Health and Safety Reporting Rules
DSL/Canadian Domestic Substance List
NDSL/Canadian Non-Domestic Substance List

Section 16 - Other Information

Prepared By: Research and Development
Revision Notes: Added VOC content to Section 9

Additional Hazard Rating Systems:

Disclaimer: The information contained in this document is based upon data that was supplied to Carlisle 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.

Material Safety Data Sheet

Carlisle's Cold Applied Adhesive **MSDS No. 307780**

Date of Preparation: 07/20/2007 Revision: 001

Section 1 - Chemical Product and Company Identification

Product/Chemical Name: Carlisle's Cold Applied Adhesive
Chemical Formula: Asphalt modified silyl terminated polyether
CAS Number: Mixture
Other Designations:
General Use: Roofing Adhesive
Manufacturer: Carlisle SynTec, Incorporated, P.O. Box 7000, 1295 Ritner Highway, Carlisle, PA 17013-0925 (717)-245-7000
Chemtrec (800)-424-9300

Section 2 - Composition / Information on Ingredients

Ingredient Name	CAS Number	% wt *or* % vol
Amino Silane	1760-24-3	Prop
Asphalt	8052-42-4	Prop

Trace Impurities:

	OSHA PEL		ACGIH TLV		NIOSH REL		NIOSH
Ingredient	**TWA**	**STEL**	**TWA**	**STEL**	**TWA**	**STEL**	**IDLH**
Amino Silane	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Asphalt	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Section 3 - Hazards Identification

☆☆☆☆☆ **Emergency Overview** ☆☆☆☆☆

HMIS	
H	1
F	0
R	0
PPE†	B

†Sec. 8

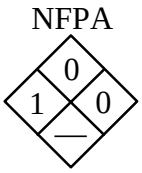
Potential Health Effects

Primary Entry Routes: Eyes and Skin
Acute Effects
Inhalation: Short-term harmful effects are not expected from vapors generated at ambient temperatures.
Eye: Contact can cause severe irritation. Repeated or prolonged direct contact may cause chemical burns to the eyes
Skin: May cause irritation. Repeated or prolonged direct contact may cause dermatitis
Ingestion: May be harmful if ingested
Carcinogenicity: IARC, NTP, and OSHA do not list this product as a carcinogen.
Medical Conditions Aggravated by Long-Term Exposure: Preexisting skin or eye disorders may be aggravated by exposure to this product
Chronic Effects: Repeated or prolonged contact with eyes may cause chemical burns to the eyes.

Section 4 - First Aid Measures

Inhalation: If irritation, headache, nausea, or drowsiness occurs, remove to fresh air. Get medical attention if breathing becomes difficult or respiratory irritation persists.
Eye Contact: Irrigate immediately with plenty of clean water for 15 minutes. Seek medical attention if irritation persists
Skin Contact: Clean product from affected area with ethyl alcohol; then wash with soap and water
Ingestion: Not a likely route of entry. Contact a physician.
After first aid, get appropriate in-plant, paramedic, or community medical support.

Section 5 - Fire-Fighting Measures



Flash Point: Not Established
Flash Point Method: N/A
Autoignition Temperature: Not Established
LEL: N/A
UEL: N/A
Extinguishing Media: Foam, CO_2, dry chemical or water fog.
Unusual Fire or Explosion Hazards: Under some conditions, sulfur compounds in hot asphalt may evolve H_2S or SO_2. Adding water to hot asphalt presents an explosion hazard.
Hazardous Combustion Products: CO, CO_2, H_2S, SO_2
Fire-Fighting Instructions: Do not release runoff from fire control methods to sewers or waterways.
Fire-Fighting Equipment: Because fire may produce toxic thermal decomposition products, wear a self-contained breathing apparatus (SCBA) with a full facepiece operated in pressure-demand or positive-pressure mode. Use of water on asphalt above 100°C (212°F) can cause product to expand with explosive force.

Section 6 - Accidental Release Measures

Spill /Leak Procedures:
Small Spills: Collect spill with absorbent material and dispose of properly.
Large Spills
Containment: For large spills, dike far ahead of liquid spill for later disposal. Do not release into sewers or waterways.
Cleanup: Collect remainder of the spill with absorbent material and place the material into a container approved for waste disposal.
Regulatory Requirements: Follow applicable OSHA regulations (29 CFR 1910.120).

Section 7 - Handling and Storage

Handling Precautions: Use appropriate personal protective equipment. Avoid contact with eye, skin, and clothing.
Storage Requirements: Store in a cool, dry area away from incompatible materials.
Regulatory Requirements: None

Section 8 - Exposure Controls / Personal Protection

Engineering Controls:
Ventilation: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs (Sec. 2). Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.
Administrative Controls:
Respiratory Protection: Not ordinarily required. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a MSHA/NIOSH-approved respirator. Seek professional advice prior to respirator selection and use. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. For emergency or nonroutine operations (cleaning spills, reactor vessels, or storage tanks), wear an SCBA. *Warning! Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.* If respirators are used, OSHA requires a written respiratory protection program that includes at least: medical certification, training, fit-testing, periodic environmental monitoring, maintenance, inspection, cleaning, and convenient, sanitary storage areas.
Protective Clothing/Equipment: Wear chemically protective gloves, boots, long pants and long sleeves to prevent prolonged or repeated skin contact. Wear protective eyeglasses or chemical safety goggles, per OSHA eye- and face-protection regulations (29 CFR 1910.133). Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with contact lenses.
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. This product is only for industrial use. Do not use this product for such applications as food, pharmaceuticals, and cosmetics, which have the possibility of direct ingestion or exposure to the human body.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance and Odor: Dark, brown and thick
Vapor Pressure: N/A
Vapor Density (Air=1): N/A
Density: 11.4 lbs/gallon
Specific Gravity (H_2O=1, at 4 °C): 1.38
Water Solubility: Negligible
Boiling Point: N/A
Viscosity: 25,000-30,000 cps
% Volatile: N/A
Evaporation Rate: N/A
VOC (gpl): Negligible

Section 10 - Stability and Reactivity

Stability: Carlisle's Cold Applied Adhesive is stable at room temperature in closed containers under normal storage and handling conditions.
Polymerization: Hazardous polymerization will not occur.
Chemical Incompatibilities: Material polymerizes with contact to water and moisture. Avoid strong oxidants
Conditions to Avoid: N/A
Hazardous Decomposition Products: Thermal decomposition may produce toxic fumes of CO and/or CO_2. Under some conditions, sulfur compounds in hot asphalt may evolve H_2S or SO_2.

Section 11- Toxicological Information

Toxicity Data:*

Eye Effects:
Amino Silane-Severe irritation, causes corneal injury

Acute Dermal Effects:
Amino Silane
LD_{50}: >2,000 mg/kg

Acute Inhalation Effects:
Human, inhalation, TC_{Lo}: N/A

Acute Oral Effects:
Amino Silane
Rat, oral, LD_{50}: >2,000 mg/kg
Asphalt
Rat, oral, LD_{50}: >5,000 mg/kg

Section 12 - Ecological Information

Ecotoxicity: Not Established
Environmental Fate: Not Established
Environmental Degradation: Not Established
Soil Absorption/Mobility: Not Established

Section 13 - Disposal Considerations

Disposal: If this product becomes a waste, it would not be hazardous by RCRA criteria. Place in an appropriate disposal facility in compliance with federal, state and local regulation. This product becomes a firm, synthetic rubber when cured.
Disposal Regulatory Requirements:
Container Cleaning and Disposal: Follow all local, state and federal guidelines.

Section 14 - Transport Information

DOT Transportation Data (49 CFR 172.101):

Shipping Name: Not Regulated Adhesive
Shipping Symbols: N/A
Hazard Class: Not Regulated
ID No.: N/A
Packing Group: N/A
Label: N/A
Special Provisions (172.102):N/A

Packaging Authorizations
a) Exceptions: 173. N/A
b) Non-bulk Packaging: 173.N/A
c) Bulk Packaging: 173.N/A

Quantity Limitations
a) Passenger, Aircraft, or Railcar: N/A
b) Cargo Aircraft Only: N/A

Vessel Stowage Requirements
a) Vessel Stowage: N/A
b) Other: N/A

Section 15 - Regulatory Information

EPA Regulations:

RCRA Hazardous Waste Number: Not listed (40 CFR 261.33)
RCRA Hazardous Waste Classification (40 CFR 261.): N/A
CERCLA Hazardous Substance (40 CFR 302.4) unlisted specific per RCRA, Sec. 3001; CWA, Sec. 311 (b)(4); CWA, Sec. 307(a), CAA, Sec. 112
CERCLA Reportable Quantity (RQ), N/A
SARA 311/312 Codes: Immediate (Acute) Health Hazard. (Possible Irritant)
SARA Toxic Chemical (40 CFR 372.65): Not listed
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
OSHA Specifically Regulated Substance (29CFR 1910.)N/A
OSHA (29 CFR 1910.1200): Irritant

State Regulations:

California Proposition 65: This product contains no levels of listed substances, which the state of California has found to cause cancer, birth defects, or other reproductive harm.

Section 16 - Other Information

Prepared By: Research and Development
Revision Notes: Added VOC content to section 9.

Additional Hazard Rating Systems:

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Firestone Building Products Company
Material Safety Data Sheet

SECTION 1: PRODUCT IDENTIFICATION

Product Name:	Water-Based Bonding Adhesive
Chemical Name / Synonym:	Proprietary Emulsion
Chemical Family:	Mixture
24-Hour Emergency Phone:	(800) 424-9300 CHEMTREC
Manufacturer's Name:	Firestone Building Products Company
Manufacturer's Address:	310 East 96th Street, Indianapolis, IN 46240
NFPA Hazard Rating:	Health 0, Flammability 1, Reactivity 0
HMIS Hazard Rating:	Health 1, Flammability 1, Reactivity 0

SECTION 2: CHEMICAL COMPOSITION

Chemical Name:	Common Name:	CAS #:	% (by wt)	Exposure Limits:
Antimony Pentoxide	Stibic Anhydride	1314-60-9	1.6	PEL 0.5 mg/m^3 (as Sb) TLV 0.5 mg/m^3 (as Sb)
Mineral Spirits	Stoddard Solvent	8052-41-3	7	PEL 500 ppm TLV 100 ppm
Nonhazardous as per 29 CFR 1910.1200.	None	EPA TSCA Registered	>91.4	None Established

SECTION 3: HAZARD IDENTIFICATION

Primary Route of Exposure:	Inhalation and ingestion
Signs and Symptoms of Exposure:	No health hazards have been identified for this product. Antimony compounds may cause local irritation to the skin and mucous membranes. Antimony Pentoxide may be toxic through an intraperitoneal route into the body. Antimony Pentoxide (intraperitoneal) LD_{50} = 4 mg/kg, rats.
Medical Conditions Aggravated by Exposure:	None known.
Chronic Effects:	No known adverse effects.
Carcinogenicity:	None.

SECTION 4: FIRST AID MEASURES

First Aid Procedures:	For eyes, flush with large amounts of water, lifting upper and lower lids occasionally, get medical attention. For skin contact, wash affected area thoroughly with soap and water. For inhalation, remove to fresh uncontaminated air. In case of accidental ingestion, do not induce vomiting. Get medical attention and advise the physician of the nature of the material.

SECTION 5: FIRE FIGHTING PROCEDURES

Suitable Extinguishing Media:	For the dried product, Water spray, Alcohol foam, or Carbon Dioxide.
Hazardous Combustion Products:	Thermal decomposition products may include hydrocarbons,

	oxides of carbon, nitrogen and sulfur, acid gases (HCl and HBr).
Recommended Fire Fighting Procedures:	Wear impermeable protective clothing and self-contained breathing apparatus.
Unusual Fire and Explosion Hazards:	None

SECTION 6: PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to Be Taken in Case Material is Released or Spilled:	Absorb liquid on inert material. Transfer to secured container for proper disposal.
Precautions to Be Taken in Handling and Storing:	Store between 45°F and 90°F. Keep containers tightly sealed.

SECTION 7: EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation:	Use in a well ventilated area.
Respiratory Protection:	No special requirements are expected under normal conditions and use.
Eye Protection:	The use of safety glasses or chemical splash goggles when pouring, mixing or applying this material may be warranted.
Skin Protection:	The use of chemical resistant gloves when pouring, mixing or applying this material may be warranted.
Other:	Impervious clothing and boots if appropriate.
Work / Hygienic Practices:	Wash exposed skin prior to eating, drinking or smoking and at the end of each shift. Wash contaminated clothing prior to reuse.

SECTION 8: PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor:	Grey colored liquid, slight odor.		
Flash Point:	170º F	Lower Explosive Limit:	None
Method Used:	Unknown	Upper Explosive Limit:	None
Evaporation Rate:	Not Applicable	Boiling Point:	212° F
pH (undiluted product):	7.5 - 8.5	Melting Point:	Not Applicable
Solubility in Water:	Dilutable	Specific Gravity:	1.03
Vapor Density:	Equal to Water	Percent Volatile:	43% (wt) at 70° F
Vapor Pressure:	Equal to Water		

SECTION 9: STABILITY AND REACTIVITY

Thermal Stability:	Stable
Hazardous Polymerization:	Will not occur
Conditions to Avoid:	Do not allow this product to freeze. This product is incompatible with strong oxidizing agents, acids, and bases.

SECTION 10: TRANSPORTATION

Regulatory Agency:	Not Applicable
Proper Shipping Name:	Not Applicable
Hazard Classification:	Not Applicable
Identification Number:	Not Applicable
Labels Required:	Not Applicable
Other Requirements:	Not Applicable

SECTION 11: MISCELLANEOUS INFORMATION

Additional Comments:	VOC content is 118 gm/l.
Date of Previous MSDS:	September 1, 2004
Changes Since Previous MSDS:	Address change in section 1; hazard information in section 3.
Telephone Number for Additional Information:	(317) 575-7190

DISCLAIMER

Firestone Building Products Company
Material Safety Data Sheet

SECTION 1: PRODUCT IDENTIFICATION

Product Name:	Bonding Adhesive BA-2004
Chemical Name/Synonym:	Polychloroprene Based Adhesive, CAS # 9010-98-4 (Base Polymer)
Chemical Family:	Polychloroprene
24-Hour Emergency Phone:	(800) 424-9300 CHEMTREC
Manufacturer's Name:	Firestone Building Products Company
Manufacturer's Address:	310 East 96th Street, Indianapolis, IN 46240
NFPA Hazard Rating:	Health 2, Flammability 3, Reactivity 0
HMIS Hazard Rating:	Health 2, Flammability 3, Reactivity 0

SECTION 2: CHEMICAL COMPOSITION

Chemical Name:	Common Name:	CAS #:	% (by wt)	Exposure Limits:
Acetone	Methyl Ketone	67-64-1	<12	OSHA PEL 1000 ppm ACGIH TLV 500 ppm ACGIH STEL 750 ppm
Solvent, Textile Spirits (Primarily Hexane)	None	64741-84-0	<35	None Established
Toluene	Toluol	108-88-3	<34	OSHA PEL 200 ppm OSHA CEIL 300 ppm ACGIH TLV 50 ppm ACGIH SKIN
Xylene	Xylol	1330-20-7	<1	OSHA PEL 100 ppm ACGIH TLV 100 ppm ACGIH STEL 150 ppm
Nonhazardous as per 29 CFR 1910.1200.	None	None	>18	None Established

SECTION 3: HAZARD IDENTIFICATION

Primary Route of Exposure:	Skin Absorption, Inhalation
Signs and Symptoms of Exposure:	Eye contact may cause severe eye irritation, redness, tearing and blurred vision. Prolonged or repeated skin contact may cause irritation, dermatitis and drying of the skin. Absorption through intact skin may contribute to an individual's overall exposure. Inhalation may cause respiratory system irritation and central nervous system depression (Narcosis) characterized by headache, dizziness, muscular weakness and fatigue. Inhalation of Toluene vapors above 200 ppm may result in impairment of coordination, increased reaction time and a bad taste in the mouth. May cause unconsciousness if exposure is excessive. Acetone LC_{50}: 16,000 ppm/4hr, rat; Acetone LD_{50}: 9.8 g/kg, rat; Toluene LC_{50}: 8,000 ppm/4hr, rat; Toluene LD_{50}: 5 g/kg, rat; Xylene LC_{50}: 5,000 ppm/4hr, rat; Xylene LD_{50}: 4.3 g/kg, rat.
Medical Conditions Aggravated by Exposure:	Exposure to this product may aggravate pre-existing skin and respiratory diseases. Individuals with neurological diseases should avoid exposure to hexane.

Chronic Effects:	May cause kidney and spleen damage. May cause brain cell and neuromuscular damage bases upon animal studies.
Carcinogenicity:	None

SECTION 4: FIRST AID MEASURES

First Aid Procedures:	If this material contacts the eyes, hold eyelids open and flush immediately with a gentle stream of water for at least 15 minutes, preferably at an eyewash fountain. Get medical attention. In case of skin contact, clean with rubbing alcohol first, followed immediately by washing affected area with soap and water. In case of inhalation, remove to fresh uncontaminated air. Administer oxygen if breathing is labored. Give artificial respiration if breathing has stopped. Get medical attention immediately if oxygen or artificial respiration are administered. In case of accidental ingestion, do not induce vomiting. Get medical attention and advise the physician of the nature of the material.

SECTION 5: FIRE FIGHTING PROCEDURES

Suitable Extinguishing Media:	Carbon dioxide, dry chemical, alcohol foam or water fog. Do not use a direct stream of water. Product will float and can be reignited on the surface of the water.
Hazardous Combustion Products:	Carbon dioxide and carbon monoxide, oxides of nitrogen, hydrogen chloride, various hydrocarbons, phenols, acrid smoke and irritating fumes.
Recommended Fire Fighting Procedures:	Wear impermeable protective clothing and self-contained breathing apparatus. Toxic fumes and vapors may be evolved.
Unusual Fire and Explosion Hazards:	Heat builds up pressure in closed containers. Cool with water stream.

SECTION 6: PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to Be Taken in Case Material is Released or Spilled:	Remove ignition sources. Absorb on inert material. Use non-sparking tools. Place in secure containers for disposal.
Precautions to Be Taken in Handling and Storing:	Keep away from heat, sparks, and open flames. Keep containers closed. Vapors of this material are heavier than air and will collect in low or confined areas. Containers, even those that have been emptied, can contain explosive vapors. Do not cut, drill, grind, weld or perform similar operations near containers. Static electricity may accumulate and create a fire hazard. Ground fixed equipment. Bond and ground all transfer containers and equipment.

SECTION 7: EXPOSURE CONTROLS / PERSONAL PROTECTION

Ventilation:	Use in a well-ventilated location.
Respiratory Protection:	If personal exposure concentrations cannot be maintained below the appropriate exposure limits using engineering controls, a NIOSH approved organic vapor air purifying respirator may be appropriate based on employer-determined exposure levels. Air supplied or SCBA respirators may be required when the measured chemical concentration exceeds the capacity of the air purifying respirator or when personal exposure levels are unknown.
Eye Protection:	Safety glasses with side shields may be needed as determined by end-

	user.
Skin Protection:	Leather or cotton gloves may be required for direct handling.
Other:	Not required.
Work / Hygienic Practices:	Wash exposed skin prior to eating, drinking and smoking and at the end of each shift. Wash contaminated clothing prior to reuse.

SECTION 8: PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor:	Yellow Amber Liquid / Strong Aromatic Odor		
Flash Point:	-18° C	Lower Explosive Limit:	1.0%
Method Used:	Tagliabue closed tester	Upper Explosive Limit:	12.8%
Evaporation Rate:	1.9-9.5 (Ether=1)	Boiling Point:	131-288° F
pH (undiluted product):	Unknown	Melting Point:	Unknown
Solubility in Water:	Insoluble	Specific Gravity:	0.844 (Water=1)
Vapor Density:	2-4 (Air=1)	Percent Volatile:	75.7%
Vapor Pressure:	9.5-185 mm Hg @ 20° C		

SECTION 9: STABILITY AND REACTIVITY

Thermal Stability:	Stable
Hazardous Polymerization:	Will not occur
Conditions to Avoid:	Avoid flames, sparks or other sources of ignition. Incompatible with acids, alkalies and strong oxidizing agents.

SECTION 10: TRANSPORTATION

Regulatory Agency:	U.S.A., DOT, IMO
Proper Shipping Name:	Adhesives
Hazard Classification:	3
Identification Number:	UN1133
Packaging Group:	II
Labels Required:	Flammable Liquid
Other Requirements:	49 CFR 172.101Adhesives, UN1133, IMDG Class 3.2, Pg. 3174,Flash Point -18° C

SECTION 11: MISCELLANEOUS INFORMATION

Additional Comments:	None
Date of Previous MSDS:	January 17, 2003
Changes Since Previous MSDS:	Address change in section 1; TLV change for acetone in section 2.
Telephone Number for Additional Information:	(317) 575-7190

DISCLAIMER

The information contained herein is based on data considered accurate which has been obtained from other

companies and organizations. However, no warranty or representation is expressed or implied that the information, is accurate, complete or representative. Firestone Building Products Company, a subsidiary of Bridgestone Americas Holding, Inc. assumes no responsibility for injury to the buyer, the buyer's employees, or any third persons, if reasonable safety procedures are not followed. Additionally, Firestone Building Products Company assumes no responsibility for injury to buyer, the buyer's employees, or any third persons caused by abnormal use of this material, even if reasonable safety procedures are followed.

Firestone
BUILDING PRODUCTS COMPANY

Bonding Adhesive BA-2004

Firestone Item Number: W563587051

PRODUCT DATA

Property	Minimum Performance
Base:	Polychloroprene Rubber
Color:	Yellow
Solvents:	Toluene, Hexane, Acetone
Solids:	23% (min.)
Viscosity:	2300 - 3000 Centipoise, R.V.F. Brookfield, #3 Spindle @ 10 RPM
Weight:	7.05 ± .35 lb/gal (.845 kg ± .042 kg/L)
Specific Gravity:	.845 + 5%
Flash Point:	Less than 0° F (-17.8° C)
Volatile Organic Compound (V.O.C.) Content:	4.9 lb/gal. (581 g/L)

DESCRIPTION:
Bonding Adhesive BA-2004 is a solvent based contact adhesive designed for bonding RubberGard EPDM or FormFlash membranes to wood, metal, masonry and other acceptable substrates.

METHOD OF APPLICATION:
Surfaces on or against which BA-2004 is to be applied must be clean, smooth, dry, free of sharp edges, loose and foreign materials, oil, grease, and other contaminants. Sweep the mating surface of the membrane with a stiff broom to remove excess dusting agent, if present, or other contaminants from the mating surface.

Stir the adhesive thoroughly before and during use, achieving a uniform mix with no sediment on the bottom and no marbling evident. Apply Bonding Adhesive at about the same time to both the exposed underside of the sheet and the substrate to which it will be adhered so as to allow approximately the same flash-off time. Bonding Adhesive may be applied with a solvent-resistant paint roller or a spray rig designed to apply adhesives. Apply by rolling the adhesive on to both mating surfaces. Bonding Adhesive should be applied evenly so as to avoid globs. As an option, spray on Bonding Adhesive and then roll out uniformly and evenly with a solvent-resistant paint roller. **Care must be taken not to apply Bonding Adhesive over any area that is to be later cleaned and spliced to another sheet or flashing.**

Allow Bonding Adhesive to flash off until tacky. Touch the Bonding Adhesive surface with a clean, dry finger to be certain that the adhesive does not stick or string. While pushing straight down to check for stringing, also push forward on the adhesive at an angle to ensure that the adhesive is ready throughout its thickness. If either motion exposes wet or stringy adhesive when the finger is lifted, then it is not ready for mating. Flash off time will vary depending on ambient air conditions.

Starting at the fold, roll the previously coated portion of the sheet into the coated substrate slowly and evenly so as to minimize wrinkles. To ensure proper contact, compress the bonded half of the sheet to the substrate with a stiff push broom using heavy pressure.

STORAGE:
1. Store in original unopened containers at temperatures between 60° F (15.6° C) and 80° F (26.7° C) until ready for use.

SHELF LIFE:
1. Shelf life of one year can be expected if stored in original sealed container at temperatures between
2. 60° F (15.6° C) and 80° F (26.7° C). If exposed to lower temperatures, restore to room temperature prior to use.
2. Shelf life will be shortened if exposed to elevated temperatures.
3. Rotate stock to insure stored material will not go beyond the shelf life of one year.

COVERAGE RATE:
A coverage rate of 45-60 square feet per gallon (1.10 – 1.47 square meters per liter) may be obtained depending on the substrate. Some insulation surfaces are more uneven and porous and will result in a lower coverage rate while smooth, non-porous facers may result in higher coverage rates. Rates are based on roller application to both mating surfaces. When sprayed and back-rolled, the rate may be slightly higher than when rolled only.

Firestone
BUILDING PRODUCTS COMPANY

Bonding Adhesive BA-2004

FM APPROVED

Subject to the conditions of Approval when installed as described in the current edition of the FM Approval Guide

CLASSIFIED C UL US

Cements and Coatings for Roofing Systems
As to an External Fire Exposure Only
61P2
See UL Directory of Products
Certified for Canada
And UL Roofing Materials
And Systems Directory
R9516

PRECAUTIONARY DATA:

1. Flammable. Keep away from fire and open flame and other possible ignition sources during storage and use. Do not smoke when using.
2. Red caution labels required when shipping.
3. Avoid prolonged contact with skin. Gloves should be worn (OSHA approved).
4. Use only in well ventilated areas.
5. Do not contaminate with foreign materials.
6. For professional use only.
7. Review Material Safety Data Sheet specified on the Bonding Adhesive container label.
8. Keep out of reach of children.
9. Thinning is not allowed.
10. Recommended cleaner is Toluene (while fluid).
11. Refer to Technical Information Sheet titled "Recommended Guidelines for Application of Roofing Adhesives to an Occupied Building" prior to installing adhesives.

PHYSICAL CHARACTERISTICS AFTER APPLICATION:

1. Excellent resistance to aging.
2. Good resistance to heat, cold, and water.
3. Excellent tack time for versatility of installation.

LEED INFORMATION:

Post Consumer Recycled Content: 0%
Post Industrial Recycled Content: 0%
Manufacturing Location: South Bend, IN

Firestone Building Products Company
A Division of BFS Diversified Products, LLC
310 E. 96th Street, Indianapolis, IN 46240
Sales: (800) 428-4442 • Technical (800) 428-4511
www.firestonebpco.com

Material Safety Data Sheet

SURE-FLEX PVC BONDING ADHESIVE **MSDS No. 307471**

Date of Preparation: 07/23/07 Revision: 004

Section 1 - Chemical Product and Company Identification

Product/Chemical Name: Sure-Flex PVC Bonding Adhesive
Chemical Formula: Nitrile Adhesive Mixture
General Use: Contact Bonding Adhesive
Manufacturer: Carlisle SynTec Incorporated, 1285 Ritner Highway, Carlisle, PA, 17013, Phone: 800-479-6832
Emergency Phone Number: CHEMTREC(USA): 800-424-9300

Section 2 - Composition / Information on Ingredients

Ingredient Name	CAS Number	% wt *or* % vol
Methyl Ethyl Ketone	78-93-3	40 – 50
Toluene	108-88-3	25 - 35

Hazardous Ingredients:

	OSHA PEL		ACGIH TLV		NIOSH REL		NIOSH
Ingredient	**TWA**	**STEL**	**TWA**	**STEL**	**TWA**	**STEL**	**IDLH**
Methyl Ethyl Ketone	200 ppm	300 ppm	200 ppm	300 ppm	200 ppm	300 ppm	3000 ppm
Toluene	200 ppm	150 ppm	50 ppm	none estab.	100 ppm	150 ppm	500 ppm

Section 3 - Hazards Identification

☆☆☆☆☆ **Emergency Overview** ☆☆☆☆☆

HMIS
H 1
F 4
R 0
PPE†
†Sec. 8

Potential Health Effects

Emergency and Hazards Overview:

Mixture contains flammable components and the vapors may ignite explosively. Vapors are heavier than air and may travel to distant sources of ignition and flash back. Harmful if swallowed or inhaled. Overexposure to vapors may cause dizziness, headache or central nervous depression. May cause irritation to the eyes, skin and respiratory tract.

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

Acute Effects

Inhalation: May cause irritation of the nose, throat and respiratory tract. Excessive inhalation may result in headache, dizziness, fatigue, nausea, loss of consciousness, and even death.

Eye: May cause eye irritation on short-term exposure to liquid or vapor.

Skin: May cause skin irritation on short-term exposure to liquid or vapor. Solvents may be absorbed through the skin in toxic amounts.

Ingestion: Ingestion may cause symptoms similar to those of inhalation. The oral toxicity is estimated to be low, therefore not expected to be harmful in small amounts. Aspiration of material into lungs can cause chemical pneumonitis, which can be fatal.

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. Prolonged skin contact with this product may defat skin leading to irritation or dermatitis resulting in itching, redness and rash.

Chronic Effects: Overexposure may result in headache, dizziness, fatigue, nausea and loss of consciousness. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Chronic exposure may cause reversible kidney and liver injury.

Section 4 - First Aid Measures

Inhalation: Move 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. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Note to Physicians: This product contains methyl ethyl ketone (MEK) and toluene.

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

Section 5 - Fire-Fighting Measures

Flash Point: 23.3°C (74°F)

Flash Point Method: SETA

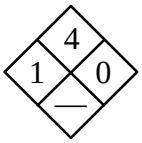
Autoignition Temperature: 516°C (961°F)

LEL: 2.0% by volume

UEL: 11.5% by volume

Flammability Classification: Division 2

NFPA



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 containers 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 locations 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 or carbon dioxide, various hydrocarbons, nitrogen compounds, and hydrogen cyanide 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 a self-contained breathing apparatus and full protective clothing with a full-face piece 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.

Personnel Safeguards: Immediately evacuate all non-essential personnel to safe areas. Emergency responders should wear proper protective gear before entering the affected area. Observe all precautions noted above.

Regulatory Notifications: Waste of this product is defined as hazardous according to U.S. EPA. Spill reporting requirements and reportable quantities vary by region. Consult all applicable state and local regulations.

Containment and Cleanup: Remove all sources of ignition. Do not use metal shovels or other tools that could create sparks. Prevent liquids from entering sewers, drains or waterways by diking with sand or earth. Absorb with vermiculite or other absorbent material and remove for disposal.

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 that 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 TLV/TWA. Use explosion proof ventilation equipment. Take care not to draw vapors into non-explosion proof or spark generating equipment.

Ventilation: Provide general or local exhaust ventilation systems to maintain airborne concentrations below OSHA PELs (Sec. 2). Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.

Respiratory Protection: Provide adequate ventilation to maintain vapors below TLV/TWA. If vapor levels are exceeded, use NIOSH approved respirator, both during and immediately after application, until vapor levels are below limits.

Protective Clothing/Equipment: Hycron, Neoprene, Nitrile or equivalent solvent permeation resistant gloves REQUIRED. Protective glasses or goggles recommended. Industrial boots to protect feet from adhesive contact. Long sleeves, long trousers to protect skin from adhesive contact. Protective skin creams or emollients useful.

Safety Stations: Source of clean water should be available in the work area for flushing skin and eyes.

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. KEEP OUT OF REACH OF CHILDREN!

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance and Odor: Pale yellow liquid with strong ketone odor.
Odor Threshold: Not available
Vapor Pressure: 70.0mm Hg at 20°C
Vapor Density (Air=1): 2.4
Specific Gravity (H_2O=1, at 4 °C): 0.883
pH: N/A

Water Solubility: Negligible
Boiling Point: 79.6^{0}C (175^{o}F)
Freezing/Melting Point: 85.9^{0}C
% Volatile: 70-80
Evaporation Rate: 3.8 (nBuAc=1)
VOC: 600 – 700 gpl

Section 10 - Stability and Reactivity

Stability: Stable under normal conditions.
Polymerization: Will not occur.
Chemical Incompatibilities: Strong oxidizing agents, strong acids, or bases, alkali metals and halogens.
Conditions to Avoid: Heat, sparks, flames and other sources of ignition.
Hazardous Decomposition Products: Toxic gases or vapors such as carbon monoxide and carbon dioxide, may be released in a fire. Contact with strong oxidizing agents may cause fire and explosions.

Section 11- Toxicological Information

Toxicity Data:

Eye Effects: Irritating

Skin Effects: Irritating

Acute Inhalation Effects: Product toxicity has not been determined.
Following are the component data:
Methyl ethyl ketone: Rat, inhalation, LC_{50}: > 8000 ppm / 8 hr
Toluene: Rat > 26,700 ppm 1 hr; Mouse 400 ppm 24 hr

Acute Oral Effects: Product toxicity has not been determined.
Following are the component data:
Methyl ethyl ketone: Rat, oral, LD_{50}: 2.9 gm/kg
Toluene: Rat 5,000 mg/kg

Acute Dermal Effects: Product toxicity has not been determined.
Following are the component data:
Methyl ethyl ketone: Rabbit, dermal, LD_{50}: > 5 mL/kg

Chronic Effects: May cause skin sensitization in some people.
Carcinogenicity: Not listed in IARC or NTP
Mutagenicity: Some evidence in animal exposure to Toluene.
Teratogenicity: Some evidence in animal exposure to Toluene.
Reproductive Toxicity: Effects have been observed in rats exposed to >1000 ppm MEK vapors.

Section 12 - Ecological Information

Ecotoxicity: Not known
Environmental Fate: Not known
Environmental Degradation: Not known
Soil Absorption/Mobility: Not known

Section 13 - Disposal Considerations

Disposal: Dispose of in accordance with all local, state, and federal regulations.
Disposal Regulatory Requirements: Consult all regulations (federal, state, provincial, local) or a qualified waste disposal firm when characterizing waste for disposal.
Container Cleaning and Disposal: Dispose of waste in accordance with all applicable regulations. Waste which results from the clean up of spilled product, absorbed by a noncombustible absorbing media, would not be considered a hazardous waste once the methyl ethyl ketone and toluene have evaporated.

Section 14 - Transport Information

DOT Transportation Data (49 CFR 172.101):

Shipping Name: Adhesives, 3, UN 1133, PGII
Shipping Symbols: Flammable
Hazard Class: 3
ID No.: UN1133
Packing Group: II
Label: red caution 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: 5L
b) Cargo Aircraft Only: 60L

Vessel Stowage Requirements
a) Vessel Stowage: B
b) Other: ---

Section 15 - Regulatory Information

EPA Regulations:

RCRA Hazardous Waste Number (40 CFR 261.33): Methyl ethyl ketone, CAS #78-93-3, RCRA Code U159

RCRA Hazardous Waste Classification (40 CFR 261.31): F005 (methyl ethyl ketone) and F005 (Toluene).

RCRA Groundwater List:

Chemical Name	CAS #	Methods	PQL
Methyl ethyl ketone	78-93-3	8015, 8240	10, 100

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: Methyl ethyl ketone, 78-93-3, RQ 5000 lb
Toluene 1,000 lb (454.5 kg)

SARA 311/312 Codes:
SARA Toxic Chemical (40 CFR 372.65): Methyl Ethyl Ketone, CAS#78-93-3, 40 – 50%

Toluene, CAS#108-88-3, 25-35%

SARA EHS (Extremely Hazardous Substance) (40 CFR 355): Not listed, Threshold Planning Quantity (TPQ)

OSHA Regulations:

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

Clean Water Act Hazardous Substances: none listed

Clean Air Act SOCMI Chemicals: Methyl ethyl ketone, CAS #78-93-3, Toluene, CAS #108-88-3

Clean Air Act Hazardous Air Pollutants: Methyl ethyl ketone, CAS #78-93-3, Toluene, CAS 108-88-3

Marine Pollutants: none listed

OSHA, IARC, NTP Carcinogens: none listed

State Regulations:

California Proposition 65 Chemicals: 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:

Methyl ethyl ketone	CAS #78-93-3	DRQ: 5000	State? No
Toluene	CAS #108-88-3	DRQ: 1000	State? Yes

Florida Toxic Substances List:

Methyl ethyl ketone	CAS #78-93-3
Toluene	CAS #108-88-3

Massachusetts Hazardous Substances List:

Chemical Name	CAS #	Code
Methyl ethyl ketone	78-93-3	2, 4, 5, 6, F8, F9
Toluene	108-88-3	2, 4, 5, 6, F7, F8

Michigan Critical Materials Register: Toluene 108-88-3 Report: -- Class: --

Minnesota Hazardous Substances List:

Chemical Name	CAS #	Codes	Hazards	Carcinogen
Methyl ethyl ketone	78-93-3	ANO	- -	No
Toluene:	108-88-3	ANO	skin	No

New Jersey RTK Hazardous Substance List:

Chemical Name	CAS #	Substance #	DOT #	TPQ	EHS
Methyl ethyl ketone	78-93-3	1258	1193	- -	
Toluene:	108-88-3	1866	1294	---	

New York List of Hazardous Substances:

Chemical Name	CAS #	RQ Air	RQ Land	Note
Methyl ethyl ketone	78-93-3	5000	1	- -
Toluene	108-88-3	1000	1	- -

Pennsylvania Hazardous Substances List:

Chemical Name	CAS #	Code

2-Butanone	78-93-3	E	Code E = Environmental hazard
Methyl benzene	108-88-3	E	

Washington Permissible Exposure Limits for Air Contaminants:

Chemical Name	CAS #	TWA Ppm	TWA mg	STEL ppm	STEL mg	Ceiling ppm	Ceiling mg	Skin
Methyl ethyl ketone	78-93-3	200	590	300	885	--	--	--
Toluene	108-88-3	100	375	150	560	--	--	--

Section 16 - Other Information

Prepared By: Research & Development
Revision Notes: Added VOC content to Section 9.

Additional Hazard Rating Systems:

Disclaimer: The information contained in this document is based upon data that was supplied to Carlisle 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.

Material Safety Data Sheet

SURE-SEAL® 90-8-30A BONDING ADHESIVE **MSDS No. 302124**

Date of Preparation: 07/23/07 Revision: 018

Section 1 - Chemical Product and Company Identification

Product/Chemical Name: SURE-SEAL 90-8-30A BONDING ADHESIVE
Chemical Formula: Mixture
General Use: Contact Bonding Adhesive
Manufacturer: Carlisle SynTec Incorporated, 1285 Ritner Highway, Carlisle, PA 17013, Phone: 800-479-6832
Emergency Phone Number: CHEMTREC (USA) 800-424-9300

Section 2 - Composition / Information on Ingredients

Ingredient Name	CAS Number	% wt *or* % vol
Acetone	67-64-1	8.0-10.0
Heptane	142-82-5	27-31
Toluene	108-88-3	36-40
Xylene	1330-20-7	1.4-2.4
Magnesium Oxide	1309-48-4	0.6-1.0
Polychloroprene	9010-98-4	
Phenolic Resin	26022-00-4	

Hazardous Ingredients:

	OSHA PEL		ACGIH TLV		NIOSH REL		NIOSH
Ingredient	**TWA**	**STEL**	**TWA**	**STEL**	**TWA**	**STEL**	**IDLH**
Acetone	1000 ppm	1000 ppm	500 ppm	750 ppm	250 ppm	None estab.	2500 ppm
Heptane	400 ppm	500 ppm	None estab.	None estab.	85 ppm	440 ppm	750 ppm
Toluene	200 ppm	150 ppm	50 ppm (skin)	150 ppm (skin)	100 ppm	150 ppm	500 ppm
Xylene	100 ppm	150 ppm	100 ppm.	150 ppm	100 ppm	150 ppm	900 ppm
Magnesium Oxide	10 mg/m^3 (as dust)	None estab.	10 mg/m^3	None estab.	10 mg/m^3	None estab.	750 mg/m^3

Section 3 - Hazards Identification

☆☆☆☆☆ Emergency Overview ☆☆☆☆☆

HMIS	
H	1
F	4
R	0
PPE†	

†Sec. 8

Potential Health Effects

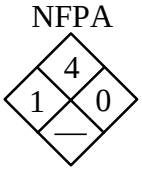
Primary Entry Routes: Skin contact, skin absorption, eye contact, inhalation, ingestion.
Target Organs:
Acute Effects
Inhalation: throat irritation on short-term exposure to liquid or vapor. Aspiration into lungs can cause chemical pneumonitis, which can be fatal.
Eye: irritation on short-term exposure 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, and 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 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 several organic solvents (Toluene, Heptane, Acetone and Xylene).
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: CC
Autoignition Temperature: 433.4°F (223°C)
LEL: 1.1% 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 containers 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 flashback. All containers should be grounded when material is transferred.
Hazardous Combustion Products: Toxic gases or vapors, such as carbon monoxide, carbon dioxide, hydrogen cyanide, 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 a full face piece 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 way 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 (Sec. 2). Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.
Administrative Controls:
Respiratory Protection: A NIOSH approved respirator must be used if vapor concentration is 100 ppm or above.
Protective Clothing/Equipment: Hycron or permeation resistant gloves recommended. Glasses or goggles recommended. Industrial shoes to protect feet from adhesive contact. Long sleeves, long trousers to protect skin from adhesive contact. Protective skin creams or emollients useful.
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: Not available
Vapor Pressure: 6.7 mm Hg at 400 °F (204 °C)
Vapor Density (Air=1): 2.0-3.7
Specific Gravity (H_2O=1, at 4 °C): 0.84
PH: N/A

Water Solubility: Negligible
Boiling Point (°C): 56-139
Freezing/Melting Point(°C): -48
% Volatile: 79-83
Evaporation Rate(nBuAc=1): 0.6-8.3
VOC: 656 gpl

Section 10 - Stability and Reactivity

Stability: Stable.
Polymerization: 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

Toxicity Data:

Eye Effects: Irritating

Skin Effects: Irritating

Acute Inhalation Effects: Product toxicity has not been determined.
Following are the component data:
TC_{50}:
Toluene: Rat > 26,700 ppm 1 hr; Mouse 400 ppm 24 hr
Acetone: Rat > 20,700 ppm 8 hr
Heptane: Human TCLo: 1000 ppm/6 minutes

Acute Oral Effects: Product toxicity has not been determined.
Following are component data:
LD_{50}:
Toluene: Rat 5000 mg/kg
Acetone: Rate 5,800 mg/kg
Mouse 3,000 mg/kg
Rabbit 5,340 mg/kg
Heptane: Rat, ivn, 222 mg/kg
Chronic Effects: May cause skin sensitization in some people.
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

Ecotoxicity: Not known
Environmental Fate: Not known
Environmental Degradation: Not known
Soil Absorption/Mobility: Not known

Section 13 - Disposal Considerations

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

Section 14 - Transport Information

DOT Transportation Data (49 CFR 172.101):

Shipping Name: Adhesives, 3, UN1133, II
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: 5L
b) Cargo Aircraft Only: 60L

Vessel Stowage Requirements
a) Vessel Stowage: B
b) Other: ---

Section 15 - Regulatory Information

EPA Regulations:

RCRA Hazardous Waste Number (40 CFR 261.33): Not listed

RCRA Hazardous Waste Classification (40 CFR 261): Not classified

TSCA (Toxic Substances Control Act) Status:
TSCA (United States) – The intentional ingredients of this product are listed.

CERCLA Hazardous Substance RQ – 40 CFR 302.4 (a)

Component	RQ (lbs)
Toluene	1000
Xylenes (O-, M-, P- Isomers)	100
Acetone	5000

CERCLA RQ – 40 CFR 302.4 (b)
Materials with a "listed" RQ may be reportable as an "unlisted hazardous substance". See 40 CFR 302.5 (b).

SARA 311/312 Codes:
Immediate (X) Delayed (X) Fire (X) Reactive ( ) Sudden Release of Pressure ( )

SARA 313 Components (40 CFR 372.65):

Section 313 Component(s)	CAS Number	%
Toluene	108-88-3	36 – 40
Xylene	1330-20-7	1.4 – 2.4

SARA EHS (Extremely Hazardous Substance) (40 CFR 355): Not listed, Threshold Planning Quantity (TPQ)

OSHA Regulations:
Air Contaminant (29 CFR 1910.1000, Table Z-1, Z-1-A): Not listed
OSHA Specifically Regulated Substance (29 CFR 1910): None listed

EPA Accidental Release Prevention (40 CFR 68): None listed

State Regulations:
California Proposition 65:

The following statement is made in order to comply with the California Safe Drinking Water and Toxic Enforcement Act of 1986: This product contains the following substance(s) known to the State of California to cause reproductive harm:
Toluene

Delaware Air Quality Management List:

Chemical Name	DRQ:	State?
Toluene	1000	Must be reported to the DRQ
Xylene	100	N
Acetone	5000	Must be reported to the DRQ

Florida Toxic Substance: The following components are listed as a toxic substance by the state of Florida:

Toluene
Xylene
Acetone
Heptane

Massachusetts Hazardous Substances List:

Chemical Name	CAS #	Codes
Toluene	108-88-3	2, 4, 5, 6, F7, F8
Xylene	1330-20-7	2, 4, F8, F9
Acetone	67-64-1	2, 4, 5, 6, F8, F9
Heptane	142-82-5	2, 4, 5, 6

Michigan Critical Materials Registry:

Chemical Name	CAS #	Report	Class
Toluene	108-88-3	- -	- -
Xylene	1330-20-7	- -	- -

Minnesota Hazardous Substance:

Chemical Name	Codes	Hazards	Carcinogen?
Toluene	ANO	skin	No
Xylene	ANO	- -	No
Acetone	AON	--	No
Heptane	ANO	--	No

New Jersey RTK Label Information:

Chemical Name	CAS #	Substance #	DOT #	TPQ	EHS
Toluene	108-88-3	1866	1294	- -	
Xylenes	1330-20-7	2014	1307	- -	

New York List of Hazardous Substances:

Chemical Name	RQ – Air	RQ – Land	Note
Toluene	1000	1	none
Xylene	1000	1	none
Acetone	5000	1	none

Pennsylvania RTK Label Information

Chemical Name	CAS #	Code
Benzene, Methyl	108-88-3	E
Benzene, Dimethyl	1330-20-7	E
2-Propanone	67-34-1	E
Heptane	142-82-5	--

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	

Section 16 - Other Information

Prepared By: Research & Development
Revision Notes: Added VOC content to Section 9.

Disclaimer: The information contained in this document is based upon data that was supplied to Carlisle 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.

Material Safety Data Sheet

SURE-WELD BONDING ADHESIVE **MSDS No. 302099**

Date of Preparation: 11/08/07 Revision: 010

Section 1 - Chemical Product and Company Identification

Product/Chemical Name: SURE-WELD BONDING ADHESIVE
Chemical Formula: Mixture
General Use: Contact Bonding Adhesive
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 ☆☆☆☆☆
Flammable
Skin and Eye Irritant
Aspiration Hazard
Skin Sensitizer

HMIS	
H	1
F	4
R	0
PPE†	

†Sec. 8

Potential Health Effects

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

	OSHA PEL		ACGIH TLV		NIOSH REL		NIOSH
Ingredient	**TWA**	**STEL**	**TWA**	**STEL**	**TWA**	**STEL**	**IDLH**
Heptane	400 ppm	500 ppm	None estab.	None estab.	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	50 ppm (skin)	150 ppm (skin)	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^3 (as dust)	None estab.	10mg/m^3	None estab.	10 mg/m^3	None estab.	750mg/m^3

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

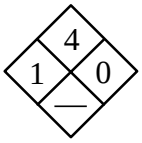
Autoignition Temperature: 433.4°F (223 °C)

LEL: 1.0% v/v

UEL: 12.8% v/v

Flammability Classification: Division 2

NFPA



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 (Sec. 2). 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: Hycron or permeation resistant gloves 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.

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_2O=1, at 4 °C): 0.849
pH: N/A

Water Solubility: Negligible.
Boiling Point (°C): 56-110
Freezing/Melting Point(°C): -91
% 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

Toxicity Data:

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

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

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_{50}:5000mg/kg
Acetone – Rat, 5800 mg/kg; Mouse, 3000 mg/kg; Rabbit, 5340 mg/kg
Heptane - Rat, ivn, LD_{50}: 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.

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, 55.7%
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: XOV
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: --

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: Revised Sections 2, 3, 9, 10, and 15.

Disclaimer: The information contained in this document is based upon data that was supplied to Carlisle 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.