

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Tuffbond® 319A	Product Type: Epoxy Adhesive
Company : Hernon Manufacturing, Inc. 121 Tech Drive Sanford, FL 32771	Contact Information: Telephone: 407-322-4000 Emergency Telephone: 800-255-3924 Web Site: www.hernon.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Physical state: Liquid
Color: Clear
Odor: Unpleasant

HMIS:
HEALTH: 2*
FLAMMABILITY: 1
PHYSICAL HAZARD: 0
Personal Protection: See Section 8

WARNING: HARMFUL IF INHALED.
MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION.

Primary Routes of Entry: Skin, inhalation, eyes

Signs and Symptoms of Exposure:

Inhalation: This material does not normally present an inhalation hazard, however, in applications where vapors (caused by high temperatures) or mists (caused by mixing) are created, breathing may cause a mild burning sensation in the nose, throat and lungs.

Eye Contact: May cause temporary discomfort or irritation to the eye. Contact with hot material can cause thermal burns which may result in permanent damage or blindness.

Skin Contact: May be slightly irritating to the skin. Repeated skin contact may result in an allergic skin reaction causing itching, burning, redness, and swelling. Contact with hot matter can cause thermal burns which may result in permanent damage.

Ingestion: Not expected to be a relevant route of exposure.

Existing Conditions Aggravated by Exposure: Eye, skin, and respiratory disorders.

3. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Ingredients</u>	<u>%</u>	<u>ACGIH TLV</u>	<u>OSHA PEL</u>	<u>OTHER</u>
Epoxy resin	60-100	None	None	None

4. FIRST AID MEASURES

Ingestion:	Do not induce vomiting. Keep individual calm. Obtain medical attention.
Inhalation:	Remove to fresh air. If symptoms develop and persist, get medical attention.
Skin Contact:	Wash with soap and water. Remove contaminated clothing and shoes. Wash clothing before reuse. Get medical attention if symptoms occur.
Eye Contact:	Flush with water for at least 15 minutes. Get medical attention.

5. FIRE FIGHTING MEASURES

Flash Point (TCC):	> 200°F
Recommended Extinguishing Agents:	Carbon dioxide, foam, dry chemical
Special Firefighting Procedures:	Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear. Water may be used to cool closed containers. High pressure stream will spread fire.
Hazardous Combustion Products:	Irritating organic vapors
Unusual Fire or Explosion Hazards:	None
Flammable/Explosive Limits – lower %:	NA
Flammable/Explosive Limits – upper %:	NA

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:	Wear proper protective equipment
Measures for Environmental Protection:	Do not allow entry into drains or surface waters
Clean-up Measures:	Soak up with an inert absorbent. Store in partly filled, closed container until disposal.

7. HANDLING AND STORAGE

Handling:	Avoid contact with eyes, skin and clothing. Avoid breathing vapor and mist. Wash thoroughly after handling. Use only with adequate ventilation.
Storage:	Store between 46° and 82°F unless otherwise labeled to preserve shelf life.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

Eye/Face Protection:	Safety glasses or goggles with side shields
Skin Protection:	Use rubber or plastic gloves, and protective clothing as necessary
Respiratory Protection:	Use NIOSH approved respirator if there is a potential to exceed exposure limits
Engineering Controls:	Forced ventilation may be required if concentrations exceed exposure limits

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	Clear
Odor:	Unpleasant
Vapor Pressure:	> 50 mm at 80°F
Vapor Density:	Not available
Solubility in Water:	Slight
Specific Gravity:	1.18
Boiling Point:	More than 300°F
Volatile Organic Compound Content	0.2%
Evaporation Rate (Ether = 1)	Not available
pH:	Does not apply

10. STABILITY AND REACTIVITY

Stability:	Stable
Hazardous Polymerization:	Will not occur
Hazardous Decomposition Products:	None
Incompatibility:	None

11. TOXICOLOGICAL INFORMATION

Ingredients:	Literature Referenced Target Organ and Other Health Effects	Carcinogen Status		
		NTP	IARC	OSHA
Epoxy resin	IRR	NO	NO	NO

Abbreviations:

IRR Irritant

12. ECOLOGICAL INFORMATION

Ecological Information: Not available

13. DISPOSAL CONSIDERATIONS

Recommended methods of disposal: Dispose of according to Federal, State and Local regulations.
EPA Hazardous Waste Number: Not an RCRA hazardous waste

14. TRANSPORTATION INFORMATION

U.S. Dept. of Transportation Ground (49 CFR):

Proper Shipping Name	Unrestricted
Hazard Class or Division:	None
Identification Number	None
Packing group:	None

International Air Transportation (ICAO/IATA):

Proper Shipping Name:	Unrestricted
Hazard Class or Division:	None
Identification Number	None
Packing group:	None

Water Transportation (IMO/IMDG):

Proper Shipping Name:	Unrestricted
Hazard Class or Division:	None
Identification Number	None
Packing group:	None
Marine pollutant:	None

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status:	All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory
CERCLA/SARA 313:	This product contains the following chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372): None
California Proposition 65:	This product contains trace quantities of a chemical (or chemicals) known to the state of California to cause cancer, birth defects, and/or other reproductive harm.

16. OTHER INFORMATION

Prepared By:	Jerry Litteral
Title:	Director - Quality & Development

DISCLAIMER: Some of the information presented is from sources other than direct test data on the product itself. The information in this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable.

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Tuffbond [®] 319B	Product Type: Epoxy Hardener
Company : Hernon Manufacturing, Inc. 121 Tech Drive Sanford, FL 32771	Contact Information: Telephone: 407-322-4000 Emergency Telephone: 800-255-3924 Web Site: www.hernon.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Physical state: Liquid
 Color: Clear
 Odor: Fishy

HMIS:
 HEALTH: 3*
 FLAMMABILITY: 1
 PHYSICAL HAZARD: 1
 Personal Protection: See Section 8

WARNING: SEVERE EYE AND SKIN IRRITANT.
 MAY CAUSE SENSITIZATION BY SKIN CONTACT.
 CORROSIVE.
 HARMFUL IF SWALLOWED.

Primary Routes of Entry: Skin, Inhalation, Eyes

Signs and Symptoms of Exposure:

Inhalation: Can cause severe eye, skin and respiratory tract burns.

Skin contact: Harmful in contact with skin. Causes skin burns. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Eye contact: Causes eye burns. May cause blindness. Severe eye irritation.

Ingestion: Harmful if swallowed. If ingested, severe burns of the mouth and throat, as well as a danger of perforation of the oesophagus and the stomach.

Chronic Health Hazard: This product contains no listed carcinogens according to IARC, ACGIH, NTP and/or OSHA in concentrations of 0.1 percent or greater. Prolonged contact may result in chemical burns and permanent damage. Repeated or prolonged contact causes sensitization, asthma and eczemas.

Existing Conditions Aggravated by Exposure: Eye and skin disorders, allergies

3. COMPOSITION / INFORMATION ON INGREDIENTS

<u>Ingredients</u>	<u>%</u>	<u>ACGIH TLV</u>	<u>OSHA PEL</u>	<u>OTHER</u>
Aliphatic Amine	100	None	None	None
Fumed Silica	1-5	6 mg/m ³ TWA	10 mg/m ³ TWA	3 mg/m ³ TWA respirable dust

4. FIRST AID MEASURES

General Advice:	Seek medical advice. If breathing has stopped or is labored, give assisted respirations. Supplemental oxygen may be indicated. If the heart has stopped, trained personnel should begin cardiopulmonary resuscitation immediately.
Ingestion:	Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Prevent aspiration of vomit. Turn victim's head to the side.
Inhalation:	Remove to fresh air. If symptoms develop and persist, get medical attention.
Skin Contact:	Immediately remove contaminated clothing, and any extraneous chemical, if possible to do so without delay. Initiate and maintain gentle and continuous irrigation until the patient receives medical care. If medical care is not promptly available, continue to irrigate for one hour. Cover wound with sterile dressing. Take off contaminated clothing and shoes immediately.
Eye Contact:	Hold eyelids apart, initiate and maintain gentle and continuous irrigation until the patient receives medical care. If medical care is not promptly available, continue to irrigate for one hour.
Note to Physicians:	Application of corticosteroid cream has been effective in treating skin irritation.

5. FIRE FIGHTING MEASURES

Flash Point (TCC):	101°C
Recommended Extinguishing Agents:	Alcohol-resistant foam, carbon dioxide, dry chemical, dry sand, limestone powder.
Special Firefighting Procedures:	Wear self-contained breathing apparatus and full protective clothing, such as turn-out gear. Avoid contact with the skin. A face shield should be worn. Use personal protective equipment.
Specific Hazards:	May generate ammonia gas. May generate toxic nitrogen oxide gases. Use of water may result in the formation of very toxic aqueous solutions. Do not allow run-off from fire fighting to enter drains or water courses. Incomplete combustion may form carbon monoxide. Downwind personnel must be evacuated. Burning produces obnoxious and toxic fumes.
Unusual Fire or Explosion Hazards:	None
Flammable/Explosive Limits – lower %:	Not available
Flammable/Explosive Limits – upper %:	Not available

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:	Use self-contained breathing apparatus and chemically protective clothing. Wear suitable protective clothing, gloves and eye/face protection. Evacuate personnel to safe areas.
Measures for Environmental Protection:	Do not allow entry into drains or surface waters. Construct a dike to prevent spreading.
Clean-up Measures:	Approach suspected leak areas with caution. Place in appropriate chemical waste container.

7. HANDLING AND STORAGE

Handling: Avoid contact with skin and eyes. Emergency showers and eye wash stations should be readily accessible. Adhere to work practice rules established by government regulations. Avoid contact with eyes. Use personal protective equipment. When using, do not eat, drink or smoke.

Storage: Store between 46° and 82°F unless otherwise labeled to preserve shelf life. Do not store near acids. Keep containers tightly closed in a dry, cool and well-ventilated place. Do not store in reactive metal containers.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

Eye/Face Protection: Safety glasses or goggles with side shields

Skin Protection: Use rubber, impervious gloves and protective clothing as necessary

Respiratory Protection: Use NIOSH approved respirator if there is a potential to exceed exposure limits

Engineering Controls: Forced ventilation may be required if concentrations exceed exposure limits

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid

Color: Clear

Odor: Fishy

Vapor Pressure: Less than 1 mm at 21°C

Vapor Density: Not available

Solubility in Water: Completely soluble

Specific Gravity: 0.98

Boiling Point: > 200°C

Volatile Organic Compound Content: Not available

Evaporation Rate (Ether = 1): Not available

pH: Alkaline

10. STABILITY AND REACTIVITY

Stability: Stable under normal conditions

Hazardous Polymerization: Will not occur

Hazardous Decomposition Products: Nitric acid, ammonia, nitrogen oxides. Nitrogen oxide can react with water vapors to form corrosive nitric acid. Carbon monoxide, carbon dioxide, aldehydes, flammable hydrocarbon fragments (e.g., acetylene).

Incompatibility: Sodium hypochlorite, organic acids (i.e. acetic acid, citric acid etc.), mineral acids. Product slowly corrodes copper, aluminum, zinc and galvanized surfaces. Reaction with peroxides may result in violent decomposition of peroxide possibly creating an explosion. Reactive metals (e.g. sodium, calcium, zinc etc.), materials reactive with hydroxyl compounds, oxidizing agents.

11. TOXICOLOGICAL INFORMATION

Acute Health Hazard

Ingestion: LD50: > 1,620 mg/kg, Species: Rat., Method: Estimated.
Skin: LD50: > 1,000 mg/kg, Species: Rabbit, Method: Estimated.
Eye irritation/corrosion: Severe eye irritation.
Acute dermal irritation/corrosion: Severe skin irritation.
Sensitization: May cause sensitization by skin contact.

Chronic Health Hazard: The product or a component may be mutagenic, the data is inconclusive.

Ingredients:	Literature Referenced Target Organ and Other Health Effects	Carcinogen Status		
		NTP	IARC	OSHA
Aliphatic Amine	SKI EYE	NO	NO	NO
Silica, fumed	NTO	NO	NO	NO

Abbreviations:

SKI Skin **EYE** Eyes **NTO** No Target Organs

12. ECOLOGICAL INFORMATION

Ecological Information: Not available

13. DISPOSAL CONSIDERATIONS

Recommended methods of disposal: Dispose of according to Federal, State and Local regulations.
EPA Hazardous Waste Number: Not an RCRA hazardous waste

14. TRANSPORTATION INFORMATION

U.S. Dept. of Transportation Ground (49 CFR):

Proper Shipping Name: Corrosive liquids, n.o.s. (Nonylphenol, Aminoethyl) piperazine, 1-(2-, (AEP))
Hazard Class or Division: 8
Identification Number: UN1760
Packing group: III

International Air Transportation (ICAO/IATA):

Proper Shipping Name: Corrosive liquids, n.o.s. (Nonylphenol, Aminoethyl) piperazine, 1-(2-, (AEP))
Hazard Class or Division: 8
Identification Number: UN1760
Packing group: III

Water Transportation (IMO/IMDG):

Proper Shipping Name: Corrosive liquids, n.o.s. (Nonylphenol, Aminoethyl) piperazine, 1-(2-, (AEP))
Hazard Class or Division: 8
Identification Number: UN1760
Packing group: III
Marine pollutant: Not available

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CERCLA/SARA 313:	This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372): None
California Proposition 65:	This product contains trace quantities of a chemical (or chemicals) known to the state of California to cause cancer, birth defects, and/or other reproductive harm.

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