SAFETY DATA SHEET

Issue Date 08-Jun-2010 **Revision Date** 21-Aug-2017 **Version** 1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier
Product Name EMA Epoxy Adhesive Part B

Other Means of Identification
SDS # PAN-002

Recommended Use of the Chemical and Restrictions on Use
Recommended Use Epoxy hardener.

Details of the Supplier of the Safety Data Sheet
Supplier Address
Panduit
18900 Panduit Dr.
Tinley Park, IL 60487

Emergency Telephone Number
Company Phone Number Phone: 708-532-1800
Fax: 708-532-1811
Emergency Telephone INFOTRAC 1-352-323-3500 (International)
1-800-535-5053 (North America)

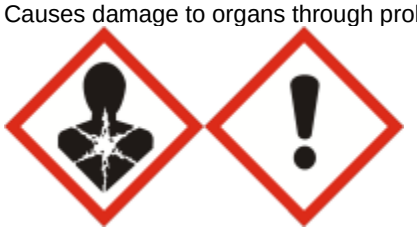
2. HAZARDS IDENTIFICATION

Classification

Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2
Carcinogenicity	Category 1B
Specific target organ toxicity (repeated exposure)	Category 1

Signal Word
Danger

Hazard Statements
Causes skin irritation
Causes severe eye irritation
May cause cancer
Causes damage to organs through prolonged or repeated exposure



Appearance Black paste **Physical State** Paste **Odor** Mercaptan

Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Wear eye/face protection
Do not breathe dust/fume/gas/mist/vapors/spray
Do not eat, drink or smoke when using this product

Precautionary Statements - Response
IF exposed or concerned: Get medical advice/attention
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Get medical attention if irritation occurs
IF ON SKIN: Wash with plenty of soap and water
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash it before reuse

Precautionary Statements - Storage
Store locked up

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards Not Otherwise Classified (HNOC)
May be harmful if swallowed

Other Hazards
Very toxic to aquatic life with long lasting effects
Very toxic to aquatic life

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS No	Weight-%
Aluminum Hydroxide	21645-51-2	30-60
Polymercaptan Hardener	PROPRIETARY	30-60
Distillates, petroleum, heavy thermal cracked	64741-81-7	5-10
2,4,6-Tri(dimethylaminomethyl)phenol	90-72-2	5-10
Styrene	100-42-5	1-5
Silica, fumed	112945-52-5	1-5
Ethylene glycol	107-21-1	1-5
Benz[a]anthracene	56-55-3	0.1-1

4. FIRST AID MEASURES

First Aid Measures

General Advice — If exposed or concerned: Get medical advice/attention.

Inhalation — If symptomatic, move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. If symptoms persist, call a physician.

Eye Contact — IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation occurs.

Ingestion — Do not induce vomiting without medical advice. If symptoms persist, call a physician.

Skin Contact — IF ON SKIN: Wash with plenty of soap and water. If irritation occurs: Get medical advice/attention. Take off contaminated clothing. Wash contaminated clothing before reuse.

Most Important Symptoms and Effects, both Acute and Delayed

Symptoms May cause nausea, vomiting, stomach ache, and diarrhea. May cause shortness of breath, nausea, dizziness, and headache. May cause respiratory irritation. May cause allergic skin reaction. Eyes may have symptoms of redness, itching, irritation and watering from overexposure. May cause skin irritation with redness and swelling.

Indication of any Immediate Medical Attention and Special Treatment Needed

Note to Physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Foam. Dry chemical. Carbon dioxide (CO2).

Unsuitable Extinguishing Media Not determined.

Specific Hazards Arising from the Chemical
Closed containers may explode due to buildup of pressure when exposed to extreme heat.

Hazardous Combustion Products Carbon oxides. Irritating organic fragments.

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

Personal Precautions Immediately contact emergency personnel. Use personal protective equipment as required. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Remove all sources of ignition.

Environmental Precautions See Section 12 for additional ecological information. Keep out of waterways.

Methods and Material for Containment and Cleaning Up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Cleaning Up Sweep up and shovel into suitable containers for disposal. Keep in suitable, closed containers for disposal. Wash area with soap and water.

7. HANDLING AND STORAGE

Precautions for Safe Handling

Advice on Safe Handling Handle in accordance with good industrial hygiene and safety practice. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wash face, hands, and any exposed skin thoroughly after handling. Wear eye/face protection. Keep away from heat/sparks/open flames/hot surfaces. — No smoking. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product.

Conditions for Safe Storage, Including any Incompatibilities

Storage Conditions Store locked up. Keep container tightly closed and store in a cool, dry and well-ventilated place. Keep away from incompatible materials, open flames, and high temperatures. Keep/store only in original container.

Incompatible Materials Strong oxidizing agents. Strong acids. Strong bases.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Aluminum Hydroxide 21645-51-2	TWA: 1 mg/m^3 respirable fraction	-	-
Styrene 100-42-5	STEL: 40 ppm TWA: 20 ppm	TWA: 100 ppm (vacated) TWA: 50 ppm (vacated) TWA: 215 mg/m^3 (vacated) STEL: 100 ppm (vacated) STEL: 425 mg/m^3 Ceiling: 200 ppm	IDLH: 700 ppm TWA: 50 ppm TWA: 215 mg/m^3 STEL: 100 ppm STEL: 425 mg/m^3
Ethylene glycol 107-21-1	Ceiling: 100 mg/m^3 aerosol only	(vacated) Ceiling: 50 ppm (vacated) Ceiling: 125 mg/m^3	-
Silica, fumed 112945-52-5	-	TWA: 20 Million particles per cubic feet	-

Appropriate Engineering Controls

Engineering Controls Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits. Local exhaust is suggested for use, where possible, in enclosed or confined spaces.

Individual Protection Measures, such as Personal Protective Equipment

Eye/Face Protection Wear safety glasses with side shields (or goggles).

Skin and Body Protection Chemical resistant, impermeable gloves.

Respiratory Protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	Paste		
Appearance	Black paste	**Odor**	Mercaptan
Color	Black	**Odor Threshold**	Not available

Property	Values	Remarks • Method
pH	Not applicable	
Melting Point/Freezing Point	Not available	
Boiling Point/Boiling Range	> 140 °C / 300.2 °F	
Flash Point	> 93 °C / 199.4 °F	Tag Closed Cup
Evaporation Rate	Not available	
Flammability (Solid, Gas)	Not determined	
Upper Flammability Limits	Not available	

Lower Flammability Limit	Not available
Vapor Pressure	Negligible
Vapor Density	Not available
Specific Gravity	1.4
Water Solubility	Slightly soluble
Solubility in Other Solvents	Not determined
Partition Coefficient	Not available
Autoignition Temperature	Not available
Decomposition Temperature	Not determined
Kinematic Viscosity	Not determined
Dynamic Viscosity	Not determined
Explosive Properties	Not determined
Oxidizing Properties	Not determined
VOC Content	0.04% (value for resin and hardener together)

10. STABILITY AND REACTIVITY

Reactivity
Not reactive under normal conditions.

Chemical Stability
Stable under recommended storage conditions.

Possibility of Hazardous Reactions
None under normal processing.

Hazardous Polymerization Hazardous polymerization does not occur.

Conditions to Avoid
Contact with incompatible materials. Excessive heat.

Incompatible Materials
Strong oxidizing agents. Strong acids. Strong bases.

Hazardous Decomposition Products
Carbon oxides. Irritating organic fragments.

11. TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Product Information

Inhalation May cause irritation of respiratory tract.

Eye Contact Causes severe eye irritation.

Skin Contact Causes skin irritation.

Ingestion May be harmful if swallowed.

Component Information

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Aluminum Hydroxide 21645-51-2	> 5000 mg/kg (Rat)	-	-
Distillates, petroleum, heavy thermal cracked 64741-81-7	= 4320 mg/kg (Rat)	> 2000 mg/kg (Rat) > 2000 mg/kg (Rabbit)	-
2,4,6-Tri(dimethylaminomethyl)phenol 90-72-2	= 1000 mg/kg (Rat)	= 1280 mg/kg (Rat)	-
Styrene 100-42-5	= 1000 mg/kg (Rat)	-	= 11.8 mg/L (Rat) 4 h
Ethylene glycol 107-21-1	= 4000 mg/kg (Rat)	= 9530 µL/kg (Rabbit)	-
Silica, fumed 112945-52-5	= 3160 mg/kg (Rat)	-	-

Information on Physical, Chemical and Toxicological Effects

Symptoms Please see section 4 of this SDS for symptoms.

Delayed and Immediate Effects as well as Chronic Effects from Short and Long-term Exposure

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen. However, the product as a whole has not been tested.

Chemical Name	ACGIH	IARC	NTP	OSHA
Styrene 100-42-5		Group 2B	Reasonably Anticipated	X
Silica, fumed 112945-52-5		Group 3		
Benz[a]anthracene 56-55-3	A2	Group 2B	Reasonably Anticipated	X

Legend

ACGIH (American Conference of Governmental Industrial Hygienists)
A2 - Suspected Human Carcinogen
IARC (International Agency for Research on Cancer)
Group 2B - Possibly Carcinogenic to Humans
Group 3 IARC components are "not classifiable as human carcinogens"
NTP (National Toxicology Program)
Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen
OSHA (Occupational Safety and Health Administration of the US Department of Labor)
X - Present

STOT - Repeated Exposure Causes damage to organs through prolonged or repeated exposure.

Numerical Measures of Toxicity
Not determined

12. ECOLOGICAL INFORMATION

Ecotoxicity
Very toxic to aquatic life. Very toxic to aquatic life with long lasting effects.

Chemical Name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Distillates, petroleum, heavy thermal cracked 64741-81-7		48: 96 h Brachydanio rerio mg/L LC50 semi-static		
Styrene 100-42-5	1.4: 72 h Pseudokirchneriella subcapitata mg/L EC50 0.72: 96 h Pseudokirchneriella subcapitata mg/L EC50 0.46 - 4.3: 72 h Pseudokirchneriella subcapitata mg/L EC50 static 0.15 - 3.2: 96 h Pseudokirchneriella subcapitata mg/L EC50 static	3.24 - 4.99: 96 h Pimephales promelas mg/L LC50 flow-through 19.03 - 33.53: 96 h Lepomis macrochirus mg/L LC50 static 6.75 - 14.5: 96 h Pimephales promelas mg/L LC50 static 58.75 - 95.32: 96 h Poecilia reticulata mg/L LC50 static	EC50 = 5.4 mg/L 5 min	3.3 - 7.4: 48 h Daphnia magna mg/L EC50
Ethylene glycol 107-21-1	6500 - 13000: 96 h Pseudokirchneriella subcapitata mg/L EC50	41000: 96 h Oncorhynchus mykiss mg/L LC50 14 - 18: 96 h Oncorhynchus mykiss mL/L LC50 static 27540: 96 h Lepomis macrochirus mg/L LC50 static 40761: 96 h Oncorhynchus mykiss mg/L LC50 static 40000 - 60000: 96 h Pimephales promelas mg/L LC50 static 16000: 96 h Poecilia reticulata mg/L LC50 static	EC50 = 10000 mg/L 16 h EC50 = 620 mg/L 30 min EC50 = 620.0 mg/L 30 min	46300: 48 h Daphnia magna mg/L EC50
Benz[a]anthracene 56-55-3			EC50 = 0.26 mg/L 15 min	0.01: 96 h Daphnia magna mg/L LC50 Static 0.0042: 48 h Daphnia magna mg/L EC50

Persistence and Degradability
Not determined

Bioaccumulation
Not determined

Mobility

Chemical Name	Partition Coefficient
Styrene 100-42-5	2.95
Ethylene glycol 107-21-1	-1.93
Benz[a]anthracene 56-55-3	5.61

Other Adverse Effects
Not determined

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods

Disposal of Wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging Disposal should be in accordance with applicable regional, national and local laws and regulations.

US EPA Waste Number The following US EPA waste codes apply.

Chemical Name	RCRA	RCRA - Basis for Listing	RCRA - D Series Wastes	RCRA - U Series Wastes
Benz[a]anthracene 56-55-3	U018	Included in waste streams: F032, F034, F039, K001, K035, K141, K142, K143, K144, K145, K147, K148, K170		U018

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste Status
Styrene 100-42-5	Toxic Ignitable

14. TRANSPORT INFORMATION

Note Please see current shipping paper for most up to date shipping information, including exemptions and special circumstances.

DOT Not regulated

IATA Not regulated

IMDG Not regulated

15. REGULATORY INFORMATION

International Inventories

Not Determined

Legend:

TSCA *- United States Toxic Substances Control Act Section 8(b) Inventory*

DSL/NDSL *- Canadian Domestic Substances List/Non-Domestic Substances List*

EINECS/ELINCS *- European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances*

ENCS *- Japan Existing and New Chemical Substances*

IECSC *- China Inventory of Existing Chemical Substances*

KECL *- Korean Existing and Evaluated Chemical Substances*

PICCS *- Philippines Inventory of Chemicals and Chemical Substances*

US Federal Regulations

CERCLA

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Styrene 100-42-5	1000 lb		RQ 1000 lb final RQ RQ 454 kg final RQ
Ethylene glycol 107-21-1	5000 lb		RQ 5000 lb final RQ RQ 2270 kg final RQ
Benz[a]anthracene 56-55-3	10 lb		RQ 10 lb final RQ RQ 4.54 kg final RQ

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic Health Hazard	Yes
Fire hazard	No
Sudden release of pressure hazard	No
Reactive Hazard	No

SARA 313

Chemical Name	CAS No	Weight-%	SARA 313 - Threshold Values %
Styrene - 100-42-5	100-42-5	1-5	0.1
Ethylene glycol - 107-21-1	107-21-1	1-5	1.0
Benz[a]anthracene - 56-55-3	56-55-3	0.1-1	0.1

CWA (Clean Water Act)

Component	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants	CWA - Hazardous Substances
Styrene 100-42-5 (1-5)	1000 lb			X
Benz[a]anthracene 56-55-3 (0.1-1)		X	X	

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals.

Chemical Name	California Proposition 65
Benz[a]anthracene - 56-55-3	Carcinogen

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Styrene 100-42-5	X	X	X
Ethylene glycol 107-21-1	X	X	X
Benz[a]anthracene 56-55-3	X	X	X

16. OTHER INFORMATION

NFPA	**Health Hazards**	**Flammability**	**Instability**	**Special Hazards**
	Not determined	Not determined	Not determined	Not determined
HMIS	**Health Hazards**	**Flammability**	**Physical Hazards**	**Personal Protection**
	2*	1	1	Not determined

Chronic Hazard Star Legend ** = Chronic Health Hazard*

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Revision Note Periodic Review

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet