

MATERIAL SAFETY DATA SHEET

Prepared by: Technical Barrier Systems

Revision Date: January 22, 2003

This document is prepared pursuant to the OSHA Hazard Communication Standard (29 CFR 1910.1200). Where a proprietary ingredient is shown, the identity may be made available as provided in this standard.

All components of this product are included in the EPA Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

1. **PRODUCT NAME:** **EMBE® PERMASEAL**
EMBE® PERMAFLOR R
EMBE® PERMAFLOR
EMBE® PERMACOAT HD
EMBE® PERMASHIELD HD
EMBE® PERMASHIELD T
EMBE® PERMACOLOR
EMBE® PERMASET
EMBE® PERMAGLAZE
EMBE® PERMAGLASS
EMBE® PERMAFLAKE

Chemical Family: Epoxy resin (**PART A - RESIN**)

2. HAZARDOUS INGREDIENTS:	CASNO	EXPOSURE LIMITS*		
		TLV	STEL	PEL
Epoxy Resin	25068-38-6	None	None	None
Nonyl Phenol	1323-65-5	None	None	None
Benzyl Alcohol	100-51-6	None	None	None
Alkyl Glycidyl Ether Polymers (Additives)	68609-97-2	None	None	None
Acrylate Copolymer	64742-47-8	300	None	None
	64742-95-6	50	None	None

*) Refer to Section 7 for available LD/LC(50) Health Hazard Data.

3. **PHYSICAL DATA:**

Physical state	Liquid
Odor/Appearance	White-yellow liquid
Specific Gravity	1.16-1.18
Solubility in water (20°C)	Insoluble

4. **FIRE AND EXPLOSION HAZARD DATA:**

Flammability	No
Means of Extinction	Carbon Dioxide, Dry Chemical Foam
Special Procedures	Wear self-contained breathing apparatus.
Flash Point	150°C closed cup
Hazardous Combustion Products	Oxides of Carbon

EMBE® PRODUCT LINE

5. REACTIVITY DATA:

Chemical Stability:

Stable 7

Yes

Conditions to avoid

Excess curing agent

Incompatible Materials:

Strong acids, strong bases, strong oxidizing agents.

Reactivity:

Hazardous blymenization can occur.

Hazardous Products:

Oxides of Carbon (CO, CO₂)

6. TOXOLOGICAL PROPERTIES:

Route of Entry

Skin Contact

- May cause skin irritation

Skin Absorption

- None known

Eye Contact

- Causes eye irritation

Inhalation, Acute

- Not a problem

Inhalation, Chronic

- Refer to inhalation acute

Ingestion

- Low toxicity

Carcinogen

- Not listed as a carcinogen by NTP
OSHA

7. PREVENTATIVE MEASURES:

Gloves

- Impervious

Respiratory

- NIOSH Mask

Eye

- Splash proof goggles

Footwear

- Impervious

Clothing

- Protective

Engineering Controls

- Adequate local exhaust

Clean-up Procedures

- Absorb with inert material

Leak/Spill

- Absorb with inert material

Handling

- Avoid skin contact

Storage

- Store away from heat

8. FIRST AID:

Eyes:

Flush eyes with water, lifting upper and lower lids occasionally for 15 minutes. Seek medical attention.

Skin:

Remove contaminated clothing.

Ingestion:

Not normally need, if large amounts ingested, seek medical advice.

MATERIAL SAFETY DATA SHEET

Prepared by: Technical Barrier Systems

Revision Date: August 1 2006

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Chemical Family: Polyamide/amine mixture
(PART B – HARDENER)

2. HAZARDOUS INGREDIENTS:	CASNO	EXPOSURE LIMITS*		
		TLV	STEL	PEL
Nonyl Phenol	1323-65-5	None	None	None
Benzyl Alcohol	100-51-6	None	None	None
Polyoxypropylenediamine	9046-10-0	None	None	None
Cycloaliphatic Amine	2855-13-2	None	None	None

*) Refer to Section 7 for available LD/LC(50) Health Hazard Data.

3. **PHYSICAL DATA:**

Boiling Point (°C):	107	Water/Oil Distribution
Percent Volatile:	Slight	Coefficient: N/Av
Freezing Point (°C)	N/Av	Solubility in Water: 100%
Vapor Pressure mmHg @20(°C):	1.01	Specific Gravity: 0.98
Vapor Density:	> Air	pH: Alkaline
Odor Threshold:	N/Av	Evaporation Rate: N/Av
Appearance:	Yellow clear Liquid	Odor: Ammoniacal
N/Av = Not Available	N/Av = Not Available	ca. = Approximate

EMBE® PRODUCT LINE

4. FIRE AND EXPLOSION HAZARD DATA: HMIS Hazard Rating No. 1 (Slight)

Flash Point: 118°C (245°F) (TETA) Method: Tag C.C.

Auto-Ignition Temp.: Not Available

Limits of Flammability: LEL: Not Available UEL: Not Available

Extinguishing Media: Carbon dioxide, foam, dry chemical & water fog.

Special Fire & Unusual Hazards: At higher temperature vapors can cause pressure build up in sealed containers. Use water to cool containers exposed to fire. Self-contained respirator equipment and full protective clothing required when smoke or fumes are generated. Electrical grounding is not recommended.

5. REACTIVITY DATA: HMIS Hazard Rating No. 0 (Minimal)

Stability: Stable. Not sensitive to mechanical impact. Excessive heat, fumes and smoke can occur if this product is not mixed and used according to directions.

Incompatibility: Strong oxidizing agents, acids, isocyanates, and organic peroxides may result in violent explosive reaction.

Hazardous Decomposition Products: Oxides of carbon and nitrogen; various unknown hydrocarbons from incomplete combustion.

Hazardous Polymerization: Will not occur when handled per instructions.

6. ENVIRONMENTAL AND DISPOSAL INFORMATION:

Action to Take For Spills/Leaks: Ventilate area, eliminate all sources of ignition. Wear appropriate protective gear, contain leak or spill, salvage, clean up residue with absorbent material.

Waste Disposal Method: Handle disposal of waste material in manner which complies with local, state, province and federal regulation. Incineration at agency approved waste-disposal facilities.

7. HEALTH HAZARD DATA: HMIS Hazard Rating No. 2 (Moderate)

PRIMARY ROUTE OF ENTRY: Dermal, Ingestion

Effects of Overexposure

Inhalation: Due to the low vapor pressure of this product fumes will be minimal below 95°F. At higher temperatures fumes will be irritating.

Eyes: Contact can cause severe irritation, redness, tearing and blurred vision.

Skin Contact: Short single exposure may cause moderate irritation to mild burn. Prolonged or repeated exposure may cause a severe burn. This material may result in an allergic type reaction or sensitization response in some individuals.

EMBE® PRODUCT LINE

7. HEALTH HAZARD DATA (cont'd):

Skin Absorption: May be absorbed through skin to increase overall toxicity.

LD(50) Dermal	CASRN	111-40-0	1090 mg/kg Rabbit.
	112-24-3		805 mg/kg Rabbit.
	112-57-2		660 mg/kg Rabbit.

Ingestion: Intake can cause gastrointestinal irritation, nausea, vomiting, diarrhea, headache and drowsiness. Can result in burns of mouth, esophagus and stomach.

LD(50)	Oral	CASRN	111-40-0	1080 mg/kg Rat.
		112-24-3		2500 mg/kg Rat.
		112-57-2		205 mg/kg Rat.
		68082-29-1		2000 mg/kg Rat.

Chronic: Product does not contain carcinogenic materials as defined by OSHA Hazardous Communications Act 1910.1200. Materials are not known mutagenic, teratogenic or reproductive health hazards.

8. FIRST AID:

Inhalation: Remove victim from exposure. If difficulty with breathing, administer oxygen. If breathing has stopped administer artificial respiration, preferably mouth-to-mouth. Seek medical attention.

Eyes: Flush eyes with water and/or 1% boric acid, lifting upper and lower lids occasionally for 15 minutes. Seek prompt medical attention.

Skin: Remove contaminated clothing. Wash thoroughly with soap and water. If irritation persists seek medical attention. Wash contaminated clothing before reuse.

Ingestion: Do NOT induce vomiting; give large quantities of water or diluted water with acetic acid; get immediate medical attention. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquids into lungs. Do not give anything by mouth to an unconscious person.

9. SPECIAL PROTECTION INFORMATION:

Ventilation: Ventilation is recommended. Air movement must be designed to insure turnover at all locations in work area to avoid build up of heavy vapors.

Personal Protection Equipment: Do NOT wear contact lenses when working with this material. Use chemical goggles/safety glasses with side shields and Rubber/Latex gloves. Selection of specific items such as boots and apron will depend on operation. Wear respirator protection whenever airborne concentrations exceed TLV ceilings or TWA, use NIOSH/OSHA approved respirators equipped with an organic vapor cartridge for listed hazard. Confined spaces, rooms, or tanks are areas where concern for TLV's is especially important. Reference OSHA Regulation CFR 29 1910.134 for recommended respiratory protection.

EMBE® PRODUCT LINE

10. ADDITIONAL INFORMATION:

Average Shelf Life: Refer to Product Data Sheet.

Special Instructions: Store in cool, dry place.

11. REGULATORY INFORMATION:

Title III Section 302: No reportable materials.

Title III Section 311/312: Health hazard: Immediate
Physical hazard: None

Title III Section 313: No reportable materials.

WHMIS Classification: Class D, Div 2, Sub B

12. TRANSPORTATION

National Motor Freight Classification (NMFC): 46030 Sub: - Class: 55

Description: RESIN COMPOUNDS

Emergency Response Guide Page No.: 0

DOT Reportable Quantity: 0

DOT

Shipping Name: REGULATED
UNNO: 2289 Class: 8 Package Group: III
Contains: Isophoronediamine
Label: Corrosive

INTERNATIONAL

Shipping Name: REGULATED
UNNO: 2289 Class: 8 Package Group: III
Contains: Isophoronediamine
Label: Corrosive

Marine Pollutant: ND
(NL = Not Listed; P = Moderate; PP = Severe; ND = Not Determined)

The information herein is given in good faith. No warranty, expressed or implied, is given regarding the accuracy of these data or the results obtained from the use thereof. Consult Technical Barrier Systems Inc. for further information. 1-888-537-2888