

MATERIAL SAFETY DATA SHEET

Fibergrate

Composite Structures

Bonding Kit - Part A

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SECTION I - CHEMICAL PRODUCT & COMPANY IDENTIFICATION

24-HOUR EMERGENCY PHONE NUMBER: CHEMTREC - Domestic (800) 424-9300
CHEMTREC - International (703) 527-3887
General Assistance Number: (281) 544-6738

Material Identity: Epon® Resin 828
HMIS Rating: H=2, F=1, R=0
WHMIS Rating: D2B

Fibergrate Revision Date: 02/08/08
Resolution Revision Date: 07/16/01
Revision Number: 3
Reprint Date: 02/08/08

Resolution Performance Products LLC
P.O. Box 4500
Houston, TX 77210
(281) 424-9300

SECTION II - PRODUCT/INGREDIENTS

Ingredient	CAS #	Concentration	WHMIS Controlled
Bisphenol A/Epichlorohydrin Based Epoxy Resin	25068-38-6	100% weight	Yes

See Section VIII for Occupational Exposure Guidelines

SECTION III - HAZARDS IDENTIFICATION

WHMIS CLASS/DESCRIPTION: Class D2B Other Toxic Effects - Irritant/Skin Sensitizer

PHYSICAL DESCRIPTION: Viscous liquid, light yellow

ROUTES OF EXPOSURE: Exposure will most likely occur through skin contact or accidental ingestion. Based on the low volatility, this product is not considered to be a respiratory hazard under normal conditions of use.

HEALTH HAZARDS: May produce an allergic reaction on contact with skin. Thermal burns may result from contact with hot material. Irritating to skin. Irritating to eyes. May be irritating to respiratory passages. Contact with product at elevated temperatures can result in thermal burns to the eye. Contact with product at elevated temperatures can result in thermal burns to the skin.

HANDLING INFORMATION: Avoid exposure to high temperatures and all sources of ignition. Wear suitable gloves and eye protection. Minimize skin contact. Wash thoroughly after handling. Empty containers contain hazardous product residues which can create health hazards.

SECTION IV - FIRST AID

EYES: Flush eyes with water for at least 15 minutes while holding eyelids open. If irritation occurs and persists, obtain medical attention. For hot products, flush with large amounts of cool water continuously.

SKIN: Flush affected skin with gently flowing lukewarm water for at least 20 minutes and remove contaminated clothing while rinsing. Wash contaminated skin with mild soap and water for 15 minutes. If irritation occurs and persists, obtain medical attention. If thermal burns occur, flush skin immediately with large volumes of cool water for 15 minutes. Carefully remove clothing. If clothing is stuck to a burn area, do not pull off but cut around it. Cover burn area with a clean cloth. Obtain medical attention immediately.

INGESTION: DO NOT induce vomiting. In general, no treatment is necessary unless large quantities are ingested.

INHALATION: Remove victim from further exposure and restore breathing, if required. Obtain medical attention.

NOTE TO PHYSICIAN: In general, emesis induction is unnecessary.

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SECTION V - FIRE FIGHTING MEASURES

FLASH POINT (Method): 480° F/249° C (Pensky-Martens Closed Cup)

LOWER FLAMMABILITY LIMIT: Not available.

UPPER FLAMMABILITY LIMIT: Not available.

AUTOIGNITION TEMPERATURE: Not available.

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

FIREFIGHTING INSTRUCTIONS: Avoid inhalation of smoke. Do not enter confined fire space without adequate protective clothing and an approved positive pressure self-contained breathing apparatus. Use water to cool fire-exposed containers. Material will not burn unless preheated.

HAZARDOUS COMBUSTION PRODUCTS: Carbon dioxide, carbon monoxide, and unidentified organic compounds may be formed upon combustion. Reaction with some curing agents may produce considerable heat, which could char the reaction mass and produce flames and vapors of unknown composition.

SECTION VI - ACCIDENTAL RELEASE MEASURES

PRECAUTIONS: May burn although not readily ignitable. Isolate hazard area and restrict access. Try to work upwind of spill. Avoid direct contact with material. Wear appropriate breathing apparatus (if applicable) and clothing.

SPILL MANAGEMENT: Use cautious judgement when cleaning up large spills. Shut off source of leak if safe to do so. Dike and contain land spills; contain water spills by booming. Use water fog to knock down vapors; contain runoff. For large spills, remove by mechanical means and place in containers. Absorb residue or small spills with an absorbent material and remove to nonleaking containers for disposal. Recommended materials: Clay or sand. Flush area with water to remove trace residue. Dispose of recovered material as noted under Disposal Considerations. Notify appropriate environmental agency(ies).

SECTION VII - HANDLING AND STORAGE

HANDLING: Do not pressurize drum containers to empty them. This material is a sensitizer. Caution, irritant. Avoid all direct contact with this material. Empty containers may contain hazardous product residues. Wash with soap and water before eating, drinking, smoking, applying cosmetics or using toilet facilities. Launder contaminated clothing before reuse. Contaminated leather articles including shoes cannot be decontaminated and should be destroyed to prevent reuse. Avoid inhalation of vapors, mists or aerosols which are produced when product is handled at elevated temperatures or mechanically generated into the air. Heating this resin above 150° C in the presence of air may cause slow oxidative decomposition. Above 260° C, polymerization may occur. Some curing agents in the presence of air may cause thermal and oxidative decomposition with some epoxy resins. It may produce exothermic reactions, which in large masses can cause runaway polymerization and charring of the reactants. Fumes and vapors from these thermal and chemical decompositions vary widely in composition and toxicity. If this resin is handled, shipped, or stored in bulk, the recommended pumping temperature is 80° C. To prevent thermal burns, avoid skin and eye contact with hot liquid.

STORAGE: Store in a cool, dry well-ventilated area, away from heat and ignition sources.

SECTION VIII - EXPOSURE CONTROLS/PERSONAL PROTECTIONS

The following information, while appropriate for the product, is general in nature. The selection of personal protective equipment will vary depending on the conditions of use.

EXPOSURE CONTROLS:

Occupational Exposure Limits: North American exposure limits have not been established for this product. Consult local authorities for acceptable provincial values.

Mechanical Ventilation: Mechanical ventilation is recommended for all indoor situations to control fugitive emissions. Make up air should always be supplied to balance air exhausted (either generally or locally). Local ventilation is recommended at the source of contaminant generation.

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SECTION VIII - EXPOSURE CONTROLS/PERSONAL PROTECTIONS, cont.

PERSONAL PROTECTIVE EQUIPMENT:

Eye Protection: Chemical safety goggles and/or full face shield to protect eyes and face, if product is handled such that it could be splashed into eyes.

Skin Protection: Avoid contact with skin. Wear chemical-resistant gloves. Wear protective clothing. In confined areas where the risk of skin exposure is much higher, impervious clothing should be worn.

Respiratory Protection: Not normally required under intended conditions of use.

SECTION IX - PHYSICAL DATA

PHYSICAL STATE: Viscous liquid

APPEARANCE: Light Yellow

ODOR THRESHOLD: Not available

FREEZING POINT: Not available

BOILING POINT: >260° C DENSITY: Not available

VAPOR DENSITY: Not available

VAPOR PRESSURE: <0.1 mm Hg @ 25° C

SPECIFIC GRAVITY: 1.17 pH: Not available

VISCOSITY: Not available EVAPORATION RATE: Not available

PARTITION COEFFICIENT: Not available

WATER SOLUBILITY: Negligible

SOLUBLE IN OTHER SOLVENTS: Aromatic Solvents

SECTION X - REACTIVITY AND STABILITY

CHEMICAL STABILITY: Yes

HAZARDOUS POLYMERIZATION: No

SENSITIVE TO MECHANICAL IMPACT: No

SENSITIVE TO STATIC DISCHARGE: No

INCOMPATIBLE MATERIALS: Avoid contact with strong oxidizing materials, strong Lewis or mineral acids, strong mineral and organic bases, especially primary and secondary amines.

CONDITIONS OF REACTIVITY: In reactions with many curing agents, considerable heat is released.

HAZARDOUS DECOMPOSITION PRODUCTS: When heated to decomposition, it may emit toxic fumes. Heating this resin above 149° C/330° F in the presence of air may cause oxidative decomposition; above 260° C/500° F, polymerization may occur.

SECTION XI - TOXICOLOGICAL INFORMATION

COMPONENT NAME

Bisphenol A/Epichlorohydrin Epoxy Resin

ACUTE TOXICOLOGICAL DATA

LD50 Oral Rat = 11400 mg/kg

LD50 Dermal Rabbit >20 mL/kg

ROUTES OF EXPOSURE: Exposure will most likely occur through skin contact or accidental ingestion. Based on the low volatility, this product is not considered to be a respiratory hazard under normal conditions of use.

IRRITATION: This product is expected to be a skin sensitizer, as well as irritating to both the skin and eye.

CARCINOGENICITY/MUTAGENICITY: The International Agency for Research on Cancer (IARC) has determined that data does not support classification of DGEHPA as a carcinogen. Similar resins are inactive in in vivo mutagenicity tests but have shown activity in in vitro microbial mutagenicity tests and have produced chromosomal aberrations in cultured rat liver cells.

PREEXISTING CONDITIONS: Preexisting eye, skin and respiratory disorders may be aggravated by exposure to this product. Preexisting skin or lung allergies may increase the chance of developing increased allergy symptoms from exposure to this product.

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SECTION XII - ECOLOGICAL INFORMATION

ENVIRONMENTAL EFFECTS: Do not allow product or runoff from fire control to enter storm or sanitary sewers, lakes, rivers, streams or public waterways. Block off drains and ditches. Provincial regulations require and federal regulations may require that environmental and/or other agencies be notified of a spill incident. Spill area must be cleaned and restored to original condition or to the satisfaction of authorities.

BIODEGRADABILITY: Not available

SECTION XIII - DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: Waste management priorities (depending on volumes and concentration of wastes) are 1. Recycle (reprocess), 2. Energy recovery (cement kilns, thermal power generation), 3. Incineration, 4. Disposal at a licensed waste disposal facility. Do not attempt to combust waste onsite.

SECTION XIV - TRANSPORTATION INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (DOT) CLASSIFICATION: This material is not subject to dot regulations under 49 CFR parts 171-180.

CANADIAN ROAD AND RAIL SHIPPING CLASSIFICATION: This material is not regulated under the Canadian Transportation of Dangerous Goods Regulations for transport by road and rail.

SECTION XV - REGULATORY INFORMATION

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and this MSDS contains all the information required by the Controlled Products Regulations.

FEDERAL REGULATORY STATUS:

Superfund Amendment & Reauthorization Act (SARA) Title III: Delayed (Chronic) Health Hazard.

Toxic Substance Control Act (TSCA) Status: This material is listed on the EPA/TSCA Inventory of Chemical Substances.

STATE REGULATION: The following chemicals are specifically listed by individual states: other product specifications and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

California Safe Drinking Water and Toxic Enforcement Act (Proposition 66):

Phenyl glycidyl ether (122-60-1) CA_65 C

CA_65 C = The chemical identified with this code is known to the State of California to cause cancer.

WHMIS CLASS/DESCRIPTION: Class D2B Other Toxic Effects - Irritant/Skin Sensitizer

DSL/NDSL STATUS: This product, or all components, is listed on the Domestic Substance List, as required under the Canadian Environmental Protection Act.

SECTION XVI - ADDITIONAL INFORMATION

WHMIS LABELS STATEMENTS:

Hazard Statements: May produce an allergic reaction on contact with skin.

Thermal burns may result from contact with hot material.

Irritating to skin.

Irritating to eyes.

Handling Statements: Avoid exposure to high temperatures and all sources of ignition.

Wear suitable gloves and eye protection.

Minimize skin contact.

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SECTION XVI - ADDITIONAL INFORMATION, cont.

Handling Statements, cont. : Wash thoroughly after handling.

Empty containers contain hazardous product residues, which can cause health hazards.

First Aid Statements: Wash contaminated skin with soap and water.

Flush eyes with water.

If overcome by vapors, remove to fresh air.

Obtain medical attention.

This Material Safety Data Sheet (MSDS) has been prepared in compliance with the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200. The information contained herein is based on data available to Fibergrate Composite Structures Inc. from Resolution Performance Products LLC and is believed to be accurate. However, Fibergrate makes no warranty expressed or implied concerning the accuracy of the information contained herein. It is the user's responsibility to determine the safety, toxicity and suitability of the product described herein. All materials may present unknown health hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards which exist.