

GLASTIC CORPORATION
MATERIAL SAFETY DATA SHEET
Grade FR4 Laminate

1. PRODUCT AND COMPANY IDENTIFICATION

COMPANY NAME:
Glastic Corporation
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Hours: 8:00 a.m. – 5:00 p.m. M – F (Eastern Time Zone)

TRADE NAME:
Grade FR4 Laminate

IDENTIFICATION NUMBER:
6.01 Revision 2

CHEMICAL NAME:
Fiberglass Reinforced Epoxy Resin Composite

SYNONYMS: None
PRODUCT USE: Fiberglass-reinforced epoxy composite for electrical and structural applications.

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Product is green colored sheets with no odor. Dust may cause irritation of eyes, skin, mucous membranes, and respiratory tract. Wear appropriate personal protective equipment. Keep individuals not involved in the clean-up out of the area. Pick up released product with appropriate implements and return to original container if reusable. If not reusable, place in appropriate containers for disposal. Although the product itself is non-hazardous, material collected during clean-up operations may be contaminated and should be treated as hazardous unless specific testing, including TCLP, shows the collected material to be non-hazardous. Product is not expected to present an environmental hazard.

IN ITS MANUFACTURED AND SHIPPED STATE, THE PRODUCT IS CONSIDERED NON-HAZARDOUS. PROCESSING, HOWEVER, MAY GENERATE DUST AND PARTICULATE MATTER.

POTENTIAL HEALTH EFFECTS:

Inhalation: Dusts or particulates may cause irritation of the mucous membranes and respiratory tract.

Eye: Dusts and particulates may cause irritation of the eyes.

Skin Contact: Dusts and particulates may cause irritation of the skin.

Skin Absorption: Not known to be absorbed through the intact skin.

Ingestion: Not expected to be an important route of entry into the body. Ingestion of large quantities of the product dusts or particulates may cause gastric discomfort or distress.

Chronic and Carcinogenicity: Prolonged exposure to dusts or particulates may cause dermatitis. Pre-existing skin and lung conditions may be aggravated by exposure to the components of the product.

OSHA Status: Not hazardous.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Proprietary Polymerized Mixture of Epoxy Resins, Binaryamic, and Glass Cloth.

4. FIRST AID MEASURES

- Inhalation: Remove exposed person to fresh air. If breathing is difficult, oxygen may be administered. If breathing has stopped, artificial respiration should be started immediately. Seek medical attention.
- Eyes: Flush with tepid water for at least 20 minutes, holding the eyelids wide open. Seek medical attention if irritation develops.
- Skin: Wash thoroughly with mild soap and water. Seek medical attention if irritation develops.
- Ingestion: Not expected to be an important route of entry into the body. If large amounts of product dusts or particulates are ingested, seek medical attention.

5. FIRE FIGHTING MEASURES

Product will not burn. Material in or near fires should be cooled with a water spray or fog if compatible with fire fighting techniques for the other materials involved in the fire. A self-contained breathing apparatus, operating in the positive-pressure mode, and full fire fighting gear should be worn for combating fires.

6. ACCIDENTAL RELEASE MEASURES

Pick up released product with appropriate implements and return to original container if reusable. If not reusable, place in appropriate containers for disposal. Appropriate personal protective equipment cited in Section 8 should be worn during all clean-up operations. Although the product itself is non-hazardous, materials collected during clean-up operations may be contaminated and should be treated as hazardous unless specific testing, including TCLP, shows the collected materials to be non-hazardous.

7. HANDLING AND STORAGE

Do not store with or near incompatible materials cited in Section 10. Store out of contact with the elements. Appropriate personal protective equipment cited in Section 8 should be worn during handling. Good housekeeping and engineering practices should be employed to prevent the generation and accumulation of dusts. Wet mopping or vacuuming is recommended to clean up any dusts that may be generated during handling and processing. Wash hands and face thoroughly before eating, drinking, or smoking.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<u>Component</u>	<u>CAS #</u>	<u>Percent</u>	<u>ACGIH TLV</u>	<u>OSHA PEL</u>	<u>Units</u>
Proprietary Polymerized Mixture of Epoxy Resins, Binaryamic, and Glass Cloth	Not Est.	100	Not Est.	Not Est.	Not Est.
Inert or Nuisance Dust	None	NA	10	15	mg/m ³

ACGIH TLVs are based on 2005 values. OSHA PELs are based on 29 CFR 1910.1000 (7-1-06 Edition).

8. EXPOSURE CONTROLS / PERSONAL PROTECTION (CONTINUED)

Engineering Controls: Not normally required under normal and expected conditions of use. If significant amounts of dust are generated during processing, the operation should be evaluated by a professional industrial hygienist and local exhaust ventilation provided if deemed necessary. Local exhaust ventilation systems should be designed by a professional engineer.

Respiratory Protection: Not normally required under normal and expected conditions of use. If significant amounts of dust are generated during processing, the operation should be evaluated by a professional industrial hygienist and appropriate respiratory protection used, if deemed necessary. All use of respiratory protections should be in accordance with the provisions of OSHA's Respiratory Protection Standard, 29 CFR 1910.134.

Eye Protection: Safety glasses with sideshields are recommended for all operations.

Protective Gloves: Polymeric gloves are recommended to prevent possible irritation. PVC or similar materials are recommended.

General: A polymeric coated apron or other body covering is recommended where regular work clothing may become contaminated with the product. All soiled or dirty clothing and personal protective equipment should be thoroughly cleaned before reuse.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND PHYSICAL STATE: Green sheets	OCTANOL/WATER PARTITION COEFFICIENT: ND
VAPOR DENSITY (AIR =1): NA	MELTING POINT: ND
VAPOR PRESSURE: NA	EVAPORATION RATE (BUTYL ACETATE = 1): NA
ODOR: None	SPECIFIC GRAVITY/BULK DENSITY: 1.8 – 1.9 g/cc
% VOLATILE BY VOLUME: Not Volatile	BOILING POINT: ND
% SOLUBILITY (H ₂ O): None	pH: NA
Flash Point: NA LEL: NA UEL: NA	Auto Ignition Temperature: NA
OTHER: NA	

10. STABILITY AND REACTIVITY

Stability: Product is stable.

Polymerization: Hazardous polymerization will not occur.

Incompatibility: Do not store with or near strong acids or bases or strong oxidizing or reducing agents.

Thermal Decomposition: Thermal decomposition may produce dense smoke, oxides of carbon, nitrogen, and sulfur, and low molecular weight organic species whose composition and toxicity has not been determined.

Special Sensitivity: None that are known.

11. TOXICOLOGICAL INFORMATION

Detailed toxicology studies have not been conducted on the product. It is, however, expected to have a very low degree of acute and chronic toxicity. All components in the product are bound in a polymeric matrix and are not expected to be bio-available.

12. ECOLOGICAL INFORMATION

Detailed studies on the environmental fate of the product have not been conducted. The product is, however, not expected to present a hazard to aquatic and terrestrial flora and fauna.

13. DISPOSAL CONSIDERATIONS

As supplied, product is considered non-hazardous. It should be disposed of in an EPA approved landfill in accordance with all local, state, and federal regulations. If used or waste product is disposed of, testing, including TCLP, should be conducted to determine hazard characteristics.

14. TRANSPORT INFORMATION

Not currently regulated under Department of Transportation regulations.

15. REGULATORY INFORMATION

U.S. TSCA Inventory: All ingredients are on the inventory or are exempt from listing.

SARA Section 313: The product does not contain any components which are reportable under Section 313 of the Superfund Amendments and Reauthorization Act of 1986.

OSHA Hazard Communication Categories: Irritant, Lung Hazard, Skin Hazard

SARA Hazard Categories: Not hazardous as supplied. In use: Acute Hazard

California Proposition 65: This product is not expected to contain any chemicals known to the State of California to cause cancer or birth defects.

Canada - WHMIS Classification: Non-Hazardous.

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

European Regulations: This product complies with the RoHS directive 2002/95/EC, the commission decision 2005/618/EC and WEEE requirements under commission directive 2002/96/EC.

16. OTHER INFORMATION

Not Est. = Not Established; NA = Not Applicable; ND = Not Determined

Prepared By: Glastic Corporation.

Preparation /Revision Date: Issue: 10/2006; Latest Revision: 12/2006; Supersedes 10/2006 revision.

Reason for Revision: Review all information. Compliance with the ANSI Z400.1-2004 standard.

16. OTHER INFORMATION (CONTINUED)**IMPORTANT NOTICE FROM GLASTIC CORPORATION**

All of the information, suggestions, and recommendations pertaining to the properties and uses of the Glastic product described herein are based on tests and data believed to be accurate, however, the final determination regarding the suitability of any material described herein for the use contemplated, the manner of use, and whether the use infringes on any patents is the sole responsibility of the user. THERE IS NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR USE. Under no circumstances shall we be liable for incidental or consequential loss or damage.

GRADE FR4 LAMINATE

- CAUTION:** Avoid breathing dusts and particulate matter that may be generated during processing or handling. Dusts and particulate matter may cause irritation of the eyes, skin, mucous membranes and respiratory tract. Wear appropriate personal protective clothing. Provide adequate ventilation for all operations.
- CONTAINS:** Proprietary polymerized mixture of epoxy resin, woven glass fabric, and pigments. Contact Glastic Corporation for the pigments in a specific product, specifying the part number. Consult Material Safety Data Sheet for Grade FR4 Laminate for additional information.
- FIRST AID:** For overexposure, remove to fresh air. If breathing is difficult or has stopped, administer oxygen or artificial respiration as indicated. Seek medical attention. If dusts or particulate matter enters the eyes, flush with tepid water for at least 20 minutes, holding eyelids open. If dusts or particulate matter gets on skin, wash thoroughly with mild soap and water. If eye or skin irritation develops, seek medical attention.

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