



THAI LAMINATE MANUFACTURER CO.,LTD

MATERIAL SAFETY DATA SHEET

FR4 Unclad Epoxy: TS-4000

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SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: FR4 Unclad Epoxy TS-4000
PRODUCT USE: For lapping and polishing precision electronic part
MANUFACTURER: THAI LAMINATE MANUFACTURER CO.,LTD.
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Kwang Lumplatew, Lat Krabang
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SECTION 2: COMPOSITION/INFORMATION ON IDENTIFICATION

Solid laminate made of glass fibers and flame-resistant epoxy resin under pressure and high temperature. The synthetic thermosetting resin are fully cured in the product. This product is not listed by any of the cancer research agencies as a cancer causing agent.

This product may contain trace amounts of solvents used on the manufacturing of the base resins.

Fibrous Glass: This product contains fibrous glass. Although early studies showed possible links between fibrous glass and cancer, current research indicates no links between fibrous glass and human cancer. Glass wool, which differs from glass in its morphology, continues to be evaluated as a possible human carcinogen. (Group 2B) by the IARC.

OSHA PEL = 5 mg/m³ (resp); 15 mg/m³ (total)

ACGIH TLV = 5 mg/m³

SECTION 3: HAZARDS IDENTIFICATION

Machining, grinding or sawing this material may generate harmful dusts. Continuous filament glass fiber is not considered fibrogenic, however, it is woven from E-Glass fibers which are listed by IARC as "special purpose glass fibers" and designated as "possibility of carcinogenic in humans." Inhalation of copper fumes, while not expected to occur under typical conditions of use, may cause metal fume fever.

SECTION 4: FIRST AID MEASURES

SEEK IMMEDIATE MEDICAL ATTENTION IF IRRITATION OCCURS

INHALATION: If dust from dry fabrications is not properly exhausted, a facial respirator mask should be worn for nuisance dust.

EYE: Use proper eye protection when cutting or machining this material. In the event that dust or particles contact the eyes during machining or cutting, administer eyewash in same manner consistent with company safety policy and consult physician.

SKIN: Remove contaminated coating. Wash skin thoroughly with soap and tepid water.

INGESTION: Not determined.

SECTION 5: FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Water, foam, dry powder, CO₂

In Case of Fire, the following Hazardous Gases can be Produced: CO₂ and CO

Special Protective Equipment: For major fires, Self-contained breathing apparatus and personal protective equipment may be needed for large fires.

SECTION 6: HANDLING AND STORAGE

HANDLING and STORAGE:

No particular requirements for handling or storage of this product.

SECTION 7: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROL: Use local exhaust to control dust.

PERSONAL PROTECTIVE EQUIPMENT:

- **RESPIRATORY PROTECTION:** Dust generated during cutting, trimming and drilling should be used with local exhaust during these processes, and operator should wear gauze mask to prevent inhalation. May require the use of a NIOSH approved respirator.
- **SKIN PROTECTION:** Wear gloves during prolonged contact to avoid skin irritation from dust.
- **EYE PROTECTION:** Use safety glasses or a face shield when machining, grinding or sawing this material.
- **WORK/HYGIENE PRACTICES:** Good personal hygiene should be exercised by all users of this product.



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SECTION 8: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: White / Natural color sheets of varying thickness

PHYSICAL STATE: Solid

ODOR: None

SPECIFIC GRAVITY: 1.8 +/- 0.25

SOLUBILITY IN WATER: Negligible in water

pH: N/A

BOILING POINT: N/A

VAPOR PRESSURE (mm. Hg and Temperature): N/A

FLASH POINT: N/A

SECTION 9: STABILITY AND REACTIVITY

NORMALLY STABLE: Stable

INCOMPATIBILITIES: Strong oxidizing agents

HAZARDOUS DECOMPOSITION PRODUCTS: Hydrocarbon of variable composition, hydrogen bromide, bromine, COx, NOx

HAZARDOUS POLYMERIZATION: Will not occur

SECTION 10: TOXICOLOGICAL INFORMATION

This product is considered to be harmless to health if handled in the correct manner.

SECTION 11: ECOLOGICAL INFORMATION

POSSIBLE ENVIRONMENTAL EFFECT/ENVIRONMENTAL FLOW: N/A

SECTION 12: DISPOSAL CONSIDERATIONS

This product can normally be disposed of as normal solid waste for landfills. It is the user responsibility to comply with all local and state laws for proper disposal. Always consult the local regulatory agencies for proper disposal. The product is not bio-degradable.

SECTION 13: TRANSPORT INFORMATION

International Transportation Regulation: This product is considered non-hazardous and can be transported as such.

SECTION 14: REGULATION INFORMATION

None specified.

OTHER INFORMATION:

CURRENT ISSUE DATE: June 22, 2010

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