



Advanced Circuit Materials

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MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME: TMM®-8m Molding Compound - temperature stable microwave laminate

CHEMICAL NAME: NA

CHEMICAL FAMILY: Hydrocarbon/Mineral Composite

HMIS RATING: H 1 F 0 R 0

CAS NUMBER: NA
(All components are TSCA listed.)

EMERGENCY PHONE: 860-774-9605

CHEMTREC: 800-424-9300

2. COMPOSITION/INFORMATION ON INGREDIENTS

<u>Chemical Name</u>	<u>CAS No.</u>	<u>%</u>	<u>OSHA PEL</u>	<u>ACGIH TLV</u>
Barium Titanate (Nuisance Dust)	12047-27-7	< 70	5.0 mg/m ³ (Resp.) 15 mg/m ³ (Total)	3.0 mg/m ³ (Resp.) 10 mg/m ³ (Total)
Barium Oxide (Soluble Barium)	1304-25-5	< 2	0.5 mg/m ³ (As Soluble Ba)	0.5 mg/m ³ (As Soluble Ba)
Silica (Amorphous, Fused)	60676-86-0	< 28	<u>80 mg/m³</u> <u>%SiO₂</u>	3 mg/m ³ (Resp.) PNOS
*Fibrous Glass	65997-17-3	< 2	5.0 mg/m ³ (Respirable Dust)	5 mg/m ³ (Inhalable)

The remaining ingredients are not hazardous as defined in OSHA's Hazard Communication Standard 29 CFR 1910.1200.

3. HAZARDS IDENTIFICATION

EFFECTS OF OVEREXPOSURE: None anticipated with normal handling. Machining may cause dusting. Processing material at temperatures exceeding decomposition temperature may release toxic fumes.

INHALATION: Dusts may cause respiratory irritation.

EYE CONTACT: Dusts may cause irritation.

SKIN CONTACT: Dusts may cause irritation.

INGESTION: Not a likely route of exposure.

CHRONIC: Glass fiber filaments: IARC Group 3 (Unclassifiable as to carcinogenicity to humans) Chronic exposure to finely divided particles of soluble barium may cause poisoning (i.e. vomiting, colic, diarrhea, convulsive tremors, etc.). Trace amounts of barium may be present in this product; however, barium poisoning is unlikely.

4. FIRST-AID MEASURES

INHALATION: (Fumes & Dust)	Remove to fresh air – seek medical attention.
EYE CONTACT: (Dust)	Flush immediately with large amounts of water. Consult physician.
SKIN CONTACT: (Dust)	Wash area of contact thoroughly with soap and water. Consult physician.
INGESTION: (Dust)	Not a likely route of exposure. Seek medical attention if ingested.

5. FIRE-FIGHTING MEASURES

FLASH POINT:	NA	Flammable Limits:	LEL	NA	UEL	NA
METHOD USED:	NA					
AUTOIGNITION TEMPERATURE:	Unknown (High)					
EXTINGUISHING MEDIA:	X X	Water Fog Dry Chemical	X	Foam Other	X	CO ₂
SPECIAL FIRE FIGHTING PROCEDURES:	Use self-contained breathing apparatus.					
UNUSUAL FIRE AND EXPLOSION HAZARDS:	Decomposition in a fire may cause toxic fumes to be emitted.					
HAZARDOUS DECOMPOSITION PRODUCTS:	Possible products of combustion include carbon monoxide and carbon dioxide.					

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS:	Objectionable odor is created by a small volume constituent (< 1%) and is not expected to create a health hazard, other than mercaptan-like odors, under normal handling in areas with adequate general exhaust present.
ENVIRONMENTAL PRECAUTIONS:	NA
CLEANING METHODS:	Normal clean up. Avoid creating airborne dust.
RESPONSE TO SPILLS:	Sweep or pick up and return to container. Avoid creating airborne dust.

7. HANDLING AND STORAGE

HANDLING/STORAGE:	Store in designated storage area.
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8. ENGINEERING CONTROLS/PERSONAL PROTECTION

RESPIRATORY PROTECTION:	If mechanical ventilation is absent or inadequate during machining or odors are objectionable, use NIOSH/MSHA approved respirator for particulates and/or organic vapors respectively.
<u>VENTILATION</u>	
LOCAL:	Use local exhaust in machining and molding operations.
GENERAL:	Recommended as with all industrial operations.
<u>PERSONAL PROTECTION</u>	
HAND:	Wear gloves to avoid mechanical irritation (leather gloves, etc.).
EYE:	Use safety glasses as with all industrial operations.

SKIN: NA
OTHER: Do not smoke or keep smoking materials in areas where material is machined or excessive dusting occurs. Wash thoroughly before eating or smoking.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	White Sheet
ODOR:	Mercaptan Odor
PHYSICAL STATE:	Solid
BOILING POINT:	NA
MELTING POINT:	NA
FREEZING POINT:	NA
WATER SOLUBILITY:	Nil
VAPOR PRESSURE:	NA
SPECIFIC GRAVITY:	NA
PARTITION COEFFICIENT:	NA
EXPLOSIVE PROPERTIES:	NA
EVAPORATION RATE:	NA
DENSITY:	NA
VISCOSEITY:	NA
IGNITION:	NA
pH:	NA

10. STABILITY AND REACTIVITY

STABLE UNSTABLE

CONDITIONS TO AVOID: None under normal use.
MATERIALS TO AVOID: Strong oxidants.
HAZARDOUS POLYMERIZATION: May Occur Does Not Occur
HAZARDOUS DECOMPOSITION PRODUCTS: See Section 5.

11. TOXICOLOGICAL INFORMATION

CARCINOGENIC STATUS: IARC Group 3 (Unclassifiable as to carcinogenicity to humans.)

12. ECOLOGICAL INFORMATION

NA

13. DISPOSAL CONSIDERATION

ENVIRONMENTAL TOXICITY DATA: NA
WASTE DISPOSAL METHOD: Dispose of in accordance with all local, state and federal regulations.
CONTAINER DISPOSAL: Dispose of in accordance with all local, state and federal regulations.

14. TRANSPORT INFORMATION

DOT SHIPPING NAME: Plastic Molding Material
DOT HAZARD CLASSIFICATION: NA
PACKING GROUP: NA
UN/NA CODE: NA

15. REGULATORY INFORMATION

TSCA
(*Toxic Substances Control Act*): All ingredients are TSCA listed.

CERCLA
(*Comprehensive Emergency Response, Compensation, and Liability Act*): NA

SARA TITLE III
(*Superfund Amendments and Reauthorization Act*): NA

311/312 HAZARD CATEGORIES: None

This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and 40 CFR 372:

<u>CAS #</u>	<u>CHEMICAL NAME</u>	<u>PERCENT BY WEIGHT</u>
NA	Barium Compound	< 70

16. OTHER INFORMATION

NA = Not Applicable

FILE: TMM8M.doc

NE = Not Established

99272

PNOS = Particles Not Otherwise

Specified

DATE PREPARED: 11/16/2009

PREPARED BY: Greg Sullivan, CIH

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