



# MATERIAL SAFETY DATA SHEET

## SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT:** M-Bond GA-61 (Part A)

November 23, 2005

Vishay Micro-Measurements  
Post Office Box 27777  
Raleigh, NC 27611

**MSDS # MGM016I**

919-365-3800

CHEMTREC 1-800-424-9300 (U.S.)  
703-527-3887 (Outside U.S.)

NOTE: CHEMTREC numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

## SECTION 2: HAZARDOUS INGREDIENTS / IDENTITY INFORMATION

CAS NUMBER	CHEMICAL IDENTITY	%
28064-14-4	Polyglycidyl Ether of Phenol-Formaldehyde	<96
14807-96-6	Talc	<14
25068-38-6	Epoxy Resin	10
106-89-8	Epichlorohydrin	Trace

## SECTION 3: HEALTH HAZARD DATA

### Routes of Entry:

**Inhalation:** YES    **Skin:** YES    **Ingestion:** Accidental

**Health Hazards (Acute and Chronic):** May cause allergic skin reaction in susceptible individuals. May cause sensitization with repeated or prolonged contact.

**Carcinogenicity:** NTP: Not Known  
IARC Monographs: Not Known  
OSHA Regulated: Not Known

NOTE: This product contains a particulate(s) that is considered hazardous per OSHA (29CFR1910.1200) and is listed in Section 2 as a precautionary warning. Under normal conditions of use, this product, as supplied, does not pose a health risk from particulate matter. Physical degradation of the cured product (i.e., sanding, abrading, etc.) may pose a dust hazard. Repeated inhalation of such dust may cause lung injury.

#### **Signs and Symptoms of Exposure:**

**INHALATION:** Vapors at high temperatures may cause irritation.

**EYE CONTACT:** May cause mild eye irritation. Direct contact with the product or exposure to vapors or mist may cause stinging, tearing, redness.

**SKIN CONTACT:** May cause allergic skin reaction.

**INGESTION:** May cause gastrointestinal irritation.

**Conditions Generally Aggravated by Exposure:** Overexposure may aggravate existing eye, skin, and/or respiratory disorders.

### **SECTION 4: EMERGENCY AND FIRST AID PROCEDURES**

**INHALATION:** Remove to well ventilated area. If difficulty in breathing, get medical attention immediately.

**EYE CONTACT:** Immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

**SKIN CONTACT:** Immediately flush skin with soap and plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash and thoroughly clean contaminated clothing and shoes before reuse. Consult a physician.

**INGESTION:** If swallowed, consult a physician. Never give anything by mouth to an unconscious person.

### **SECTION 5: FIRE AND EXPLOSION HAZARD DATA**

**Flash Point (Method Used):** >200°F (>93.3°C)

**Flammable limits:** LEL: Not determined UEL: Not determined

**Extinguishing Media:** Foam, carbon dioxide, dry chemical and vaporizing liquid type extinguishing agents have all been found suitable for use on flammable liquid fires of moderate size. Water spray (fog) is particularly effective on fires in flammable liquids and volatile solids having flashpoints above 100°F (38°C), but with liquids having flashpoints above 212°F (100°C), frothing may occur.

**Special Firefighting Procedures:** Firefighters should wear self-contained breathing apparatus to avoid inhalation of smoke or vapors. Water or foam may cause frothing when streams are directed into hot burning liquid.

**Unusual Fire and Explosion Hazards:** Decomposition and combustion products may be toxic.

#### SECTION 6: ACCIDENTAL RELEASE MEASURES

**Steps to be taken if material is released or spilled:** Remove all ignition sources. Provide adequate ventilation. Avoid breathing vapors. Shut off sources of spill if it can be done safely. Use non-sparking tools. Absorb with inert material and dispose of in accordance with applicable regulations.

#### SECTION 7: EXPOSURE CONTROLS -- PERSONAL PROTECTION

**Respiratory Protection:** Respiratory protection may be required if material is used in poorly ventilated areas or if material is sprayed or heated.

**Ventilation:** Use with adequate ventilation. Provide general dilution or local exhaust ventilation in volume and pattern to keep the air contaminant concentration below the applicable exposure limit.

**Protective Gloves:** Impervious gloves are required.

**Eye Protection:** Use safety eyewear designed to protect against splash of liquids.

**Other Protective Clothing or Equipment:** As needed to minimize contact.

**Work / Hygienic Practices:** Wash thoroughly after handling. Emergency eyewash and safety shower should be available.

#### SECTION 8: HANDLING AND STORAGE

**Precautions to be taken in handling and storing:** Do not store above 120°F (48.9°C). Keep closure tight and container upright to prevent leakage. Store container out of sunlight and away from heat, sparks, and flames. Store only in well-ventilated areas.

**Other Precautions:** Containers may be hazardous when empty. Empty containers may retain product residue (vapor, liquid, or solid). Do not get in eyes. Avoid skin contact. Prevent repeated or prolonged breathing of vapor or spray mist. Avoid contact with or breathing of vapors during curing process.

<b>SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES</b>
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<b>Boiling Point:</b>	N/A
<b>Vapor Pressure (mmHg):</b>	N/A
<b>Vapor Density (Air = 1):</b>	N/A
<b>Specific Gravity (H<sub>2</sub>O = 1):</b>	1.27
<b>Melting Point:</b>	Not known
<b>Evaporation Rate (BuAc = 1):</b>	N/A
<b>Volatile Organic Compounds:</b>	0%
<b>Solubility in Water:</b>	N/E

**Appearance and Odor:** Off-white to dark brown viscous liquid; low odor.

<b>SECTION 10: STABILITY AND REACTIVITY DATA</b>
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**Stability:** Stable.

**Conditions to Avoid:** Excess heating over long periods of time degrades resin.

**Incompatibility (Materials to Avoid):** Strong oxidizing agents, bases, acids and amines.

**Hazardous Decomposition or By-products:** The by-products expected in incomplete pyrolysis or combustion of epoxy resins are mainly phenolics, carbon monoxide and water.

**Hazardous Polymerization:** Will not occur.

<b>SECTION 11: TOXICOLOGICAL INFORMATION</b>
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Polyglycidyl Ether of Phenol-Formaldehyde

OSHA PEL:	N/E
ACGIH TLV:	N/E
OTHER:	LD <sub>50</sub> (ORAL-RAT) 10,000 mg/kg LD <sub>50</sub> (DERMAL-RABBIT) 6000 mg/kg

Diglycidyl Ether of Bisphenol A

OSHA PEL:	N/E
ACGIH TLV:	N/E
OTHER:	LD <sub>50</sub> (IPR-RAT) 2400 mg/kg LD <sub>50</sub> (ORAL-RAT) 10,000 mg/kg LD <sub>50</sub> (DERMAL-RABBIT) 6000 mg/kg

Talc

OSHA PEL: N/E  
 ACGIH TLV: 2.0 mg/m<sup>3</sup>  
 OTHER:

<b>SECTION 12: DISPOSAL CONSIDERATIONS</b>
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**Waste Disposal Method:** Dispose of in accordance with local, state, and federal regulations.

<b>SECTION 13: TRANSPORTATION INFORMATION</b>
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SHIPPING NAME	CLASS	UN NUMBER
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Not Required -- Non-hazardous for transportation.

<b>SECTION 14: REGULATORY INFORMATION</b>
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**SECTION 313 SUPPLIER NOTIFICATION:**

This product contains a toxic chemical or chemicals (as listed below) subject to the reporting requirements of Section 313 Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR Part 372.

CAS NUMBER	CHEMICAL NAME	% BY WEIGHT
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Not Listed

**TSCA NOTIFICATION:**

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

**CALIFORNIA PROPOSTION 65 STATUS**

**WARNING:** This product contains a chemical known to the State of California to cause cancer.

**WARNING:** This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

<b>SECTION 15: OTHER INFORMATION</b>
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To the best of our knowledge, the information provided above meets the requirements of the United States Occupational Safety and Health Act and regulations established under 29 CFR 1910.1200 (g)(2)(c)(1)-(4) for a mixture of hazardous chemicals which has not been tested as a whole. The data provided on this Material Safety Data Sheet is from manufacturers of the original components. Vishay Micro-Measurements specifically disclaims any and all form of liability and/or responsibility for the application of this product.