



MATERIAL SAFETY DATA SHEET

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT: M-Bond 43-B

November 18, 2005

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

MSDS # MGM001J

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	%
78-93-3	Methyl Ethyl Ketone	38.0
1330-20-7	Xylene	24.0
25068-38-6	Reaction Products of Epichlorohydrin and Bisphenol-A (Epoxy Resin)	18.0
123-42-2	Diacetone Alcohol	13.0
80-08-0	4,4'-Sulfonyldianiline	6.0
71011-26-2	Rheological Additive	1.0

SECTION 3: HEALTH HAZARD DATA

Routes of Entry:

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

Health Hazards (Acute and Chronic): Prolonged skin contact may defat the skin and produce dermatitis. Chronic exposure may cause central nervous system effects. Chronic inhalation may cause headache, loss of appetite, nervousness, and pale skin. Repeated exposure of the eyes to high concentrations of vapors may cause reversible eye damage. Repeated exposure to xylene can damage bone marrow, causing low blood cell count. May damage the liver and kidneys.

Carcinogenicity:	NTP:	Not Listed
	IARC Monographs:	Not Listed
	OSHA Regulated:	Not Listed

Signs and Symptoms of Exposure:

INHALATION: Inhalation of vapors may be irritating to nose and throat. Inhalation of high concentrations may cause headache, nausea, vomiting, dizziness, drowsiness, and shortness of breath. Higher concentrations may cause central nervous system depression and unconsciousness.

EYE CONTACT: Vapors are irritating to the eyes. Splashes can produce painful irritation and eye damage.

SKIN CONTACT: May cause skin irritation. Symptoms include redness, itching, and pain. Prolonged contact may cause dermatitis. May be absorbed through the skin with possible systemic effects.

INGESTION: Ingestion causes burning sensation in mouth and stomach, nausea, vomiting and salivation. May cause irritation to the gastrointestinal tract with symptoms including nausea, vomiting and diarrhea. Aspiration into lungs can produce severe lung damage and is a medical emergency. Other symptoms may include those indicated for inhalation.

Medical Conditions Generally Aggravated by Exposure: Persons with pre-existing skin disorders or eye problems or impaired respiratory function may be more susceptible to the effects of the substance.

SECTION 4: EMERGENCY AND FIRST AID PROCEDURES

INHALATION: If inhaled, move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: In case of eye contact, immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Get medical attention.

SKIN CONTACT: In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Launder contaminated clothing before reuse. Thoroughly clean shoes before reuse.

INGESTION: Aspiration hazard. If swallowed, vomiting may occur spontaneously, but DO NOT INDUCE. If vomiting occurs, keep head below hips to prevent aspiration into lungs. Never give anything by mouth to an unconscious person. Call a physician immediately.

SECTION 5: FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used): 16°F (-9°C) COC

Autoignition Temperature: 759°F (404°C)

Flammable limits: LEL: 1.0% UEL: 11.4%

Extinguishing Media: Dry chemical, foam or carbon dioxide.

Special Firefighting Procedures: Firefighters should wear proper protective equipment and self-contained breathing apparatus with full facepiece operated in positive pressure mode. Move container from fire area if it can be done without risk. Use water to keep fire-exposed containers cool.

Unusual Fire and Explosion Hazards: Vapors may flow along surfaces to distant ignition sources and flash back. Closed containers exposed to heat may explode. Contact with strong oxidizers may cause fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Steps to be taken if material is released or spilled: Ventilate area of leak or spill. Keep unnecessary and unprotected personnel from entering. Wear self-contained breathing apparatus and full protective clothing. Shut off ignition sources; no flares, smoking or flames in area. Stop leak if you can do so without risk. Use water spray to reduce vapors. Take up with sand or other non-combustible absorbent material and place into container for later disposal. Use non-sparking tools and equipment. Do not flush to sewer.

SECTION 7: EXPOSURE CONTROLS -- PERSONAL PROTECTION

Respiratory Protection: If the exposure limit is exceeded, a full facepiece respirator with organic vapor cartridge may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest.

Ventilation: A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.

Protective Gloves: Neoprene gloves are recommended.

Eye Protection: Use chemical safety goggles and/or a full faceshield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

Other Protective Clothing or Equipment: Neoprene or other impervious apron as needed to prevent skin contact.

Work / Hygienic Practices: Wash hands thoroughly after using product.

SECTION 8: HANDLING AND STORAGE

Precautions to be taken in handling and storing: Keep container tightly closed. Store in a cool, dry, well-ventilated, flammable storage area. Isolate from incompatible materials.

Other Precautions: Storage and use areas should be "No Smoking" areas. Containers of this material may be hazardous when empty since they retain product residues (vapor, liquid). Observe all warnings and precautions.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point:	176°F (80°C)
Vapor Pressure (mmHg):	78 @ 68°F (20°C)
Vapor Density (Air = 1):	3.5
Specific Gravity (H₂O = 1):	0.92
Melting Point:	-123°F (-86°C)
Evaporation Rate (BuAc = 1):	2.7
Volatile Organic Compounds:	738g/liter
Solubility in Water:	<20%

Appearance and Odor: Amber colored liquid, acetone-like odor.

SECTION 10: STABILITY AND REACTIVITY DATA

Stability: Stable under ordinary conditions of use and storage.

Conditions to Avoid: Heat, flame and other sources of ignition.

Incompatibility (Materials to Avoid): Oxidizing materials, caustics, amines, ammonia, strong bases and acids, reducing agents, aluminum alkalis, isocyanates.

Hazardous Decomposition or By-products: Carbon dioxide, and carbon monoxide may form when heated to decomposition.

Hazardous Polymerization: Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

Methyl Ethyl Ketone

OSHA PEL:	200 ppm (TWA)
ACGIH TLV:	200 ppm (TWA)
OTHER:	300 ppm (STEL)
	LD ₅₀ ORAL (RAT) 2737 mg/kg
	LD ₅₀ SKIN (RABBIT) 6480 mg/kg
	LC ₅₀ INHAL (RAT) 23500 mg/m ³ - 8 hr.

Xylene

OSHA PEL: 100 ppm (TWA)
 ACGIH TLV: 100 ppm (TWA)
 OTHER: 150 ppm (STEL)
 LD₅₀ ORAL (RAT) 4300 mg/kg
 LC₅₀ INHAL (RAT-4H) 5000 ppm
 LD₅₀ SKIN (RABBIT) >1700 mg/kg

Reaction products of Epichlorohydrin and Bisphenol-A (Epoxy Resin):

OTHER: LD₅₀ ORAL (RAT) >5000 mg/kg
 LD₅₀ SKIN (RABBIT) 20,000 mg/kg

Diacetone Alcohol

OSHA PEL: 50 ppm (TWA)
 ACGIH TLV: 50 ppm (TWA)
 OTHER: LD₅₀ ORAL (RAT) >4 g/kg
 LD₅₀ SKIN (RABBIT) 13500 mg/kg

4,4-Sulfonydianiline

None established

Rheological Additive

OSHA PEL: *10 mg/m³ (Total nuisance dust) 8 hr TWA
 *5 mg/m³ (Total respirable dust) 8 hr TWA
 ACGIH TLV: *10 mg/m³ (Total nuisance dust) 8 hr TWA
 OTHER: LD₅₀ ORAL (RAT) 20000 mg/kg

*Due to this product's physical composition, the release or generation of dust is not expected to occur under normal conditions of use.

SECTION 12: DISPOSAL CONSIDERATIONS
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Waste Disposal Method: Waste should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use, or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state, and local requirements.

SECTION 13: TRANSPORTATION INFORMATION

SHIPPING NAME	CLASS	PACKING GROUP	UN NUMBER
Ethyl Methyl Ketone (Methyl Ethyl Ketone) Flammable Liquid	3	II	1193

SECTION 14: REGULATORY INFORMATION

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
78-93-3	Methyl Ethyl Ketone	38.0
1330-20-7	Xylene	24.0

TSCA NOTIFICATION:

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

SECTION 15: OTHER INFORMATION

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.