MATERIAL SAFETY DATA SHEET

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT: M-Bond Curing Agent - Type 10 November 22, 2005

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

919-365-3800

MSDS # MGM002K

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	%
112-24-3	Triethylenetetramine	98 - 100

SECTION 3: HEALTH HAZARD DATA

Routes of Entry:

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

Health Hazards (Acute and Chronic): None known.

Carcinogenicity:

NTP:	Not listed
IARC Monographs:	Not listed
OSHA Regulated:	Not listed

Signs and Symptoms of Exposure:

INHALATION: May cause respiratory sensitization in susceptible individuals. Excessive exposure may cause irritation to upper respiratory tract.

EYE CONTACT: May cause pain. May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness.

SKIN CONTACT: Short single exposure may cause severe skin burns. Has caused allergic skin reactions in some humans. A single prolonged exposure may result in the material being absorbed in harmful amounts.

INGESTION: Single dose oral toxicity is low. Ingestion may cause gastrointestinal irritation or ulceration. Ingestion may cause burns of mouth and throat.

Conditions Generally Aggravated by Exposure: Can cause allergic reaction and acts as a sensitizer in susceptible individuals.

SECTION 4: EMERGENCY AND FIRST AID PROCEDURES

INHALATION: Remove to fresh air if effects occur. Consult a physician.

EYE CONTACT: Immediate and continuous irrigation with flowing water for at least 30 minutes is imperative. Prompt medical consultation is essential.

SKIN CONTACT: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes and other leather items or articles which cannot be decontaminated. Call a physician if irritation persists.

INGESTION: Do NOT induce vomiting. Give large amounts of water or milk if available and transport to medical facility.

NOTE TO PHYSICIAN: May cause tissue destruction leading to stricture. If lavage is performed, suggest endotracheal and/or esophagoscopic control. If burn is present, treat as thermal burn, after decontamination. No specific antidote. Supportive care. Treatment based on judgement of the physician in response to reactions of the patient. Excessive exposure may aggravate pre-existing asthma.

SECTION 5: FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used): 245°F (118°C) PMCC

Flammable limits: **LEL**: 1.1% at 185°C **UEL**: >6.4% at 185°C

Extinguishing Media: Water fog, alcohol foam, carbon dioxide, dry chemical.

Special Firefighting Procedures: Use a positive pressure, self-contained breathing apparatus and full protective clothing.

Unusual Fire and Explosion Hazards: Will burn under the right conditions of heat and oxygen supply.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Steps to be taken if material is released or spilled: Soak up with absorbent material. Residual resin may be removed using steam or hot soapy water.

SECTION 7: EXPOSURE CONTROLS -- PERSONAL PROTECTION

Respiratory Protection: Adequate ventilation to keep below TLV.

Ventilation:

Local Exhaust: Keep below TLV
Mechanical: Keep below TLV
Special: N/A
Other: N/A

Protective Gloves: Neoprene / polyethylene gloves recommended.

Eye Protection: Chemical safety glasses recommended.

Other Protective Clothing or Equipment: Neoprene / polyethylene apron, safety shower and eyewash station.

Work / Hygienic Practices: Wash thoroughly with soap and water after handling.

SECTION 8: HANDLING AND STORAGE

Precautions to be taken in handling and storing: Store below 80°F (27°C) in a dry place. Avoid prolonged breathing of vapors and skin or eye contact.

Other Precautions: Keep containers tightly capped.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point: >482°F (250°C)
Vapor Pressure (mmHg): <1 mmHg @ 20°C
Vapor Density (Air = 1): 5.04
Specific Gravity (H_2O = 1): 0.973 - 0.981
Melting Point: N/A
Evaporation Rate (BuAc = 1): N/A
Volatile Organic Compounds: None
Solubility in Water: Mixes completely

Appearance and Odor: Light, straw colored liquid; amine odor.

SECTION 10: STABILITY AND REACTIVITY DATA

Stability: Stable.

Conditions to Avoid: Can autoignite in air at approximately 561°F (295°C).

Incompatibility (Materials to Avoid): Acid, oxidizing material, halogenated organic compounds, aldehydes, ketones and acrylates. Mixture with these materials will result in a temperature and/or pressure increase.

Hazardous Decomposition or By-products: Nitrogen oxides when burned.

Hazardous Polymerization: Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

Triethylenetetramine

OSHA PEL:	N/A
ACGIH TLV:	N/A
OTHER:	LD_{50} ORAL (RAT) 4340 mg/kg
	LD_{50} SKIN (RBT) 550-800 mg/kg

SECTION 12: DISPOSAL CONSIDERATIONS

Waste Disposal Method: Incinerate in accordance with local, state, and federal regulations.

SECTION 13: TRANSPORTATION INFORMATION

SHIPPING NAME	CLASS	PACKING GROUP	UN NUMBER
Triethylenetetramine Corrosive	8	II	2259

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
NONE		

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.