MATERIAL SAFETY DATA SHEET

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT: M-Bond Curing Agent - Type 10 April 13, 2010

Vishay Measurements Group, Inc.
Post Office Box 27777
Raleigh, NC 27611

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	%
112-24-3	Triethylenetetramine Mixture	< 98
111-41-1	Aminoethylethanolamine	<1.6
140-31-8	Aminoethylpiperazine	<1.3
112-57-2	Tetraethylenepentamine Mixture	<1.1
111-40-0	Diethylenetriamine	<0.6

SECTION 3: HEALTH HAZARD DATA

Routes of Entry:

Inhalation: YES Skin: YES Ingestion: Accidental

Health Hazards (Acute and Chronic): Avoid all oral and dermal contact.

Carcinogenicity:

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

NOTE: Do not use sodium nitrate or other nitrosating agents in formulations containing this product. Suspected cancer-causing nitrosamines could be formed. Avoid all oral and dermal contact. Laboratory animals that were fed exaggerated doses of TETA showed adverse fetal effects that were believed to be associated with an observed copper deficiency. Exposures having no effect on the mother should have no effect on the fetus.

Signs and Symptoms of Exposure:

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

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

SKIN CONTACT: Avoid all skin contact. Brief contact may cause severe skin burns. Symptoms may include pain, severe local redness and tissue damage. Classified as corrosive to the skin according to DOT guidelines. Prolonged or widespread skin contact may result in absorption of harmful amounts.

INGESTION: Avoid all oral contact. Swallowing may result in gastrointestinal irritation or ulceration. Swallowing may result in burns of mouth and throat. Aspiration into the lungs may occur during ingestion or vomiting, causing tissue damage or lung injury.

Conditions Generally Aggravated by Exposure: Can cause allergic reaction and acts as a sensitizer in susceptible individuals. Excessive exposure may aggravate pre-existing asthma.

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. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist.

SKIN CONTACT: In case of contact, immediately flush skin with plenty of water for at least 30 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 one cup (8 ounces) of water or milk if available and transport to medical facility. Do not give anything by mouth to an unconscious person.

NOTE TO PHYSICIAN: Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist. Due to irritant properties, swallowing may result in burns/ulceration of mouth, stomach and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal/esophageal control if lavage is done. If burn is present, treat as any thermal burn, after decontaminated. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

SECTION 5: FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used): 298°F (148°C) Closed Cup

Flammable limits: LEL: 1% at 185°C UEL: >6.4% at 185°C

Extinguishing Media: Water fog, foam, carbon dioxide, dry chemical. Do not use direct water stream. Since this may cause fire to spread.

Special Firefighting Procedures: Use a positive pressure, self-contained breathing apparatus and full protective clothing. Fight fire from protected location or safe distance.

Unusual Fire and Explosion Hazards: Heat is generated when product mixes with water. Container may rupture from gas generation in a fire situation.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Steps to be taken if material is released or spilled: Contain spilled material is possible. Absorb with inert material and place in appropriate container for disposal. Prevent material from entering into soil, ditches, sewers, waterways and/or groundwater.

SECTION 7: EXPOSURE CONTROLS -- PERSONAL PROTECTION

Respiratory Protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit guidelines. For most conditions, no respiration protection should be needed. However, if discomfort is experienced, use an approved air purifying respirator.

Ventilation: Use local exhaust ventilation or other engineering controls to maintain airborne levels below exposure limit requirements.

Protective Gloves: Use gloves chemically resistant to this material.

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 and before eating, drinking or smoking. Do not consume or store food or tobacco in the work area.

SECTION 8: HANDLING AND STORAGE

Precautions to be taken in handling and storing: Avoid prolonged breathing of vapors and skin or eye contact. Do not swallow material.

Other Precautions: Keep containers tightly capped. Spills of these organic materials on hot fibrous insulations may lead to lowering of the auto ignition temperatures possibly resulting in spontaneous combustion.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point:	531°F (277°C)
Vapor Pressure (mmHg):	<1 kPa @ 20°C
Vapor Density (Air = 1):	5.0
Specific Gravity (H_2O = 1):	0.98
Melting Point:	N/A
Evaporation Rate (BuAc = 1):	N/A
Volatile Organic Compounds:	None
Solubility in Water:	100%

Appearance and Odor: Yellow liquid; amine odor.

SECTION 10: STABILITY AND REACTIVITY DATA

Stability: Thermally stable at typical use temperatures.

Conditions to Avoid: Can autoignite in air at approximately 561°F (294°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

Aminoethylpiperazine

OSHA PEL:	None listed
ACGIH TLV:	None listed
OTHER:	None listed

Tetraethylenepentamine

OSHA PEL:	None listed
ACGIH TLV:	None listed
OTHER:	None listed

Diethylenetriamine

OSHA PEL:	10 ppm (Skin)
ACGIH TLV:	1 ppm (Skin)
OTHER:	None listed

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. Micro-Measurements specifically disclaims any and all form of liability and/or responsibility for the application of this product.