



MATERIAL SAFETY DATA SHEET



SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT: PLH-8/PLMH-1/PMCH-1

April 14, 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 (TETA)	100.0

SECTION 3: HEALTH HAZARD DATA

Routes of Entry:

Inhalation: Yes Skin: Yes Ingestion: Yes

Health Hazards (Acute and Chronic): Lung damage and skin sensitization.

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

Signs and Symptoms of Exposure:

INHALATION: Vapors/mists may be corrosive to upper respiratory tract. Repeated exposure may result in lung damage.

EYE CONTACT: Corrosive to the eyes. May cause severe damage including blindness. Vapors may be irritating.

SKIN CONTACT: Corrosive to the skin. May cause skin sensitization. Skin sensitization (allergy) may be evidenced by rashes, especially hives. May be toxic if absorbed through skin.

INGESTION: Not expected to be a relevant route of exposure. However, material is corrosive and may cause severe and permanent damage to mouth, throat and stomach. May be moderately toxic if swallowed.

Conditions Generally Aggravated by Exposure: Pre-existing eye, skin and respiratory disorders may be aggravated by exposure to this product.

SECTION 4: EMERGENCY AND FIRST AID PROCEDURES
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INHALATION: Remove victim to fresh air and provide oxygen if breathing is difficult. Give artificial respiration if not breathing. Get medical attention.

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Rinse continuously with water while on the way to get medical attention.

SKIN CONTACT: Immediately remove contaminated clothing or shoes. Wipe excess from skin and flush with plenty of water for at least 15 minutes. Use soap if readily available, or follow by thoroughly washing with soap and water. Do not reuse clothing until thoroughly decontaminated. Get medical attention.

INGESTION: Do NOT induce vomiting. Give one glass of water unless victim is drowsy, convulsing, or unconscious. Seek medical attention immediately.

SECTION 5: FIRE AND EXPLOSION HAZARD DATA
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Flash Point (Method Used): >300°F (149°C) Setaflash

Flammable limits: LEL: NA UEL: NA

Extinguishing Media: Use water fog, "alcohol" foam, dry chemical or carbon dioxide. Water or fog may cause frothing which can be violent, especially if sprayed into containers of hot or burning liquid.

Special Firefighting Procedures: Material will not burn unless preheated. Do not enter confined space without full turn out gear, including a positive pressure, NIOSH approved self-contained breathing apparatus. Cool fire exposed containers with water.

Unusual Fire and Explosion Hazards: Delayed lung damage (pulmonary edema) can be experienced after exposure to combustion products, sometimes hours after the exposure. Nitrogen oxides and nitrogen containing organic compounds may be released upon combustion.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Steps to be taken if material is released or spilled: Danger. Corrosive. Prevent all bodily contact with spilled material. Wear appropriate respirator and full-body protective clothing. For large spills shut off leak if it is safe to do so. Eliminate potential fire hazards. Dike and contain. Remove with vacuum truck or pump to storage/salvage vessels. Soak up residue with an absorbent such as clay, sand or other suitable material; place in non-leaking containers for proper disposal. Flush area with water to remove all traces residue; dispose of flush solutions by absorbing with clay, sand or other suitable material. For small spills, take up with absorbent material and place in non-leaking containers. Seal containers tightly for proper disposal.

NOTE: TETA is resistant to biodegradation in biological wastewater treatment plants. It could be toxic to the biomass in a treatment plant and could be toxic to fish. Keep out of surface waters, sewers, and waterways entering or leading to surface waters.

SECTION 7: EXPOSURE CONTROLS -- PERSONAL PROTECTION

Respiratory Protection: Do not breathe vapors/mists. Use a NIOSH approved respirator as required to prevent over-exposure. In accordance with 29 CFR 1910.134, use either a full-face, atmosphere-supplying respirator or an air purifying respirator for organic vapors. Avoid breathing vapors which may be produced under some conditions such as heating or applications of uncured material in large surface areas. Avoid breathing aerosols and mists which may be formed by various methods of application.

Ventilation:

Local Exhaust: Use ventilation as required to control vapor concentrations.

Mechanical: As needed

Special: NA

Other: NA

Protective Gloves: Do not get on skin or on clothing. Wear chemical resistant gloves.

Eye Protection: Do not get in eyes. Wear chemical splash goggles if there is potential contact with eyes.

Other Protective Clothing or Equipment: Wear chemical resistant apron or other protective clothing to prevent contact with skin.

Work / Hygienic Practices: Use good industrial hygiene practices. Wash hands using soap and water after use and before eating, drinking or smoking, applying cosmetics, or using toilet facilities. Wash contaminated clothing before reuse. Contaminated leather articles, including shoes, cannot be decontaminated and should be destroyed to prevent reuse. Eye wash stations and safety showers should be available for emergency use.

SECTION 8: HANDLING AND STORAGE

Precautions to be taken in handling and storing: Store in a cool, dry place with adequate ventilation. Keep away from open flames and high temperatures. Do not pressurize drum containers to empty them.

Other Precautions: Containers, even those that have been emptied, can contain hazardous product residues.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point:	531°F (277°C)
Vapor Pressure (mmHg):	<0.01
Vapor Density (Air = 1):	5.0
Specific Gravity (H₂O = 1):	0.98
Melting Point:	Not available
Evaporation Rate (BuAc = 1):	<1
Volatile Organic Compounds:	None
Solubility in Water:	Soluble

Appearance and Odor: Liquid with amine odor.

SECTION 10: STABILITY AND REACTIVITY DATA

Stability: Stable.

Conditions to Avoid: Avoid contact with heat or flame.

Incompatibility (Materials to Avoid): Avoid contact with strong oxidizing agents.

Hazardous Decomposition or By-products: Nitrogen oxides, carbon monoxide and unidentified organic compounds may be formed during combustion.

Hazardous Polymerization: Will not occur.

NOTE: Heating this curing agent in the presence of air may cause thermal and oxidative decomposition. With some epoxy resins, it may produce exothermic reactions which in large masses can cause runaway polymerization and charring of the reactants. Fumes and vapors from these thermal and chemical decompositions vary widely in composition and toxicity.

SECTION 11: TOXICOLOGICAL INFORMATION

Triethylenetetramine

OSHA PEL:	None established
ACGIH TLV:	None established
OTHER:	ORAL (RAT) LD ₅₀ 2.5 g/kg SKIN (RABBIT) LD ₅₀ 805 mg/kg

Triethylenetetramine (TETA) has been found to be a direct acting mutagen in the Ames assay. It gave positive results with and without activation. TETA was fetotoxic and teratogenic when fed to rats at 0.83% and 1.67% of diet. When applied dermally to the skin of pregnant guinea pigs, there was a 90% abortion rate or death of fetus with developmental anomalies. These effects are believed to be secondary to copper deficiency.

SECTION 12: DISPOSAL CONSIDERATIONS

Waste Disposal Method: Dispose of in accordance with local, state and federal environmental 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.