



# MATERIAL SAFETY DATA SHEET

## SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT:** M-Coat D

November 23, 2005

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

**MSDS #** MGM024J

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	%
108-88-3	Toluene	38.9-43.8
13463-67-7	Titanium Dioxide	16.5
78-93-3	Methyl Ethyl Ketone	10.8-14.9
Proprietary	Acrylic Ester Resin	26.5-31.5

## SECTION 3: HEALTH HAZARD DATA

### Routes of Entry:

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

**Health Hazards (Acute and Chronic):** Chronic overexposure may cause kidney and/or liver damage.

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

**Signs and Symptoms of Exposure:**

**INHALATION:** May cause central nervous system depression. Mild exposure causes dizziness, weakness, headache, and nausea. More severe exposure, greater than 1000 ppm, may cause respiratory depression, convulsions and death.

**EYE CONTACT:** Short-term contact may result in slight irritation and conjunctivitis. Prolonged contact with liquid can result in corneal burns. High vapor concentrations may be irritating to the eyes.

**SKIN CONTACT:** Prolonged and repeated liquid contact can cause defatting and drying of the skin, which may result in skin irritation and dermatitis. Skin absorption may add significantly to exposure.

**INGESTION:** Moderately toxic. Causes burning sensation in mouth and stomach and is likely to produce symptoms similar to those described for inhalation. Aspiration into lungs may result in chemical pneumonitis and pulmonary edema and may be fatal.

**Conditions Generally Aggravated by Exposure:** Chronic overexposure may cause kidney and/or liver damage.

<b>SECTION 4: EMERGENCY AND FIRST AID PROCEDURES</b>
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**INHALATION:** Remove to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

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

**SKIN CONTACT:** Flush with plenty of water while removing contaminated clothing and shoes. Continue flushing for at least 15 minutes. Launder contaminated clothing before reuse. If irritation persists, get medical attention.

**INGESTION:** If swallowed, do NOT induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into lungs. Get medical attention immediately.

**IN ALL CASES, CONSULT PHYSICIAN PROMPTLY.**

<b>SECTION 5: FIRE AND EXPLOSION HAZARD DATA</b>
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**Flash Point (Method Used):** 30°F (-1°C) Tag Closed Cup

**Flammable limits:** LEL: 1.6 UEL: 7.0

**Extinguishing Media:** Foam, carbon dioxide, dry chemical.

**Special Firefighting Procedures:** Firefighters should wear proper protective clothing and use self-contained breathing apparatus. Fight as a flammable liquid fire.

**Unusual Fire and Explosion Hazards:** Vapor is flammable and heavier than air, and may travel to distant ignition source and flash back.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

**Steps to be taken if material is released or spilled:** Remove sources of ignition. Contain spill and pick up with absorbent material (vermiculite, sand). Scoop up large spills with non-sparking tools and flush area with water. Provide respiratory protection and/or ventilate area.

## SECTION 7: EXPOSURE CONTROLS -- PERSONAL PROTECTION

**Respiratory Protection:** For air contaminants above TLV or permissible limits use NIOSH approved respirator for organic vapors.

**Ventilation:**

**Local Exhaust:** Keep below TLV

**Mechanical:** Explosion proof

**Special:** N/A

**Other:** N/A

**Protective Gloves:** Neoprene gloves are recommended.

**Eye Protection:** Chemical splash goggles are recommended.

**Other Protective Clothing or Equipment:** Neoprene over-clothing as needed. Safety shower and eyewash station are recommended in local area.

**Work / Hygienic Practices:** Wash thoroughly after using.

## SECTION 8: HANDLING AND STORAGE

**Precautions to be taken in handling and storing:** Store below 80°F (27°C) in dry place. Keep containers tightly sealed and away from heat, sparks, and open flame.

**Other Precautions:** Avoid prolonged breathing of vapors and extended skin contact.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

<b>Boiling Point:</b>	212°F (100°C)
<b>Vapor Pressure (mmHg):</b>	0.49 @ 68°F (20°C)
<b>Vapor Density (Air = 1):</b>	3.8
<b>Specific Gravity (H<sub>2</sub>O = 1):</b>	0.9
<b>Melting Point:</b>	N/A
<b>Evaporation Rate (BuAc = 1):</b>	1.9
<b>Volatile Organic Compounds:</b>	650 g/liter
<b>Solubility in Water:</b>	Negligible

**Appearance and Odor:** White liquid with aromatic odor.

**SECTION 10: STABILITY AND REACTIVITY DATA**

**Stability:** Stable.

**Conditions to Avoid:** None known.

**Incompatibility (Materials to Avoid):** Strong oxidizing agents.

**Hazardous Decomposition or By-products:** Oxides of carbon and nitrogen.

**Hazardous Polymerization:** Will not occur.

**SECTION 11: TOXICOLOGICAL INFORMATION**

Toluene

OSHA PEL:	100 ppm (TWA)
ACGIH TLV:	100 ppm
OTHER:	150 ppm STEL LD <sub>50</sub> ORAL (RAT) 5000 mg/kg

Titanium Dioxide

OSHA PEL:	10 mg/m <sup>3</sup> (TWA)
ACGIH TLV:	10 mg/m <sup>3</sup>
OTHER:	None known

## Methyl Ethyl Ketone

OSHA PEL: 200 ppm (TWA)  
 ACGIH TLV: 200 ppm  
 OTHER: 300 ppm STEL  
 LD<sub>50</sub> ORAL (RAT) 2737 mg/m<sup>3</sup>  
 LD<sub>50</sub> IPR (MOUSE) 616 mg/kg  
 LD<sub>50</sub> SKIN (RABBIT) 13 g/kg

## Acrylic Ester Resin

OSHA PEL: Not established  
 ACGIH TLV: Not established  
 OTHER: Not established

<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	PACKING GROUP	UN NUMBER
Flammable Liquids, N.O.S. (Toluene/Ethyl Methyl Ketone) (Methyl Ethyl Ketone) Flammable Liquid	3	II	1993

<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
108-88-3	Toluene	38.9-43.8
78-93-3	Methyl Ethyl Ketone	10.8-14.9

**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.