



# MATERIAL SAFETY DATA SHEET

## SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT:** M-Bond 300 Resin

November 28, 2005

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

**MSDS #** MGM010H

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	%
26098-37-3	Polyester resin	63.0-67.0
100-42-5	Styrene Monomer	33.0-37.0

## SECTION 3: HEALTH HAZARD DATA

### Routes of Entry:

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

**Health Hazards (Acute and Chronic):** Over-exposure to this material (or its components) has been suggested as a cause of the following effects in humans and may aggravate pre-existing disorders of these organs: central nervous system effects, effects on hearing, and respiratory tract damage.

**Carcinogenicity:**  
NTP: See note  
IARC Monographs: See note  
OSHA Regulated: See note

**NOTE:** This material contains styrene which is listed by the International Agency for Research on Cancer (IARC) as a group 2B cancer causing agent (possibly carcinogenic to humans).

**Signs and Symptoms of Exposure:**

**INHALATION:** Harmful if inhaled. Effects from exposure may include headaches, fatigue, nausea, sensation of drunkenness, central nervous system depression and pulmonary edema. Inhalation of vapor or aerosol may cause irritation to the respiratory tract (nose, throat and lungs).

**EYE CONTACT:** Harmful to eyes. Direct contact with this material causes eye irritation. Symptoms may include stinging, tearing, redness and swelling.

**SKIN CONTACT:** Harmful if absorbed through the skin. Prolonged or frequent skin contact may cause defatting and dryness of the skin.

**INGESTION:** Harmful if swallowed. Single dose oral toxicity is low. Swallowing small amounts during normal handling is not likely to cause harmful effects; swallowing large amounts may be harmful. Effects from exposure through ingestion may include gastrointestinal disturbances, pain and discomfort. Effects of exposure by ingestion may also include those indicated for inhalation. Styrene is harmful or fatal if liquid is aspirated into lungs.

**Conditions Generally Aggravated by Exposure:** None known.

**SECTION 4: EMERGENCY AND FIRST AID PROCEDURES**

**INHALATION:** Remove victim to fresh air. Keep warm and quiet. If not breathing give artificial respiration. If breathing is difficult, give oxygen by trained personnel. Get immediate medical attention.

**EYE CONTACT:** Immediately flush eyes with plenty of water for at least 15 minutes. Seek immediate medical aid.

**SKIN CONTACT:** Wash with soap and water. Remove contaminated clothing. Get medical attention if irritation develops or persists. Wash contaminated clothing before reuse.

**INGESTION:** Do NOT induce vomiting. Aspiration hazard: This material may enter the lungs during vomiting. Immediately give the victim one or two glasses of water or milk to drink. Never give anything by mouth to an unconscious person. Seek immediate medical attention.

**SECTION 5: FIRE AND EXPLOSION HAZARD DATA**

**Flash Point (Method Used):** 89°F (32°C)

**Flammable limits:** LEL: >1.1 (styrene) UEL: <7.0 (styrene)

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

**Special Firefighting Procedures:** Firefighters and others exposed to vapors or products of combustion should wear self-contained breathing apparatus and full fire-fighting protective clothing. Equipment should be thoroughly decontaminated after use.

**Unusual Fire and Explosion Hazards:** At elevated temperatures, such as in a fire, polymerization may take place. If polymerization takes place in a closed container, there is the possibility of violent rupture of the container. Product vapors may form an explosive mixture in the air.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

**Steps to be taken if material is released or spilled:** Remove all sources of ignition. Ventilate area. Absorb spill with an absorbent material such as sawdust, vermiculite or sand and place in a closed container. If large spill, dike the area to prevent this material from entering water systems or sewers.

## SECTION 7: EXPOSURE CONTROLS -- PERSONAL PROTECTION

**Respiratory Protection:** If TLV or PEL is exceeded, suitable respiratory protection must be worn to prevent overexposure.

**Ventilation:** The use of general or local exhaust ventilation may be required to maintain exposures below the regulatory or recommended occupational exposure limits. Use explosion proof ventilation equipment.

**Local Exhaust:** General ventilation is required during normal use. Local ventilation may be required during certain operations to keep exposure levels below the TLV.

**Mechanical:** Keep below TLV

**Special:** N/A

**Other:** N/A

**Protective Gloves:** Wear appropriate impervious gloves to prevent skin contact.

**Eye Protection:** Wear safety glasses with sideshields and a faceshield or chemical goggles and a faceshield.

**Other Protective Clothing or Equipment:** If splashing is likely, wear protective clothing to prevent skin contact.

**Work / Hygienic Practices:** Wash thoroughly after handling. Eyewash station and emergency shower should be available.

## SECTION 8: HANDLING AND STORAGE

**Precautions to be taken in handling and storing:** Avoid storage above 100°F (38°C). Avoid prolonged or repeated skin contact. Avoid inhalation of heated vapors or spray mists.

**Other Precautions:** Avoid improper addition of promoter and/or catalyst. A promoter and catalyst used with this product should always be mixed separately with the product and must never be mixed together.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

<b>Boiling Point:</b>	295°F (146°C)
<b>Vapor Pressure (mmHg):</b>	6.12 (styrene)
<b>Vapor Density (Air = 1):</b>	3.6 (styrene)
<b>Specific Gravity (H<sub>2</sub>O = 1):</b>	1.12-1.14
<b>Melting Point:</b>	Not known
<b>Evaporation Rate (BuAc = 1):</b>	<1 (styrene)
<b>Volatile Organic Compounds:</b>	422 grams/liter
<b>Solubility in Water:</b>	Insoluble at 68°F (20°C)

**Appearance and Odor:** Pink, clear liquid; pungent odor.

**SECTION 10: STABILITY AND REACTIVITY DATA**

**Stability:** Stable at normal temperatures and storage conditions.

**Conditions to Avoid:** Heat and direct sunlight.

**Incompatibility (Materials to Avoid):** Strong acids and oxidizing agents (peroxides), metal salts and polymerization catalysts.

**Hazardous Decomposition or By-products:** Combustion may produce carbon monoxide, carbon dioxide and irritating or toxic vapors and gases.

**Hazardous Polymerization:** Product will undergo hazardous polymerization at temperatures above 150°F (65°C). Hazardous polymerization will occur if contaminated with peroxides, metal salts, and polymerization catalysts.

**SECTION 11: TOXICOLOGICAL INFORMATION**

Styrene

OSHA PEL:	50 ppm
ACGIH TLV:	50 ppm
OTHER:	100 ppm (STEL)

**SECTION 12: DISPOSAL CONSIDERATIONS**

**Waste Disposal Method:** This material has been tested and found to have a flash point below 140°F (60°C). If discarded, this material and containers should be treated as hazardous wastes based on the characteristic of ignitability as defined under the federal RCRA regulations. Disposal of this material and its container, requires compliance with applicable labeling, packaging, and record keeping standards. Extreme care should be taken to ensure that it is disposed of only in a facility permitted for disposal of hazardous wastes.

**SECTION 13: TRANSPORTATION INFORMATION**

SHIPPING NAME	CLASS	PACKING GROUP	UN NUMBER
Flammable Liquid, N.O.S., (Styrene Monomer)	3	III	1993

**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
100-42-5	Styrene	33.0-37.0

**TSCA NOTIFICATION:**

All components of this product, for which CAS Numbers have been established 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.