



MATERIAL SAFETY DATA SHEET

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT: M-Bond 200 Adhesive

August 30, 2004

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

MSDS # MGM007P

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

NOTE: This material is purchased from a number of suppliers and distributed by Vishay Micro-Measurements. To ensure that you have the appropriate information, cross-reference the following data with the manufacturer's label on the product you purchased.

CAS NUMBER	CHEMICAL IDENTITY	%
Methyl Cyanoacrylate Adhesive MC-100 (Chemence, Inc.)		
137-05-3	Methyl 2-Cyanoacrylate	90-95
9011-14-7	Poly Methyl Methacrylate	5-10
123-31-9	Hydroquinone	0.1-0.5
Cyberbond APOLLO 2010 (Cyberbond, L.L.C.)		
7085-85-0	Ethyl 2 Cyanoacrylate	80-90
9011-14-7	Poly Methyl Methacrylate	10-20
SI 120 Cyanoacrylate Adhesive (Adhesive Systems, Inc.)		
7085-85-0	Ethyl Cyanoacrylate	80-95
9011-14-7	Poly (Methyl Methacrylate)	1-10
123-31-9	Hydroquinone	0.1-0.5

SECTION 3: HEALTH HAZARD DATA**Routes of Entry:**

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

Health Hazards (Acute and Chronic): Bonds skin rapidly and strongly.

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

Signs and Symptoms of Exposure:

INHALATION: Vapor is irritating to nose and bronchial passages. Prolonged and repeated over-exposure to vapors may produce allergic reactions with asthma-like symptoms in sensitive individuals.

EYE CONTACT: Cyanoacrylates may bond eyelid to eyelid and/or eye.

SKIN CONTACT: Cyanoacrylates bond skin rapidly and strongly. A large drop may cause burn upon solidification.

INGESTION: It is almost impossible to swallow cyanoacrylates. The adhesive solidifies and adheres in mouth. Lips may become stuck together.

Conditions Generally Aggravated by Exposure: None known.

SECTION 4: EMERGENCY AND FIRST AID PROCEDURES**Information for first aid and casualty on treatment for adhesion of human skin to itself if caused by cyanoacrylate adhesives.**

Cyanoacrylate adhesive is a very fast setting and strong adhesive. It bonds human tissue including skin in seconds. Experience has shown that accidents due to cyanoacrylates are handled best by passive, non-surgical first aid. Treatment of specific types of accidents are given below.

SKIN CONTACT: Remove excess adhesive. Soak in warm, soapy water. The adhesive will come loose from the skin in several hours. Dried adhesive does not present a health hazard even when bonded to the skin. Avoid contact with clothes, fabric, rags or tissue. Contact with these materials may cause polymerization. The polymerization of large amounts of adhesive will generate heat causing smoke, skin burns, and strong, irritating vapors. Wear rubber or polyethylene gloves and an apron when handling large amounts of adhesive.

SKIN ADHESION: First, immerse the bonded surface in warm soapy water. Peel or roll the surfaces apart with the aid of a blunt edge, e.g. a spatula or a teaspoon handle; then remove adhesive from the skin with soap and water. Do not try to pull surfaces apart with a direct opposing action.

EYELID TO EYELID OR EYEBALL ADHESION: In the event that eyelids are stuck together or bonded to the eyeball, wash thoroughly with warm water and apply a gauze patch. The eye will open without further action, typically in 1 - 4 days. There will be no residual damage. Do not try to open the eyes by manipulation.

ADHESIVE ON THE EYEBALL: Cyanoacrylate introduced into the eyes will attach itself to the eye protein and will disassociate from it over an indeterminable period, generally covering several hours. This will cause periods of weeping until clearance is achieved. During the period of contamination, double vision may be experienced together with a lachrymatory effect, and it is important to understand the cause and realize that disassociation will normally occur within a matter of hours, even with gross contamination.

MOUTH: If lips are accidentally stuck together, apply lots of warm water to the lips and encourage maximum wetting and pressure from saliva inside the mouth. Peel or roll lips apart. Do not try to pull the lips with direct opposing action.

It is almost impossible to swallow cyanoacrylate. The adhesive solidifies and adheres in the mouth. Saliva will lift the adhesive in 1/2 to 2 days. In case a lump forms in the mouth, position the patient to prevent ingestion of the lump when it detaches.

INGESTION: Saliva should lift the adhesive in 12 to 48 hours. Do not force removal. Do not swallow the adhesive when it loosens.

BURNS: Cyanoacrylates give off heat on solidification. In rare cases a large drop will increase in temperature enough to cause a burn.

Burns should be treated normally after the lump of cyanoacrylate is released from the tissue as described above.

SURGERY: It should never be necessary to use such a drastic method to separate accidentally bonded skin.

INHALATION: Move to fresh air. If symptoms persist, call a physician.

SECTION 5: FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used): 150°F - 200°F Tag Closed Cup

Flammable limits: LEL: Not determined UEL: Not determined

Extinguishing Media: Carbon dioxide, foam, dry chemical.

Special Firefighting Procedures: Firefighters should wear proper protective clothing and self-contained breathing apparatus.

Unusual Fire and Explosion Hazards: Vapors exceeding the flash point will ignite when exposed to flame.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Steps to be taken if material is released or spilled: Flood with water to polymerize cyanoacrylate adhesive and to control product vapors. Soak up with an inert absorbent or scrape up cured product.

SECTION 7: EXPOSURE CONTROLS -- PERSONAL PROTECTION

Respiratory Protection: Use fresh air breathing apparatus or solvent filter mask when exposed to large quantities.

Ventilation: Positive down-draft exhaust ventilation should be provided to maintain vapor concentration below TLV.

Local Exhaust: Keep below TLV.

Mechanical: Keep below TLV.

Special: N/A

Other: N/A

Protective Gloves: Polyethylene gloves recommended. Do not use cotton gloves.

Eye Protection: Safety glasses or goggles.

Other Protective Clothing or Equipment: Polyethylene apron recommended.

Work / Hygienic Practices: Wash hands thoroughly after using product.

SECTION 8: HANDLING AND STORAGE

Precautions to be taken in handling and storing: Store at or below 75°F to maximize shelf life. Avoid contact with skin and eyes. Avoid breathing vapors.

Other Precautions: None.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point:	>150°F (66°C)
Vapor Pressure (mmHg):	<0.2 @ 75°F (24°C)
Vapor Density (Air = 1):	>1
Specific Gravity (H₂O = 1):	1.09
Melting Point:	Not determined
Evaporation Rate (BuAc = 1):	Not determined
Volatile Organic Compounds:	≈ 1000 g/liter

Solubility in Water: Insoluble; polymerized by water.

Appearance and Odor: Clear liquid with sharp, pungent odor.

SECTION 10: STABILITY AND REACTIVITY DATA
--

Stability: Stable.

Conditions to Avoid: High temperatures.

Incompatibility (Materials to Avoid): Water, alcohols, amines, alkalies, peroxides, cotton and wool.

Hazardous Decomposition or By-products: None known.

Hazardous Polymerization: Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION
--

Methyl Cyanoacrylate

OSHA PEL:	Not Established
ACGIH TLV:	2 ppm TWA Estimated
OTHER:	None

Ethyl Cyanoacrylate

OSHA PEL:	Not known
ACGIH TLV:	2 ppm TWA
ACGIH STEL:	4 ppm TWA
OTHER:	None

Poly Methyl Methacrylate

OSHA PEL:	None
ACGIH TLV:	None
OTHER:	None

Hydroquinone

OSHA PEL:	2 mg/M ³ TWA
ACGIH TLV:	2 mg/M ³ TWA
OTHER:	4 mg/m ³ STEL

SECTION 12: DISPOSAL CONSIDERATIONS
--

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

SECTION 13: TRANSPORTATION INFORMATION**SHIPPING NAME****CLASS****UN NUMBER**

Not regulated.

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
123-31-9	Hydroquinone	0.1-0.5

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.