

Designer Molecules, Inc.

Safety Data Sheet

Product: A-478-M
MSDS ID: R1217-M

Revised Date: 01/01/19
Replaces Date: 06/12/17

1. General Information

Product Code: R1217-M
Trade Name(s): A-478-M
Product Type: Adhesive Monomer (PMDM – Pyromellitic Dimethacrylate, Mixture of Isomers)
Recommended Use: Adhesion promoter
Restrictions: None identified

Company: Designer Molecules, Inc.
10080 Willow Creek Rd.
San Diego, CA 92131
Telephone: 858-348-1122

Emergency phone number (spill, leak, fire, exposure or accident):
US Domestic (800) 535-5053 (INFOTRAC) Includes Canada and Mexico
International +1 (352) 323-3500
China Specific (86) 400-120-0761
Germany Specific (49) 0800-181-2924
Australia Specific (61) 1-300-366-961

2. Hazards Identification

EMERGENCY OVERVIEW:

OSHA Hazards:

Harmful by ingestion, Harmful by skin absorption, Irritant.

Other hazards which do not result in classification:

Possible sensitizer.

GHS Classification:

Acute toxicity, Oral (Category 4)
Acute toxicity, Dermal (Category 4)
Skin Irritation (Category 2)

GHS Label Elements, including precautionary statements:



Signal Word: **Warning**

H302: Harmful if swallowed.
H312: Harmful in contact with skin.
H315: Causes skin irritation.

P264: Wash thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P301+P312: IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
P280c: Wear protective gloves/protective clothing.
P302+P352: IF ON SKIN: Wash with plenty of soap and water.
P363: Wash contaminated clothing before reuse.
P280d: Wear protective gloves.
P332+P313: If skin irritation occurs: Get medical advice/attention.
P362: Take off contaminated clothing and wash before reuse.

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POTENTIAL HEALTH EFFECTS:

EFFECTS OF SINGLE ACUTE OVEREXPOSURE:

INHALATION: Dust may be irritating to respiratory system.

EYE CONTACT: May cause eye irritation. Contact with eyes causes redness and discomfort that is transient.

SKIN CONTACT: Brief contact may cause slight irritation with itching and local redness. Repeated and/or prolonged contact may cause skin sensitization.

SKIN ABSORPTION: May cause irritation, including redness and swelling. May also cause sensitization and allergic reaction in some individuals, resulting in contact dermatitis, severe irritation, dryness and cracking.

SWALLOWING: Ingestion may cause abdominal discomfort, nausea, vomiting, and diarrhea.

CHRONIC HEALTH HAZARDS: None known.

OSHA: This material is considered hazardous by OSHA Hazard Communication Standard (29 CFR 1910.1200)

3. Composition Information

Synonyms: R1217-M, A-478-M, PMDM-Mixed Isomers

COMPONENT	CAS#	CONCENTRATION
1,2,4,5-Benzenetetracarboxylic acid, 1,4(or1,5)-bix[2-[(2-methyl-1-oxo-2-propen-1-yl)oxy]ethyl] ester	111308-10-2	90.0 – 100.0 %

4. First Aid Measures

SWALLOWING: Do not induce vomiting. Give person large amounts of water or milk. Get immediate medical attention.

SKIN CONTACT: Wash area with soap and water. Remove contaminated clothing and shoes. Wash or clean before reuse.

INHALATION: Remove person to fresh air. If breathing has stopped, perform artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

EYE CONTACT: Flush with water for 15 minutes. Get immediate medical attention.

NOTES TO PHYSICIAN:

There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.

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5. Fire and Explosion Hazard Data

FLASH POINT (method): $\geq 200^{\circ}\text{C}$ (closed cup)
EXTINGUISHER METHOD: Water, CO₂, foam, dry chemical
SPECIAL FIRE-FIGHTING PROCEDURES:

Fire fighters should wear NIOSH/MSHA approved pressure demand self-contained breathing apparatus. Decontaminate or discard any clothing that may contain chemical residues. Avoid extinguishing methods which may generate dust clouds.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Do not enter fire area without proper protection. See Section 10, Reactivity Data, for decomposition products possible. Fight fire from safe distance and protected location. Heat/impurities may increase temperature/build pressure/rupture closed containers, spreading fire, increasing risk of burns/injuries. Water may be ineffective in firefighting due to low solubility. Use water spray/fog for cooling. Pressure relief system may plug with solids, increasing risk of overpressure.

6. Accidental Release Measures

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Wear personal protective equipment (clothing and gloves) when handling spilled materials. Promptly absorb spill. Remove sources of ignition. Cover drains to prevent entry into waterways.

PERSONAL PRECAUTIONS:

Wear suitable protective equipment.

ENVIRONMENTAL PRECAUTIONS:

Keep airborne particles to a minimum.. This material is resistant to rapid biodegradation. May be toxic to aquatic life. Avoid runoff to waterways and sewers.

7. Handling and Storage

HANDLING: Keep away from heat, sparks and flame. Avoid contact with eyes. Keep container closed. Use with adequate ventilation. Do not eat, drink or smoke while handling. Wash thoroughly after handling.

VENTILATION: General (mechanical) room ventilation is expected to be satisfactory for use at room temperature.

STORAGE: Store at room temperature away from incompatible materials identified in the *Stability and Reactivity Section*.

8. Exposure Controls and Personal Protection Measures

EXPOSURE LIMITS:

<u>Component</u>	<u>Type</u>	<u>Value</u>	<u>Remarks</u>
Proprietary Polymer	TWA (skin) OSHA	10 mg/m ³	Particulates - Total
	TWA (skin) OSHA	5 mg/m ³	Particulates - Respirable

PERSONAL PROTECTION:

Respiratory: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use. If a respirator is used, a NIOSH/MSHA approved respirator with organic vapor/dust-mist fume filters represents the minimum level of respiratory protection.

Hands: Protective gloves are recommended (4H, butyl, neoprene, nitrile or PVC-coated).

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Eyes: Safety glasses, goggles, or face shields are required.
Skin: Chemical-resistant clothing.

OTHER PROTECTIVE EQUIPMENT:

Wear disposable protective clothing to facilitate recovery of any materials spilled.

ENGINEERING CONTROLS:

Ventilation:

Local Exhaust:

Fume hood at point of generation with sufficient exhaust to remove material from breathing zone.

9. Physical / Chemical Characteristics

APPEARANCE:

Physical State: Solid (powder)
Color: White
Odor: None

OTHER PROPERTIES:

Boiling Point: Not determined.
Melting Point: ~ 155 – 158°C
pH: Not determined.
Specific Gravity (H₂O=1): Not determined.
Vapor Pressure: Not determined.
Flash Point (method): ≥ 200°C (closed cup)
Vapor Density (Air-1): Not determined.
Solubility in water: Very slight.
Evaporation rate (BuAc=1): < 1
Percent volatile (weight): Not determined.
Percent volatile (volume): Not determined.
Volatile organic content: Not determined.

10. Reactivity Hazard Data

STABILITY: Stable

CONDITIONS TO AVOID: Elevated temperatures in the presence of initiators

INCOMPATIBLE MATERIALS: Incompatible with strong oxidizing, strong reducers, free radical initiators, inert gases, oxygen scavengers.

HAZARDOUS DECOMPOSITION PRODUCTS:

Acrid smoke-fumes/carbon monoxide/carbon dioxide and perhaps other toxic vapors may be released during a fire involving this product.

HAZARDOUS POLYMERIZATION: May occur.

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11. Toxicological Information

TARGET ORGANS: None listed.

REPRODUCTIVE TOXICITY DATA:

Embryotoxicity: This product is not reported to produce embryotoxic effects in humans.

Teratogenicity: This product is not reported to produce teratogenic effects in humans.

Reproductive Toxicity: This product is not reported to produce reproductive toxicity effects in humans.

CARCINOGENICITY: This product is not listed as carcinogenic by IARC, NTP

TOXICITY DATA: This product has not been tested on animals to obtain toxicity data.

12. Ecological Information

POTENTIAL EFFECT ON ENVIRONMENT: Do not allow to enter drains, sewers or watercourses.

MOBILITY: Insoluble

POTENTIAL TO BIOACCUMULATE: Unknown

AQUATIC TOXICITY: Unknown

13. Disposal Considerations

RCRA WASTE

CLASSIFICATION: N/A

GENERAL: Incinerate in a furnace, where permitted, following appropriate local, state, and federal regulations.

PACKAGING: Completely discharge containers. Reuse of empty containers is not recommended. Employees should be advised of potential hazards due to residual material associated with empty containers. Dispose of all empty containers properly in accordance with federal, state and local regulations.

14. Transport Information

Not a hazardous material for transportation.

US DOT CLASSIFICATION: Not regulated

CANADIAN TDG SURFACE: Not regulated

IMDG CLASSIFICATION:

ICAO CLASSIFICATION:

IATA CLASSIFICATION: Not regulated

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized safety officer. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

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15. Regulatory Information

CALIFORNIA PROPOSITION 65:

WARNING: This product contains the following chemicals that are known to the State of California to cause cancer, birth defects or other reproductive harm.

Unless a concentration is specified in Section 3 of the MSDS, the below chemical/s are present in trace amounts

COMPONENT

CAS NUMBER

None

TSCA INVENTORY STATUS: Not Listed.

TSCA 12(b) EXPORT NOTIFICATION: This material does not contain 12(b) regulated chemicals.

CERCLA REGULATED CHEMICALS: This material does not contain any CERCLA regulated chemicals.

RQ's: None

SARA 302 EHS CHEMICALS: No extremely hazardous chemicals present.

SARA 313 CHEMICALS: This material contains no reportable chemicals above de minimus levels.

SARA 311/312 HAZARD CLASS: There are no known hazards associated with this material.

HAPS: There are no known hazardous air pollutants associated with this material.

EINECS IDENTIFICATION: The components of this material are listed on EINECS.

HMIS RATINGS:

Health:	<u>1</u>	
Flammability:	<u>1</u>	
Reactivity:	<u>2</u>	
Personal Protection:	<u>B</u>	Gloves, Safety Glasses

16. Other Information

The opinions expressed herein are those of qualified experts within Designer Molecules Inc. We believe that the information contained herein is current, as of the date of this MSDS. Because the use of this information and of these opinions, and the conditions of use of this product, are not within the control of Designer Molecules Inc., it is the user's legal obligation to determine the conditions of safe use of this product.