

Designer Molecules, Inc.

Safety Data Sheet

Product: MM-281
MSDS ID: R1121

Revised Date: 01/02/25
Replaces Date: 04/24/23

1. General Information

Product Code: R1121
Trade Name(s): MM-281
Product Type: Maleimide Terminated Organic Acid
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:
Irritant.

GHS Classification:
Acute toxicity, Oral (Category 4)
Skin irritation (Category 2)
Eye irritation (Category 2A)
Specific target organ toxicity – single exposure (Category 3)

GHS Label Elements, including precautionary statements:



Signal Word: **Warning**

H303: May be harmful if swallowed
H315: Causes skin irritation.
H319: Causes serious eye irritation.
H335: May cause respiratory irritation.

P261: Avoid breathing dust/fume/gas/mist/vapors/spray.
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

HMIS Classification:

Health Hazard: 2
Flammability: 0
Physical Hazards: 0

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NFPA Rating:

Health Hazard: 2
Fire: 0
Reactivity Hazard: 0

POTENTIAL HEALTH EFFECTS:

INHALATION: May be harmful if inhaled. Causes respiratory tract irritation.

EYE CONTACT: Causes eye irritation

SKIN CONTACT: May be harmful if absorbed through skin. Causes skin irritation.

SWALLOWING: May be harmful if swallowed.

3. Composition Information

Synonyms: 2,5-Dihydro-2,5-dioxo-1H-pyrrole-1-undecanoic acid

| COMPONENT | CAS# | CONCENTRATION |
|-----------------------------|------------|---------------|
| 11-Maleimidoundecanoic acid | 57079-01-3 | > 90% |

4. First Aid Measures

SWALLOWING: Do not induce vomiting. Give person large amounts of water. 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.

5. Fire and Explosion Hazard Data

FLASH POINT (method): Not available

EXTINGUISHER METHOD: Water spray, 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.

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. Water may be ineffective in firefighting due to low solubility. Use water spray/fog for cooling.

6. Accidental Release Measures

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

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

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PERSONAL PRECAUTIONS:

Wear suitable protective equipment.

ENVIRONMENTAL PRECAUTIONS:

Poisonous solid. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Prevent entry into sewers, basements or confined areas. Eliminate all sources of ignition.

7. Handling and Storage

HANDLING: Avoid contact with eyes.
Keep container closed.
Use with adequate ventilation.
Wash thoroughly after handling.

VENTILATION: General (mechanical) room ventilation is expected to be satisfactory for use at room temperature. Special, local ventilation is recommended at points where vapors generated at high temperatures may be vented to the workplace air.

STORAGE: Store in a cool well-ventilated area 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 | -0- ppm | None established |
| | STEL (skin) ACGIH | -0- ppm | None established |
| | TWA (skin) ACGIH | -0- ppm | None established |

PERSONAL PROTECTION:

Respiratory: Where airborne worker exposure to this chemical can be reasonably expected, use of a respirator with an Assigned Protection Factor of 50 (or better) is required. Definition: (APF = 50) Any chemical cartridge respirator with a full face piece and organic vapor cartridge(s) in combination with a high-efficiency particulate filter/(APF = 50) Any air-purifying, full-face piece respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister having a high-efficiency particulate filter/(APF = 50) Any powered, air-purifying respirator with a tight-fitting face piece and organic vapor cartridge(s) in combination with a high-efficiency particulate filter/(APF = 50) Any self-contained breathing apparatus with a full face piece/(APF = 50) Any supplied-air respirator with a full face piece

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

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.

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9. Physical / Chemical Characteristics

APPEARANCE:

| | |
|-----------------|-----------------------|
| Physical State: | Solid |
| Color: | White to light yellow |
| Odor: | None |

OTHER PROPERTIES:

| | |
|--|----------------|
| Boiling Point: | Not determined |
| Melting Point: | Not determined |
| pH: | Not determined |
| Specific Gravity (H ₂ O=1): | Not determined |
| Vapor Pressure: | Not determined |
| Vapor Density (Air-1): | Not determined |
| Solubility in water: | Insoluble |
| Evaporation rate (BuAc=1): | < 1 |
| Avg. Molecular Weight: | 281 |

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:

No

11. Toxicological Information

TOXICITY TO ANIMALS:

LD50: Not available.

LC50: Not available.

CHRONIC EFFECTS ON HUMANS:

Causes damage to the following organs: liver.

OTHER TOXIC EFFECTS ON HUMANS:

Hazardous in case of eye contact (irritant, corrosive), of ingestion, of inhalation (lung irritant).

SPECIAL REMARKS ON TOXICITY TO ANIMALS:

Not available.

SPECIAL REMARKS ON CHRONIC EFFECTS ON HUMANS:

Not available.

SPECIAL REMARKS ON OTHER TOXIC EFFECTS ON HUMANS:

To the best of our knowledge, the toxicological properties of this product have not been thoroughly investigated.

SENSITIZATION:

Test results: Acute Toxicity: Toxicological testing has not been performed with this material.
Chronic Toxicity: Toxicological testing has not been performed with this material.

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MUTAGENICITY:

Genetic toxicity

(in vitro):

Acute Toxicity: Toxicological testing has not been performed with this material.

Chronic Toxicity: Toxicological testing has not been performed with this material.

12. Ecological Information

No specific studies have been conducted by Designer Molecules, Inc. on the ecotoxicity or environmental fate of this material; however, commonly available data on the ecotoxicity and environmental fate of certain of the constituents of this material indicate that uncontrolled releases to soil, groundwater, or surface waters could entail acute and/or chronic ecological effects, depending on the quantity and concentration of such releases. Releases of volatile components to the atmosphere are not believed to entail significant ecological consequences provided such releases are within the exposure levels set forth in Section 8. Accordingly, all appropriate measures should be taken to avoid uncontrolled releases of this material to the environment, and any spills or other uncontrolled releases that may occur should be contained and cleaned up immediately in accordance with Section 6

13. Disposal Considerations

WASTE DISPOSAL METHOD:

Legal disposition of waste is the responsibility of the owner/generator of the waste. Applicable local, state and federal regulations must be followed during treatment, storage, or disposal of waste containing this product. Empty containers should be recycled or disposed of through an approved waste management facility.

DISPOSAL CONSIDERATIONS

The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

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.

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 2 of the MSDS, the below chemical/s are present in trace amounts

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COMPONENT**CAS NUMBER**

None

TSCA INVENTORY STATUS: Material manufactured under a Low Volume Exemption in compliance with Section 5(h)(4) of the Toxic Substances Control Act, 15 U.S.C.

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.

EU/UK RISK PHRASES: R 21/22, 38
Harmful in contact with skin and if swallowed
Irritating to skin

EU/UK SAFETY PHRASES: S 1/2, 22, 24, 25
Keep out of the reach of children
Do not breathe dust
Avoid contact with skin and eyes

EINECS IDENTIFICATION: This material is not listed on EINECS.

16. Other Information

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgments of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user. While that data contained herein is factual, it should not be taken as warranty or representation for which the company assumes legal responsibility. It is offered solely for your consideration, investigation and verification. Any use of this data and information must be determined by the user to be in accordance with applicable federal, state and local laws and regulations.