

Designer Molecules, Inc.

Material Safety Data Sheet

Product: MM-290
MSDS ID: R1134

Revised Date: 02/20/09
Replaces Date: 08/31/06

1. General Information

Trade Name: MM-290
Product Code: R1134
Product Type: Acrylate Ester
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 800-424-9300 (CHEMTREC)
International +1 703-527-3887

2. Composition Information

| COMPONENT | CAS# | CONCENTRATION |
|-----------------------------|-------------|---------------|
| Isobornylcyclohexylacrylate | 903876-45-9 | > 95% |

3. Hazards Identification

EMERGENCY OVERVIEW:

WARNING
EYE IRRITANT
HARMFUL IF SWALLOWED
SKIN SENSITIZER
Amber/Red Liquid Bitter Odor

| | |
|---|-----|
| HMIS ratings (scale 0 – 4) | |
| Hazardous Materials Identification System | |
| Health (acute effects) | = 1 |
| Flammability | = 1 |
| Physical | = 0 |
| Personal Protection | = B |

POTENTIAL HEALTH EFFECTS:

EFFECTS OF SINGLE ACUTE OVEREXPOSURE:

INHALATION: Short-term harmful health effects are not expected from vapor generated at ambient temperature. Vapors and/or aerosols that may be formed at elevated temperatures may be irritating to eyes and respiratory tract. Avoid breathing vapors or mists.

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: No evidence of harmful effects from available information.

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

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.

Designer Molecules, Inc.

Material Safety Data Sheet

Product: MM-290
MSDS ID: R1134

Revised Date: 02/20/09
Replaces Date: 08/31/06

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): > 300°F, (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.

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:

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.

PERSONAL PRECAUTIONS:

Wear suitable protective equipment.

ENVIRONMENTAL PRECAUTIONS:

This product is essentially insoluble in water. This material is resistant to rapid biodegradation. May be toxic to aquatic life. Avoid runoff to waterways and sewers.

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 at 5°C away from incompatible materials identified in the *Stability and Reactivity Section*.

8. Exposure Controls and Personal Protection Measures

EXPOSURE LIMITS:

None established by OSHA, ACGIH or UCC

Designer Molecules, Inc.

Material Safety Data Sheet

Product: MM-290
MSDS ID: R1134

Revised Date: 02/20/09
Replaces Date: 08/31/06

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: Solvent impermeable gloves.

Eyes: Chemical safety goggles.

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: | Liquid |
| Color: | Amber/red |
| Odor: | Bitter odor |

OTHER PROPERTIES:

| | |
|-----------------------------|-------------------------|
| Boiling Point: | Not determined. |
| Melting Point: | Not determined. |
| pH: | Not currently available |
| Density (g/CC): | 0.98 |
| Vapor Pressure (mmHg): | Not determined |
| Vapor Density (air=1): | Not determined |
| Volatile Organic Compounds: | ≈ 0% |
| Solubility in water: | Not determined |
| Evaporation rate: | Not determined |
| Percent volatile (weight): | ≈ 0% |
| Decomposition Temperature: | 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: Will not occur during normal storage and handling.

Designer Molecules, Inc.

Material Safety Data Sheet

Product: MM-290
MSDS ID: R1134

Revised Date: 02/20/09
Replaces Date: 08/31/06

11. Toxicological Information

Toxicological testing has not been performed on this product.

CARCINOGEN STATUS: CAS # 903876-45-9: not listed by ACGIH, IARC, NTP or CA Prop 65
EPIDEMIOLOGY: No information found
TERATOGENICITY: No information found
REPRODUCTIVE EFFECTS: No information found
MUTAGENICITY: No information found
NEUROTOXICITY: No information found

12. Ecological Information

POTENTIAL EFFECT ON ENVIRONMENT: Unknown
MOBILITY: Insoluble
POTENTIAL TO BIOACCUMULATE: Unknown
AQUATIC TOXICITY: None established

13. Disposal Considerations

WASTE DISPOSAL METHOD: Disposal should be in accordance with local, state of national legislation.
EMPTY CONTAINER WARNINGS: Empty containers may contain product residue, follow MSDS and label warnings even after they have been emptied.

14. Transport Information

Not a hazardous material for transportation.

US DOT REGULATIONS:

NON-BULK Proper Shipping Name: Not regulated
BULK Proper Shipping Name: 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: This product contains the following chemicals that are known to the State of California to cause cancer, birth defects or other reproductive harm.

| 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.

| SARA 313 TOXIC CHEMICALS: | Component | CAS Number |
|---------------------------|-----------|------------|
| | None | |

Designer Molecules, Inc.
Material Safety Data Sheet

Product: MM-290
MSDS ID: R1134

Revised Date: 02/20/09
Replaces Date: 08/31/06

R Phrases: R 36, 38, 43
R 36/37/38 Irritating to eyes, respiratory system and skin

S Phrases: S 26, 28 (soap and water), 36

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.