SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers
Product Name : Monoolein, 1 gram
Product Number : HR2-435
REACH No. : A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.
CAS Number : 111-03-5

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses : Laboratory chemicals, Manufacture of substances.

1.3 Details of the supplier of the Safety Data Sheet
Company : Hampton Research
34 Journey
Aliso Viejo, CA 92656-3317
United States
Telephone : 949 425 1321
Fax : 949 425 1611
E-mail : tech@hrmail.com

1.4 Emergency telephone number
Emergency phone : 949 425 1321
For CHEMTREC Assistance : 800 424 9300
For CHEMTREC Assistance : 703 527 3887 (International)

SECTION 2: Hazards Identification

2.1 Classification of the substance or mixture
Not a hazardous substance or mixture according to Regulation (EC) No. 1272/2008. This substance is not classified as dangerous according to Directive 67/548/EEC.

2.2 Label elements
Not a hazardous substance or mixture according to EC-directives 67/548/EEC or 1999/45/EC.

2.3 Other hazards : none
SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

<table>
<thead>
<tr>
<th>Substance Name</th>
<th>Synonyms</th>
<th>Formula</th>
<th>Mr</th>
<th>CAS #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monoolein</td>
<td>1-(cis-9-Octadecenoyl)-rac-glycerol, rac-Glycerol</td>
<td>C₂₁H₄₀O₄</td>
<td>356.50</td>
<td>111-03-5</td>
</tr>
<tr>
<td></td>
<td>1-monooleate, DL-a-Monoolein, Glyceryl cis-9-octadecenoate, 1-Oleoyl-rac-glycerol, 9-monoolein, 9-monooctadecanoin</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EC #</th>
<th>RTECS</th>
<th>Merck</th>
<th>Beilstein</th>
<th>SARA</th>
<th>MDL #</th>
<th>PubChem Substance ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>203-827-7</td>
<td>N/A</td>
<td>N/A</td>
<td>1728976</td>
<td>No</td>
<td>MFC00042735</td>
<td>24897178</td>
</tr>
</tbody>
</table>

No components need to be disclosed according to the applicable regulations.

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

General Advice
Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes as a precaution and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media
None known

5.2 Special hazards arising from the substance or mixture
Carbon oxides

5.3 Advice for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.
5.4   Further Information
  No data available

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1   Personal precautions, protective equipment and emergency procedures
  Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas.
  Ensure adequate ventilation. Avoid breathing dust. For personal protection see section 8.

6.2   Environmental precautions
  Do not let product enter drains.

6.3   Methods and materials for containment and cleaning up
  Pick up and arrange disposal without creating dust.
  Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4   Reference to other sections
  For disposal see section 13.

SECTION 7: HANDLING AND STORAGE

7.1   Personal Precautions
  Provide appropriate exhaust ventilation at places where dust is formed.
  See Section 8 for additional information on hygiene measures. Normal measures for preventive fire protection.

7.2   Conditions for safe storage, including any incompatibilities
  Store in cool place. Keep container tightly closed in a dry and well-ventilated place.
  Recommended storage temperature: -20 °C. Store under inert gas. Air and light sensitive.

7.3   Specific end uses
  A part from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1   Control parameters
  Components with workplace control parameters

8.2   Exposure controls
  Appropriate engineering controls
  Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at
  the end of workday.
  Personal protective equipment
  Eye/face protection
  Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested
  and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Body Protection
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Do not let product enter drains.

SECTION 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties

a) Appearance
   Form: Solid
   Color: White

b) Odor
   no data available

c) Odor Threshold
   no data available

d) pH
   no data available

e) Melting point/freezing point
   35.0°C

f) Initial boiling point and boiling range
   no data available

g) Flash point
   154.0°C - closed cup

h) Evaporation rate
   no data available

i) Flammability (solid, gas)
   no data available

j) Upper/lower flammability or explosive limits
   no data available

k) Vapor pressure
   no data available

l) Vapor density
   no data available

m) Relative density
   no data available

n) Water solubility
   no data available

o) Partition coefficient:
   no data available
   octanol/water

p) Autoignition temperature
   no data available

q) Decomposition temperature
   no data available
(CONTINUED) - SECTION 9: Physical and Chemical Properties

r) Viscosity
no data available

s) Explosive properties
no data available

t) Oxidizing properties
no data available

9.2 Other safety information
no data available

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity
no data available

10.2 Chemical stability
no data available

10.3 Possibility of hazardous reactions
no data available

10.4 Conditions to avoid
no data available

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - no data available
In the event of fire: see section 5

SECTION 11: Toxicological Information

11.1 Information on toxicological effects

Acute toxicity
no data available

Skin / irritation and corrosion
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
no data available
Chronic exposure
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen by IARC.

Reproductive toxicity
no data available

Specific target organ toxicity - single exposure
no data available

Specific target organ toxicity - repeated exposure
no data available

Aspiration hazard
no data available

Potential health effects
Inhalation May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion May be harmful if swallowed.
Skin May be harmful if absorbed through skin. May cause skin irritation.
Eyes May cause eye irritation.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional information
RTECS: Not available

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity
no data available

12.2 Persistence and degradability
no data available

12.3 Bioaccumulative potential
no data available

12.4 Mobility in soil
no data available

12.5 Results of PBT and vPvB assessment
no data available

12.6 Other adverse effects
no data available
SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods
   Product
   Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

   Contaminated packaging
   Dispose of as unused product.

SECTION 14: TRANSPORTATION INFORMATION

14.1 UN number
   ADR/RID: -  IMDG: -  IATA: -

14.2 UN proper shipping name
   ADR/RID: Not dangerous goods
   IMDG: Not dangerous goods
   IATA: Not dangerous goods

14.3 Transport hazard class(es)
   ADR/RID: -  IMDG: -  IATA: -

14.4 Packaging group
   ADR/RID: -  IMDG: -  IATA: -

14.5 Environmental hazards
   ADR/RID: No  IMDG Marine pollutant: no  IATA: No

14.6 Special precautions for user
   No data available

SECTION 15: Regulatory Information

This safety datasheet complies with the requirements of Regulation (EC) No 1907/2006.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
   No data available

15.2 Chemical Safety Assessment
   No data available
SECTION 16: Other Information

DISCLAIMER
For research use only. Not for drug, household, or other use.

WARRANTY
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of this product. Hampton Research Corp., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.
License granted to make unlimited paper copies for internal use only.