1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifier
   Product Name: Madecassoside
   Catalog No.: T2813
   CAS No.: 34540-22-2

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: Target Molecule Corp.
   Tel: +1 (857) 239-0968
   Fax: +1 832 582-8590

2. HAZARDS IDENTIFICATION

2.1 Classification of the Substance or Mixture:
   Not a hazardous substance or mixture.

2.2 GHS Label elements, including precautionary statements:
   Not a hazardous substance or mixture.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS
   none

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substances
   Synonyms: -
   Formula: C_{48}H_{78}O_{20}
   Molecular weight: 975.12 mg/mol
   CAS-No.: 34540-22-2

4. FIRST AID MEASURES

4.1 Description of first aid measures
   4.1.1 In Case of Inhalation
   Remove to fresh air; if breathing is difficult, give oxygen; if breathing stops, give artificial respiration.

   4.1.2 In Case of Skin Contact
   Flush with copious amounts of water; remove contaminated clothing and shoes; call a physician

   4.1.3 In Case of Eye Contact:
   Check for and remove contact lenses and flush with copious amounts of water; assure adequate flushing by separating the eye lids with fingers; call a physician

   4.1.4 In Case of Ingestion
   Wash out mouth with copious amounts of water; call a physician.

4.2 Most important symptoms and effects, both acute and delayed
   The most important known symptoms and effects are described in the labelling (see section 2.2).

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

5. FIREFIGHTING MEASURES

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

5.2 Special protective equipment for firefighters
   Wear self-contained breathing apparatus for firefighting if necessary.

5.3 Special hazards arising from the substance or mixture
Hazardous combustion products: Carbon oxides.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Avoid dust formation. Avoid breathing vapors, mist or gas. Avoid breathing dust. As conditions warrant, wear a NIOSH approved self-contained breathing apparatus, or respirator, and appropriate personal protection (rubber boots, safety goggles, and heavy rubber gloves).

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.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Recommended storage temperature: Store at -20°C

8. EXPOSURE CONTROLS/PERSO PERSONAL PROTECTION

8.1 Control parameters
Components with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls
8.2.1 Engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.
8.2.2 Personal protective equipment
Eye protection : Safety goggles with side-shields.
Hand protection : Protective gloves.
Skin and body protection : Impervious clothing.
Respiratory protection : Suitable respirator.
Environmental exposure controls : Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Solid</td>
</tr>
<tr>
<td>Odor</td>
<td>No data available</td>
</tr>
<tr>
<td>Odor threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Melting/freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point/range</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
</tbody>
</table>
Upper/lower flammability or explosive limits: No data available
Vapor pressure: No data available
Vapor density: No data available
Relative density: No data available
Water solubility: No data available
Partition coefficient: No data available
Auto-ignition temperature: No data available
Decomposition temperature: No data available
Viscosity: No data available
Explosive properties: No data available
Oxidizing properties: No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available.

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available.

10.4 Conditions to avoid
No data available.

10.5 Materials to avoid
Strong oxidizing agents.

10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - see section 5
Other decomposition products - no data available.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects
Acute toxicity
No data available.
Skin corrosion/irritation
No data available.
Serious eye damage/eye irritation
No data available.
Respiratory or skin sensitisation
No data available.
Germ cell mutagenicity
No data available.
Carcinogenicity
IARC: No component of this product present at a level equal to or greater than 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at a level equal to or greater than 0.1% is identified as a potential or confirmed carcinogen by ACGIH.
NTP: No component of this product present at a level equal to or greater than 0.1% is identified as a anticipated or confirmed carcinogen by NTP.
OSHA: No component of this product present at a level equal to or greater than 0.1% is identified as a potential or confirmed carcinogen by OSHA.

**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.

**Additional Information**

RTECS: YU9555000
The toxicological effects of this product have not been thoroughly studied.

### 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
BT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other adverse effects
No data available.

### 13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

**Product**
Dispose substance in accordance with prevailing country, federal, state and local regulations.

**Contaminated packaging**
Dispose of as unused product.

### 14. TRANSPORT INFORMATION

**DOT (US)**
Not dangerous goods

**IMDG**
Not dangerous goods

**IATA**
Not dangerous goods

### 15. REGULATORY INFORMATION

**SARA 302 Components**
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313 Components**
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**SARA 311/312 Hazards**
No SARA Hazards.

**Massachusetts Right to Know Components**
No components are subject to the Massachusetts Right to Know Act.
Pennsylvania Right to Know Components
Listed.
New Jersey Right to Know Components
Listed.
California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION
The above information is believed to be correct based on the present state of our knowledge but does not purport to be complete. The product is for research and trained personnel use only. Target Molecule disclaims all liability for any damage resulting from handling or from contact with the above product.