SAFETY DATA SHEETS
According to the UN GHS revision 8

SECTION 1: Identification

1.1 GHS Product identifier
Product name  N,N-Dimethyloctadecan-1-amine

1.2 Other means of identification

1.3 Recommended use of the chemical and restrictions on use
Identified uses  Corrosion inhibitors and anti-scaling agents, Intermediates, Lubricants and lubricant additives, Surface active agents
Uses advised against  no data available

1.4 Supplier's details
Company  Target Molecule Corp.
Address  Suite 260, 36 Washington Street, Wellesley Hills, Massachusetts, USA
Tel/Fax  +1 (857) 239-0968

1.5 Emergency phone number
Emergency phone number  400-821-2233
Service hours  Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture
Acute toxicity - Category 4, Oral
Skin corrosion, Sub-category 1B
Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1
Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1

2.2 GHS label elements, including precautionary statements

Signal word  Danger
Hazard statement(s)  
H302 Harmful if swallowed
H314 Causes severe skin burns and eye damage
H410 Very toxic to aquatic life with long lasting effects
Precautionary statement(s)  
Prevention  
P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P280 Wear protective gloves/protective clothing/eye protection/face protection/...
2.3 Other hazards which do not result in classification

no data available
SECTION 3: Composition/information on ingredients

3.1 Substances

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>Common names and synonyms</th>
<th>CAS number</th>
<th>EC number</th>
<th>Concentration</th>
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<tbody>
<tr>
<td>Dimantine</td>
<td>Dimantine</td>
<td>124-28-7</td>
<td>204-694-8</td>
<td>100%</td>
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</tbody>
</table>

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Move the victim into fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration and consult a doctor immediately. Do not use mouth to mouth resuscitation if the victim ingested or inhaled the chemical.

Following skin contact

Take off contaminated clothing immediately. Wash off with soap and plenty of water. Consult a doctor.

Following eye contact

Rinse with pure water for at least 15 minutes. Consult a doctor.

Following ingestion

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

4.2 Most important symptoms/effects, acute and delayed

Excerpt from ERG Guide 153 [Substances - Toxic and/or Corrosive (Combustible)]: TOXIC, inhalation, ingestion or skin contact with material may cause severe injury or death. Contact with molten substance may cause severe burns to skin and eyes. Avoid any skin contact. Effects of contact or inhalation may be delayed. Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution. (ERG, 2016)

4.3 Indication of immediate medical attention and special treatment needed, if necessary

no data available

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Excerpt from ERG Guide 153 [Substances - Toxic and/or Corrosive (Combustible)]: SMALL FIRE: Dry chemical, CO2 or water spray. LARGE FIRE: Dry chemical, CO2, alcohol-resistant foam or water spray. Move containers from fire area if you can do it without risk. Dike fire-control water for later disposal; do not scatter the material. FIRE INVOLVING TANKS OR CAR/TRAILER LOADS: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Do not get water inside containers. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire. (ERG, 2016)

5.2 Specific hazards arising from the chemical

Excerpt from ERG Guide 153 [Substances - Toxic and/or Corrosive (Combustible)]: Combustible material: may burn but does not ignite readily. When heated, vapors may form explosive mixtures with air: indoors, outdoors and sewers explosion hazards. Those substances designated with a (P) may polymerize explosively when heated or involved in a fire. Contact with metals may evolve flammable hydrogen gas. Containers may explode when heated. Runoff may pollute waterways. Substance may be transported in a molten form. (ERG, 2016)

5.3 Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing mist, gas or vapours. Avoid contacting with skin and eye. Use personal protective equipment. Wear chemical impermeable gloves. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Keep people away from upwind of spill/leak.
6.2 Environmental precautions

Prevent further spillage or leakage if it is safe to do so. Do not let the chemical enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

7.2 Conditions for safe storage, including any incompatibilities

Store the container tightly closed in a dry, cool and well-ventilated place. Store apart from foodstuff containers or incompatible materials.
Recommended storage temperature: Store at -20°C

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values
no data available

Biological limit values
no data available

8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection
Wear tightly fitting safety goggles with side-shields conforming to EN 166(EU) or NIOSH (US).

Skin protection
Wear fire/flame resistant and impervious clothing. Handle with gloves. Gloves must be inspected prior to use. 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.

Respiratory protection
If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator.

Thermal hazards
no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state
N-n-dimethyl-1-octadecanamine is a clear yellow liquid with a fishlike odor. Insoluble in water and less dense than water. Hence floats on water. Contact may irritate skin, eyes and mucous membranes. May be toxic by ingestion, inhalation or skin absorption. Used to make other chemicals.

Colour
no data available

Odour
no data available

Melting point/freezing point
-46°C(lit.)
Boiling point or initial boiling point: 90°C/25mmHg (lit.)

<table>
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<th>Property</th>
<th>Value</th>
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<tbody>
<tr>
<td>Flammability</td>
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<tr>
<td>Lower and upper explosion limit/flammability limit</td>
<td>no data available</td>
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<tr>
<td>Flash point</td>
<td>96°C (lit.)</td>
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<tr>
<td>Auto-ignition temperature</td>
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<tr>
<td>Decomposition temperature</td>
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</tr>
<tr>
<td>pH</td>
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</tr>
<tr>
<td>Kinematic viscosity</td>
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</tr>
<tr>
<td>Solubility</td>
<td>In water: Slightly soluble</td>
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<tr>
<td>Partition coefficient n-octanol/water</td>
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<tr>
<td>Vapour pressure</td>
<td>5.03E-05 mmHg at 25°C</td>
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<tr>
<td>Density and/or relative density</td>
<td>0.8</td>
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<tr>
<td>Relative vapour density</td>
<td>no data available</td>
</tr>
<tr>
<td>Particle characteristics</td>
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</tbody>
</table>

**SECTION 10: Stability and reactivity**

10.1 Reactivity
no data available

10.2 Chemical stability
no data available

10.3 Possibility of hazardous reactions

N,N-DIMETHYL-1-OCTADECANAMINE neutralizes acids in exothermic reactions to form salts plus water. May be incompatible with isocyanates, halogenated organics, peroxides, phenols (acidic), epoxides, anhydrides, and acid halides. Flammable gaseous hydrogen may be generated in combination with strong reducing agents, such as hydrides.

10.4 Conditions to avoid
no data available

10.5 Incompatible materials
no data available

10.6 Hazardous decomposition products
no data available

**SECTION 11: Toxicological information**

Acute toxicity
- Oral: no data available
- Inhalation: no data available
- Dermal: no data available

Skin corrosion/irritation
no data available

Serious eye damage/irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
Carcinogenicity
no data available

Reproductive toxicity
no data available

STOT-single exposure
no data available

STOT-repeated exposure
no data available

Aspiration hazard
no data available

SECTION 12: Ecological information

12.1 Toxicity
- Toxicity to fish: no data available
- Toxicity to daphnia and other aquatic invertebrates: no data available
- Toxicity to algae: no data available
- Toxicity to microorganisms: 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 Other adverse effects
no data available

SECTION 13: Disposal considerations

13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

14.1 UN Number

<table>
<thead>
<tr>
<th>ADR/RID: Not dangerous goods. (For reference only, please check.)</th>
<th>IMDG: Not dangerous goods. (For reference only, please check.)</th>
<th>IATA: Not dangerous goods. (For reference only, please check.)</th>
</tr>
</thead>
</table>

14.2 UN Proper Shipping Name

| ADR/RID: Not dangerous goods. (For reference only, please check.) | IMDG: Not dangerous goods. (For reference only, please check.) | IATA: Not dangerous goods. (For reference only, please check.) |
14.3 Transport hazard class(es)

ADR/RID: Not dangerous goods. (For reference only, please check.)
IMDG: Not dangerous goods. (For reference only, please check.)
IATA: Not dangerous goods. (For reference only, please check.)

14.4 Packing group, if applicable

ADR/RID: Not dangerous goods. (For reference only, please check.)
IMDG: Not dangerous goods. (For reference only, please check.)
IATA: Not dangerous goods. (For reference only, please check.)

14.5 Environmental hazards

ADR/RID: Yes
IMDG: Yes
IATA: Yes

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

<table>
<thead>
<tr>
<th>Chemical name</th>
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European Inventory of Existing Commercial Chemical Substances (EINECS) Listed.
EC Inventory Listed.
United States Toxic Substances Control Act (TSCA) Inventory Listed.
China Catalog of Hazardous chemicals 2015 Not Listed.
New Zealand Inventory of Chemicals (NZIoC) Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS) Listed.
Vietnam National Chemical Inventory Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC) Listed.
Korea Existing Chemicals List (KECL) Listed.

SECTION 16: Other information

Information on revision

Creation Date July 15, 2019
Revision Date July 15, 2019

Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

References

- IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home
- IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website:
http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en

- CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple
- Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp

Disclaimer: 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 the product. We as supplier shall not be held liable for any damage resulting from handling or from contact with the above product.