1 Identification

Product identifier
Product name: 1-Hexadecylamine, tech. 90%, remainder mainly 1-octadecylamine

Stock number: B22459

Relevant identified uses of the substance or mixture and uses advised against.
Identified use: SU24 Scientific research and development

Details of the supplier of the safety data sheet
Manufacturer/Supplier:
Alfa Aesar
Thermo Fisher Scientific Chemicals, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Tel: 800-343-0660
Fax: 800-322-4757
Email: tech@alfa.com
www.alfa.com

Information Department: Health, Safety and Environmental Department
Emergency telephone number:
During normal business hours (Monday-Friday, 8am-7pm EST), call (800) 343-0660. After normal business hours, call Carechem 24 at (866) 928-0789.

2 Hazard(s) identification

Classification of the substance or mixture in accordance with 29 CFR 1910 (OSHA HCS)

GHS05 Corrosion
Skin Corr. 1B H314 Causes severe skin burns and eye damage.

GHS07
Acute Tox. 4 H302 Harmful if swallowed.
Hazards not otherwise classified No information known.

Label elements

GHS label elements The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

Hazard pictograms

Signal word Danger

Hazard-determining components of labeling:
Hexadecylamine
1-Octadecylamine

Hazard statements
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.

Precautionary statements
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P305+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

WHMIS classification
D2B - Toxic material causing other toxic effects
E - Corrosive material

Classification system
HMIS ratings (scale 0-4) (Hazardous Materials Identification System)

Health (acute effects) = 3
Flammability = 1
Physical Hazard = 1

Other hazards
Results of PBT and vPvB assessment
PBT: Not applicable.
vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization: Mixtures

Dangerous components:

<table>
<thead>
<tr>
<th>Component</th>
<th>%</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>143-27-1 Hexadecylamine</td>
<td>90.0%</td>
<td>Skin Corr. 1B, H314; Eye Dam. 1, H318</td>
</tr>
<tr>
<td>124-30-1 1-Octadecylamine</td>
<td>10.0%</td>
<td>Acute Tox. 3, H301; Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335</td>
</tr>
</tbody>
</table>

Additional information None known.

4 First-aid measures

Description of first aid measures

General information Immediately remove any clothing soiled by the product.
After inhalation
Supply fresh air. If required, provide artificial respiration. Keep patient warm.
Seek immediate medical advice.

After skin contact
Immediately wash with water and soap and rinse thoroughly.
Seek immediate medical advice.

After eye contact
Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing
Seek medical treatment.

Information for doctor
Most important symptoms and effects, both acute and delayed
Causes severe skin burns.
Causes serious eye damage.
Indication of any immediate medical attention and special treatment needed
No further relevant information available.

5 Fire-fighting measures
Extinguishing media
Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Suitable extinguishing agents
Carbon monoxide and carbon dioxide
Nitrogen oxides (NOx)

Advice for firefighters
Protective equipment:
Wear self-contained respirator.
Wear fully protective impervious suit.

6 Accidental release measures
Personal precautions, protective equipment and emergency procedures
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation.

Environmental precautions:
Do not allow product to reach sewage system or any water course.

Methods and material for containment and cleaning up
Use neutralizing agent.
Dispose of contaminated material as waste according to section 13.
Ensure adequate ventilation.

Prevention of secondary hazards:
No special measures required.
Reference to other sections
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage
Handling
Precautions for safe handling
Keep container tightly sealed.
Store in cool, dry place in tightly closed containers.
Ensure good ventilation at the workplace.

Information about protection against explosions and fires:
No information known.

Conditions for safe storage, including any incompatibilities

Storage
Requirements to be met by storerooms and receptacles:
No special requirements.

Information about storage in one common storage facility:
Do not store together with acids.
Store away from oxidizing agents.

Further information about storage conditions:
Store container tightly sealed.
Store in cool, dry conditions in well sealed containers.

Specific end use(s)
No further relevant information available.

8 Exposure controls/personal protection
Additional information about design of technical systems:
Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Control parameters
Components with limit values that require monitoring at the workplace:
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

Additional information:
No data

Exposure controls
Personal protective equipment
General protective and hygienic measures
The usual precautionary measures for handling chemicals should be followed.
Keep away from foodstuffs, beverages and feed.
Remove all soiled and contaminated clothing immediately.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
Maintain an ergonomically appropriate working environment.

Breathing equipment:
Use suitable respirator when high concentrations are present.
Recommended filter device for short term use:
Use a respirator with type P100 (USA) or P3 (EN 143) cartridges as a backup to engineering controls. Risk assessment should be performed to determine if air-purifying respirators are appropriate. Only use equipment tested and approved under appropriate government standards.

Protection of hands:
Impervious gloves
Check protective gloves prior to each use for their proper condition.
The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

Material of gloves:
Nitrile rubber, NBR

Penetration time of glove material (in minutes) 480

Glove thickness 0.11 mm

Eye protection:
Tightly sealed goggles

Full face protection

(Contd. on page 3)
9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:
- Form: Solid
- Color: White to cream
- Odor: Not determined
- Odor threshold: Not determined.

pH-value:
- Not applicable.

Change in condition
- Melting point/Melting range: Not determined
- Boiling point/Boiling range: Not determined
- Sublimation temperature/start: Not determined

Flash point:
- 140 °C (284 °F)

Flammability (solid, gaseous):
- Not determined.

Ignition temperature:
- Not determined

Decomposition temperature:
- Not determined

Auto igniting:
- Product is not selfigniting.

Danger of explosion:
- Not determined.

Explosion limits:
- Lower: Not determined
- Upper: Not determined

Vapor pressure:
- Not applicable.

Density at 20 °C (68 °F):
- 0.813 g/cm³ (6.784 lbs/gal)

Relative density:
- Not determined.

Vapor density:
- Not applicable.

Evaporation rate:
- Not applicable.

Solubility in / Miscibility with
- Water: Insoluble

Partition coefficient (n-octanol/water):
- Not determined

Viscosity:
- Dynamic: Not applicable
- Kinematic: Not applicable

Solvent content:
- Organic solvents: 0.0 %
- Solids content: 100.0 %

Other information:
- No further relevant information available.

10 Stability and reactivity

Reactivity:
- No information known.

Chemical stability:
- Stable under recommended storage conditions.

Thermal decomposition / conditions to be avoided:
- Decomposition will not occur if used and stored according to specifications.

Possibility of hazardous reactions:
- Reacts with strong oxidizing agents

Conditions to avoid:
- No further relevant information available.

Incompatible materials:
- Acids
- Oxidizing agents

Hazardous decomposition products:
- Carbon monoxide and carbon dioxide
- Nitrogen oxides

11 Toxicological information

Information on toxicological effects

Acute toxicity:
- Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.
- The Registry of Toxic Effects of Chemical Substances (RTECS) contains acute toxicity data for components in this product.

LD/LC50 values that are relevant for classification:
- No data

Skin irritation or corrosion:
- Causes severe skin burns

Eye irritation or corrosion:
- Causes serious eye damage

Sensitization:
- No sensitizing effects known.

Germ cell mutagenicity:
- No effects known.

Carcinogenicity:
- No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

Reproductive toxicity:
- The Registry of Toxic Effects of Chemical Substances (RTECS) contains reproductive data for components in this product.

Specific target organ system toxicity - single exposure:
- No effects known.

Aspiration hazard:
- No effects known.

Subacute to chronic toxicity:
- The Registry of Toxic Effects of Chemical Substances (RTECS) contains multiple dose toxicity data for this substance.

Additional toxicological information:
- To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.
- The product shows the following dangers according to internally approved calculation methods for preparations:

- Corrosive

12 Ecological information

Toxicity:
- No further relevant information available.

Aquatic toxicity:
- No further relevant information available.

Pesticide and degradability:
- No further relevant information available.

Biocumulative potential:
- No further relevant information available.

Mobility in soil:
- No further relevant information available.

Additional ecological information:
- General notes:
- Do not allow product to reach ground water, water course or sewage system.
- Danger to drinking water if even small quantities leak into the ground.
- Avoid transfer into the environment.
### Results of PBT and vPvB assessment

**PBT:** Not applicable.

**vPvB:** Not applicable.

### Other adverse effects

No further relevant information available.

### 13 Disposal considerations

**Waste treatment methods**

Recommendation: Consult state, local or national regulations to ensure proper disposal.

**Uncleaned packagings:**

Recommendation: Disposal must be made according to official regulations.

### 14 Transport information

<table>
<thead>
<tr>
<th><strong>UN-Number</strong></th>
<th>UN3259</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DOT, IMDG, IATA</strong></td>
<td>Amines, solid, corrosive, n.o.s. (Hexadecylamine)</td>
</tr>
<tr>
<td><strong>UN proper shipping name</strong></td>
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**Transport hazard class(es)**

<table>
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<tr>
<th>DOT</th>
<th>IMDG, IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 Corrosive substances.</td>
<td>8 Corrosive substances.</td>
</tr>
<tr>
<td>8 (C8) Corrosive substances</td>
<td>8 Corrosive substances.</td>
</tr>
</tbody>
</table>

**Packing group**

| DOT, IMDG, IATA | III |

**Environmental hazards:**

Marine pollutant (IMDG): No

**Special precautions for user**

EMS Number: F-A,S-B

Segregation groups: Alkalis

**Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

**Transport/Additional information:**

| DOT | UN "Model Regulation": UN3259, Amines, solid, corrosive, n.o.s. (Hexadecylamine), 8, III |

### 15 Regulatory information

**Safety, health and environmental regulations/legislation specific for the substance or mixture**

**GHS label elements** The product is classified and labeled in accordance with 29 CFR 1910 (OSHA HCS)

**Hazard pictograms**

Hazard determinating components of labeling:

Hexadecylamine

1-Octadecylamine

**Hazard statements**

H302 Harmful if swallowed.

H314 Causes severe skin burns and eye damage.

**Precautionary statements**

P260 Do not breathe dust/fume/gas/mist/vapours/spray.

P303+P361+P353 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

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P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**National regulations**

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

**SARA Section 313 (specific toxic chemical listings)**

None of the ingredients are listed.

**California Proposition 65**

Prop 65 - Chemicals known to cause cancer

None of the ingredients are listed.

**Prop 65 - Developmental toxicity**

None of the ingredients are listed.

**Prop 65 - Developmental toxicity, female**

None of the ingredients are listed.
Prop 65 - Developmental toxicity, male
None of the ingredients are listed.

Information about limitation of use: For use only by technically qualified individuals.

Other regulations, limitations and prohibitive regulations

Substance of Very High Concern (SVHC) according to the REACH Regulations (EC) No. 1907/2006.
None of the ingredients are listed.

The conditions of restrictions according to Article 67 and Annex XVII of the Regulation (EC) No 1907/2006 (REACH) for the manufacturing, placing on the market and use must be observed.
None of the ingredients is listed.

Annex XIV of the REACH Regulations (requiring Authorisation for use)
None of the ingredients is listed.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information
Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement 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.

Department issuing SDS: Global Marketing Department
Date of preparation / last revision 11/24/2015 / -

Abbreviations and acronyms:
ADR, Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG, International Maritime Code for Dangerous Goods
DOT, US Department of Transportation
AICHA, International Air Transport Association
EINECS, European Inventory of Existing Commercial Chemical Substances
ELINCS, European List of Notified Chemical Substances
CAS, Chemical Abstracts Service (division of the American Chemical Society)
HMSI, Hazardous Materials Identification System (Canada)
LC50, Lethal Concentration
LD50, Lethal Dose
vPvB, very Persistent and very Bioaccumulative
ACGIH, American Conference of Governmental Industrial Hygienists (USA)
OSHA, Occupational Safety and Health Administration (USA)
NTP, National Toxicology Program (USA)
IARC, International Agency for Research on Cancer
EPA, Environmental Protection Agency (USA)