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

1.1 Product identifiers

Product name: Stearic acid

Product Number: 175366
Brand: Sigma-Aldrich
CAS-No.: 57-11-4

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company: Sigma-Aldrich Inc.
3050 SPRUCE ST
ST. LOUIS MO 63103
UNITED STATES

Telephone: +1 314 771-5765
Fax: +1 800 325-5052

1.4 Emergency telephone

Emergency Phone #: 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 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

No hazard pictogram, no signal word, no hazard statement(s), no precautionary statement(s) required

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

SECTION 3: Composition/information on ingredients

3.1 Substances

Synonyms: Octadecanoic acid

Sigma-Aldrich - 175366
Formula : C_{18}H_{36}O_{2}
Molecular weight : 284.48 g/mol
CAS-No. : 57-11-4
EC-No. : 200-313-4

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>stearic acid</td>
<td></td>
<td>&lt;= 100 %</td>
</tr>
</tbody>
</table>

**SECTION 4: First aid measures**

4.1 **Description of first-aid measures**

**If inhaled**
After inhalation: fresh air.

**In case of skin contact**
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower.

**In case of eye contact**
After eye contact: rinse out with plenty of water. Remove contact lenses.

**If swallowed**
After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.

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) and/or in section 11

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

**SECTION 5: Firefighting measures**

5.1 **Extinguishing media**

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

**Unsuitable extinguishing media**
For this substance/mixture no limitations of extinguishing agents are given.

5.2 **Special hazards arising from the substance or mixture**
Carbon oxides
Combustible.
Vapors are heavier than air and may spread along floors.
Forms explosive mixtures with air on intense heating.
Development of hazardous combustion gases or vapours possible in the event of fire.
5.3 **Advice for firefighters**
In the event of fire, wear self-contained breathing apparatus.

5.4 **Further information**
none

---

**SECTION 6: Accidental release measures**

6.1 **Personal precautions, protective equipment and emergency procedures**
Advice for non-emergency personnel: Avoid inhalation of vapours/aerosols or dusts. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

6.2 **Environmental precautions**
No special precautionary measures necessary.

6.3 **Methods and materials for containment and cleaning up**
Observe possible material restrictions (see sections 7 and 10). Take up with suitable equipment. Dispose of properly. Clean up affected area.

6.4 **Reference to other sections**
For disposal see section 13.

---

**SECTION 7: Handling and storage**

7.1 **Precautions for safe handling**
For precautions see section 2.2.

7.2 **Conditions for safe storage, including any incompatibilities**

**Storage conditions**
Tightly closed. Dry.

**Storage class**
Storage class (TRGS 510): 11: Combustible Solids

7.3 **Specific end use(s)**
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

---

**SECTION 8: Exposure controls/personal protection**

8.1 **Control parameters**

**Ingredients with workplace control parameters**

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>stearic acid</td>
<td>57-11-4</td>
<td>TWA</td>
<td>10 mg/m³</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Remarks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>3 mg/m³</td>
<td>USA. ACGIH Threshold Limit Values (TLV)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Not classifiable as a human carcinogen</td>
</tr>
</tbody>
</table>
8.2 Exposure controls

Appropriate engineering controls
Change contaminated clothing. Wash hands after working with substance.

Personal protective equipment

Eye/face protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

Skin protection
This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).
Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: KCL 741 Dermatril® L

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).
Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested: KCL 741 Dermatril® L

Respiratory protection
Recommended Filter type: Filter type ABEK-P
The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented. required when dusts/vapours/aerosols are generated.
Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Control of environmental exposure
No special precautionary measures necessary.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties
a) Appearance Form: Wax like
   Color: white
b) Odor: mild

c) Odor Threshold: No data available

d) pH: No data available

e) Melting point/freezing point:
   Melting point/range: 67 - 72 °C (153 - 162 °F) - lit.

f) Initial boiling point and boiling range: 361 °C 682 °F - lit.

g) Flash point: ca.200 °C (392 °F) - Cleveland open cup - ASTM D 92

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) Density:
   Density: 0.845 g/cm3
   Relative density: No data available

n) Water solubility: No data available

o) Partition coefficient: n-octanol/water
   No data available

p) Autoignition temperature:
   ca.400 °C (ca.752 °F)

q) Decomposition temperature:
   No data available

r) Viscosity:
   12 mm2/s at 70 °C (158 °F) - ASTM D 445 -

s) Explosive properties:
   No data available

t) Oxidizing properties:
   none

9.2 Other safety information

Surface tension:
   ca.0.03 mN/m at 20 °C (68 °F)

SECTION 10: Stability and reactivity

10.1 Reactivity

Risk of dust explosion.
Forms explosive mixtures with air on intense heating.
A range from approx. 15 Kelvin below the flash point is to be rated as critical.
Forms explosive mixtures with air on intense heating.
A range from approx. 15 Kelvin below the flash point is to be rated as critical.
10.2 Chemical stability
The product is chemically stable under standard ambient conditions (room temperature).

10.3 Possibility of hazardous reactions
Violent reactions possible with:
- Strong oxidizing agents
- Reducing agents
- Strong alkalis

10.4 Conditions to avoid
- Strong heating.
- Strong heating.

10.5 Incompatible materials
No data available

10.6 Hazardous decomposition products
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
- LD50 Oral - Rat - > 5,000 mg/kg
  (OECD Test Guideline 401)
- Inhalation: No data available
- Acute toxicity estimate Dermal - 2,500 mg/kg
  (Calculation method)
- LD50 Dermal - Rabbit - male and female - > 2,000 mg/kg
  (OECD Test Guideline 434)

Skin corrosion/irritation
- Skin - Rabbit
  Result: No skin irritation - 24 h
  (Patch Test 24 Hrs.)

Serious eye damage/eye irritation
- Eyes - Rabbit
  Result: No eye irritation
  Remarks: (ECHA)

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
- Test Type: Ames test
- Test system: S. typhimurium
- Metabolic activation: with and without metabolic activation
- Method: OECD Test Guideline 471
  Result: negative
  Remarks: (National Toxicology Program)

Carcinogenicity
IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA’s list of regulated carcinogens.

**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

11.2 Additional Information

Repeated dose toxicity - Rat - male and female - Oral - NOAEL (No observed adverse effect level) - 1,000 mg/kg
Remarks: The value is given in analogy to the following substances: Docosanoic acid

RTECS: WI2800000
Cough, Gastrointestinal discomfort, irritant effects
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

---

**SECTION 12: Ecological information**

12.1 Toxicity

Toxicity to algae

<table>
<thead>
<tr>
<th>Static test</th>
<th>ErC50 - Pseudokirchneriella subcapitata</th>
<th>&gt; 0.9 mg/l - 72 h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remarks:</td>
<td>The value is given in analogy to the following substances: palmitic acid, stearic acid</td>
<td></td>
</tr>
</tbody>
</table>

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)

<table>
<thead>
<tr>
<th>Semi-static test</th>
<th>EC50 - Daphnia magna (Water flea)</th>
<th>&gt; 0.22 mg/l - 21 d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remarks:</td>
<td>The value is given in analogy to the following substances: palmitic acid</td>
<td></td>
</tr>
</tbody>
</table>

12.2 Persistence and degradability

**Biodegradability**

aerobic - Exposure time 21 d
Result: 95 % - Readily biodegradable.
Remarks: (ECHA)
12.3 Bioaccumulative potential

Bioaccumulation: Danio rerio (zebra fish) - 28 d at 21.5 °C - 6.4 mg/l (stearic acid)

Bioconcentration factor (BCF): 238 - 288
(OECD Test Guideline 305)

Remarks: The value is given in analogy to the following substances: Sodium laurate

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Endocrine disrupting properties

No data available

12.7 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product
Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

SECTION 14: Transport information

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

Further information
Not classified as dangerous in the meaning of transport regulations.
SECTION 15: Regulatory information

**SARA 302 Components**
This material does not contain any components with a section 302 EHS TPQ.

**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.

SECTION 16: Other information

**Further information**
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. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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