1 Identification

· Product identifier
· Trade name: Stearic Acid
· Article number: 10011298
· CAS Number: 57-11-4
· EC number: 200-313-4
· Application of the substance / the mixture
  This product is for research use - Not for human or veterinary diagnostic or therapeutic use.
· Details of the supplier of the safety data sheet
  · Manufacturer/Supplier: Cayman Chemical Co.
    1180 E. Ellsworth Rd.
    Ann Arbor, MI 48108
    USA
  · Information department: Product safety department
  · Emergency telephone number:
    During normal opening times: +1 (734) 971-3335
    US/CANADA: 800-424-9300
    Outside US/CANADA: 703-741-5970

2 Hazard(s) identification

· Classification of the substance or mixture

  GHS06 Skull and crossbones
  Acute Tox. 3 H301 Toxic if swallowed.

  GHS09 Environment
  Aquatic Acute 1 H400 Very toxic to aquatic life.

  GHS07
  Skin Irrit. 2 H315 Causes skin irritation.
  Eye Irrit. 2A H319 Causes serious eye irritation.

(Contd. on page 2)
Trade name: Stearic Acid

STOT SE 3 H335 May cause respiratory irritation.

Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

· Label elements
  · GHS label elements
    The substance is classified and labeled according to the Globally Harmonized System (GHS).
  · Hazard pictograms
    
    GHS06  GHS07  GHS09

· Signal word Danger
· Hazard statements
  H301 Toxic if swallowed.
  H315 Causes skin irritation.
  H319 Causes serious eye irritation.
  H335 May cause respiratory irritation.
  H400 Very toxic to aquatic life.
  H412 Harmful to aquatic life with long lasting effects.
· Precautionary statements
  P261 Avoid breathing dust/fume/gas/mist/vapors/spray
  P264 Wash thoroughly after handling.
  P270 Do not eat, drink or smoke when using this product.
  P271 Use only outdoors or in a well-ventilated area.
  P273 Avoid release to the environment.
  P280 Wear protective gloves / eye protection / face protection.
  P301+P310 If swallowed: Immediately call a poison center/doctor.
  P321 Specific treatment (see on this label).
  P330 Rinse mouth.
  P302+P352 If on skin: Wash with plenty of water.
  P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
  P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
  P312 Call a poison center/doctor if you feel unwell.
  P362+P364 Take off contaminated clothing and wash it before reuse.
  P332+P313 If skin irritation occurs: Get medical advice/attention.
  P337+P313 If eye irritation persists: Get medical advice/attention.
  P391 Collect spillage.
  P403+P233 Store in a well-ventilated place. Keep container tightly closed.
  P405 Store locked up.
  P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
· Classification system:
· NFPA ratings (scale 0 - 4)
  
  Health = 2
  Fire = 1
  Reactivity = 0
Trade name: Stearic Acid

HMIS-ratings (scale 0 - 4)

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>FIRE</th>
<th>REACTIVITY</th>
</tr>
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<tbody>
<tr>
<td>2</td>
<td>1</td>
<td>0</td>
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</table>

Health = 2
Fire = 1
Reactivity = 0

Other hazards

Results of PBT and vPvB assessment

PBT: Not applicable.

vPvB: Not applicable.

3 Composition/information on ingredients

Chemical characterization: Substances

CAS No. Description
57-11-4 Stearic Acid

Identification number(s)
EC number: 200-313-4

4 First-aid measures

Description of first aid measures

General information:
Immediately remove any clothing soiled by the product.
In case of irregular breathing or respiratory arrest provide artificial respiration.

After inhalation: In case of unconsciousness place patient stably in side position for transportation.

After skin contact: Immediately wash with water and soap and rinse thoroughly.

After eye contact:
Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

After swallowing:
Do not induce vomiting; immediately call for medical help.

Information for doctor:

Most important symptoms and effects, both acute and delayed
May cause anemia, cough, CNS depression, drowsiness, headache, heart damage, lassitude (weakness, exhaustion), liver damage, narcosis, reproductive effects, teratogenic effects.
No further relevant information available.

Indication of any immediate medical attention and special treatment needed
No further relevant information available.

5 Fire-fighting measures

Extinguishing media

Suitable extinguishing agents:
Use fire fighting measures that suit the environment.
A solid water stream may be inefficient.

Special hazards arising from the substance or mixture
No further relevant information available.

Advice for firefighters

Protective equipment: No special measures required.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures
Not required.
Trade name: Stearic Acid

(Contd. from page 3)

- Environmental precautions:
  Inform respective authorities in case of seepage into water course or sewage system.
- Methods and material for containment and cleaning up:
  Dispose contaminated material as waste according to item 13.
  Ensure adequate ventilation.
- 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.
- Protective Action Criteria for Chemicals
  - PAC-1: 14 mg/m³
  - PAC-2: 150 mg/m³
  - PAC-3: 910 mg/m³

7 Handling and storage

- Handling:
- Precautions for safe handling: Thorough dedusting.
- Information about protection against explosions and fires: No special measures required.
- Conditions for safe storage, including any incompatibilities
  - Storage: Store in accordance with information listed on the product insert.
  - Requirements to be met by storerooms and receptacles: No special requirements.
  - Information about storage in one common storage facility: Not required.
  - Further information about storage conditions: Keep receptacle tightly sealed.
- Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.
- Control parameters
  - Components with limit values that require monitoring at the workplace:
    57-11-4 Stearic Acid
    TLV Long-term value: 10* 3** mg/m³
    *inhalable, **respirable particulate matter, *A4
- Additional information: The lists that were valid during the creation were used as basis.
- Exposure controls
- Personal protective equipment:
  - General protective and hygienic measures:
    Keep away from foodstuffs, beverages and feed.
    Immediately remove all soiled and contaminated clothing.
    Wash hands before breaks and at the end of work.
    Avoid contact with the eyes and skin.
  - Breathing equipment:
    In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.

(Contd. on page 5)
Trade name: Stearic Acid

- **Protection of hands:**
  - **Protective gloves**

  The glove material has to be impermeable and resistant to the product/ the substance/ the preparation. Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
  
  Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

- **Material of gloves**
  - The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

- **Penetration time of glove material**
  - The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

- **Eye protection:**
  - Tightly sealed goggles

---

### 9 Physical and chemical properties

- **Information on basic physical and chemical properties**
  
  - **General Information**
  
    - **Appearance:**
      - **Form:** Solid
      - **Color:** Not determined.
    
    - **Odor:** Odorless

  - **Structural Formula**
    - C18H36O2

  - **Molecular Weight**
    - 284.5 g/mol

  - **Odor threshold:** Not determined.

  - **pH-value:** Not applicable.

  - **Change in condition**
    
    - **Melting point/Melting range:** 68.8 °C (155.8 °F)
    
    - **Boiling point/Boiling range:** 383 °C (721.4 °F)

  - **Flash point:**
    - 113 °C (235.4 °F)

  - **Flammability (solid, gaseous):** Product is not flammable.

  - **Ignition temperature:**
    - 395 °C (743 °F)

  - **Decomposition temperature:** Not determined.

  - **Auto igniting:** Not determined.

  - **Danger of explosion:** Product does not present an explosion hazard.

- **Explosion limits:**
  
    - **Lower:** Not determined.
    
    - **Upper:** Not determined.
Trade name: Stearic Acid

| · Vapor pressure at 174 °C (345.2 °F): | 1.5 hPa (1.1 mm Hg) |
| Density at 20 °C (68 °F): | 0.845 g/cm³ (7.05153 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. |
| · Other information | No further relevant information available. |

10 Stability and reactivity

- Reactivity: No further relevant information available.
- Chemical stability
- Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.
- Possibility of hazardous reactions: No dangerous reactions known.
- Conditions to avoid: No further relevant information available.
- Incompatible materials: oxidizing agents, reducing agents
- Hazardous decomposition products: carbon dioxide, carbon monoxide

11 Toxicological information

- RTECS Number: W1280000
- Information on toxicological effects
- Acute toxicity:
- LD/LC50 values that are relevant for classification:

| Oral LD50 | 14,286 mg/kg (human) |
| Dermal LD50 | 4,600 mg/kg (rat) |
| Intravenous LD50 | >5,000 mg/kg (rabbit) |

- Primary irritant effect:
- on the skin: Irritant to skin and mucous membranes.
- on the eye: Irritating effect.
- Sensitization: No sensitizing effects known.
- Additional toxicological information:
- Carcinogenic categories
- IARC (International Agency for Research on Cancer) Substance is not listed.
- NTP (National Toxicology Program) Substance is not listed.
12 Ecological information

- **Toxicity**
  - **Aquatic toxicity:** No further relevant information available.
  - **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
  - **Bioaccumulative potential** No further relevant information available.
  - **Mobility in soil** No further relevant information available.
- **Ecotoxicological effects:**
  - **Remark:**
    - Very toxic for fish
    - Harmful to fish
- **Additional ecological information:**
  - **General notes:**
    - Not hazardous for water.
    - Very toxic for aquatic organisms
    - Harmful to aquatic organisms
  - **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:**
    - Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings:**
  - **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

- **UN-Number** UN3077
- **DOT, IMDG, IATA** Environmentally hazardous substance, solid, n.o.s. (Stearic Acid)
- **UN proper shipping name** Environmentally hazardous substance, solid, n.o.s. (Stearic Acid)

(Contd. from page 6)
### Transport hazard class(es)
- **DOT, IMDG**

#### Class
- **Label**: 9 Miscellaneous dangerous substances and articles

#### IATA
- **Class**: 9
- **Label**: 9 Miscellaneous dangerous substances and articles

### Packing group
- **DOT, IMDG, IATA**: III

### Environmental hazards:
- **Special marking (IATA)**: Symbol (fish and tree)

### Special precautions for user
- **Warning**: Miscellaneous dangerous substances and articles

#### Hazard identification number (Kemler code)
- **90**

#### EMS Number:
- F-A,S-F

#### Stowage Category
- A

#### Stowage Code
- SW23 When transported in BK3 bulk container, see 7.6.2.12 and 7.7.3.9.

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

### Transport/Additional information:

#### DOT
- **Quantity limitations**: On passenger aircraft/rail: 400 kg
  On cargo aircraft only: 400 kg

#### IMDG
- **Limited quantities (LQ)**: 5 kg
- **Excepted quantities (EQ)**: Code: E1
  Maximum net quantity per inner packaging: 30 g
  Maximum net quantity per outer packaging: 1000 g

#### IATA
- **Remarks**: When sold in quantities of less than or equal to 1 mL, or 1 g, with an Excepted Quantity Code of E1, E2, E4, or E5, this item meets the De Minimis Quantities exemption, per IATA 2.6.10. Therefore packaging does not have to be labeled as Dangerous Goods/Excepted Quantity.
15 Regulatory information

- Safety, health and environmental regulations/legislation specific for the substance or mixture
  No further relevant information available.
- Sara
- Section 355 (extremely hazardous substances): Substance is not listed.
- Section 313 (Specific toxic chemical listings): Substance is not listed.
- TSCA (Toxic Substances Control Act): ACTIVE
- Hazardous Air Pollutants: Substance is not listed.
- Proposition 65
  - Chemicals known to cause cancer: Substance is not listed.
  - Chemicals known to cause reproductive toxicity for females: Substance is not listed.
  - Chemicals known to cause reproductive toxicity for males: Substance is not listed.
  - Chemicals known to cause developmental toxicity: Substance is not listed.
- Carcinogenic categories
  - EPA (Environmental Protection Agency) Substance is not listed.
- TLV (Threshold Limit Value) Substance is not listed.
- NIOSH-Ca (National Institute for Occupational Safety and Health) Substance is not listed.
- Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

All chemicals may pose unknown hazards and should be used with caution. This SDS applies only to the material as packaged. If this product is combined with other materials, deteriorates, or becomes contaminated, it may pose hazards not mentioned in this SDS. Cayman Chemical Company assumes no responsibility for incidental or consequential damages, including lost profits, arising from the use of these data. It shall be the user’s responsibility to develop proper methods of handling and personal protection based on the actual conditions of use. While this SDS is based on technical data judged to be reliable, Cayman Chemical Company assumes no responsibility for the completeness or accuracy of the information contained herein.

- Department issuing SDS: Environment protection department.
- Contact: -
- Date of preparation / last revision: 04/01/2022 / -
- Abbreviations and acronyms:
  - IMDG: International Maritime Code for Dangerous Goods
  - DOT: US Department of Transportation
  - IATA: International Air Transport Association
  - EINECS: European Inventory of Existing Commercial Chemical Substances
  - CAS: Chemical Abstracts Service (division of the American Chemical Society)
  - NFPA: National Fire Protection Association (USA)
  - HMIS: Hazardous Materials Identification System (USA)
  - LC50: Lethal concentration, 50 percent
  - LD50: Lethal dose, 50 percent
  - PBT: Persistent, Bioaccumulative and Toxic
  - vPvB: very Persistent and very Bioaccumulative
  - NIOSH: National Institute for Occupational Safety
  - OSHA: Occupational Safety & Health
  - TLV: Threshold Limit Value
  - PEL: Permissible Exposure Limit
  - REL: Recommended Exposure Limit
  - Acute Tox. 3: Acute toxicity – Category 3
<table>
<thead>
<tr>
<th>Hazard Category</th>
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<tbody>
<tr>
<td>Skin Irrit. 2: Skin corrosion/irritation – Category 2</td>
</tr>
<tr>
<td>Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A</td>
</tr>
<tr>
<td>STOT SE 3: Specific target organ toxicity (single exposure) – Category 3</td>
</tr>
<tr>
<td>Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1</td>
</tr>
<tr>
<td>Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3</td>
</tr>
</tbody>
</table>