1 Identification

Product identifier

Product name: **Nonanoic acid**

Stock number: B21568, L12171

CAS Number: 112-05-0

EC number: 203-931-2

Index number: 607-197-00-8

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.
  - Eye Dam. 1 H318 Causes serious eye damage.

**Hazard(s) 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**

- GHS05

**Signal word** Danger

**Hazard statements**

- H314 Causes severe skin burns and eye damage.

**Precautionary statements**

- **P260** Do not breathe dust/fume/gas/mist/vapours/spray.
- **P303+P361+P338** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- **P305+P351+P338** IF INHALED: Remove patient from exposure area, into fresh air. Seek medical advice.
- **P310** DIRECT SKIN CLEANING: Take off clothing. Wash skin thoroughly with water/shower.
- **P319** IF ON SKIN: Wash with soap and water. Seek medical advice.
- **P330** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- **P331** IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

**WHMIS classification**

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

**Classification system**

**HMIS ratings (scale 0-4)**

- 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: Substances**

**CAS® Description:**

- 112-05-0 Nonanoic acid

**EC number(s):**

- EC number: 203-931-2

**Index number:**

- Index number: 607-197-00-8

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.
Safety Data Sheet
per OSHA HazCom 2012

Product name: Nonanoic acid

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
Suitable extinguishing agents
Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Special hazards arising from the substance or mixture
If this product is involved in a fire, the following can be released:
Carbon monoxide and carbon dioxide

Advice for firefighters
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.

Environmental precautions:
Do not allow material to be released to the environment without proper governmental permits.

Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust). Use neutralizing agent.
Disposal 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:
Store away from strong bases.
Store away from oxidizing agents.

Further information about storage conditions:
Keep 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 multi-purpose combination (US) or type ABEK (EN 14387) 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 such as NIOSH (USA) or CEN (EU).

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.

Penetration time of glove material (in minutes)
Not determined

Eye protection:
Tightly sealed goggles

Body protection:
Protective work clothing.
Product name: Nonanoic acid

9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:
- Form: Liquid
- Color: Colorless
- Odor: Unpleasant
- Odor threshold: Not determined.

pH-value (0.26 g/l) at 20 °C (68 °F): 3.5

Change in condition
- Melting point/Melting range: 10-12 °C (50-54 °F)
- Boiling point/Boiling range: 253-255 °C (487-491 °F)
- Sublimation temperature / start: Not determined

Flash point: 140 °C (284 °F)

Flammability (solid, gaseous)
- Not determined.

Ignition temperature: 405 °C (761 °F)

Decomposition temperature: Not determined

Auto igniting: Not determined.

Danger of explosion: Not determined.

Explosion limits:
- Lower: 0.8 Vol %
- Upper: 9 Vol %

Vapor pressure at 20 °C (68 °F): 0.04 hPa

Density at 20 °C (68 °F): 0.905 g/cm³ (7.552 lbs/gal)

Relative density: Not determined.

Vapor density: Not determined.

Evaporation rate: Not determined.

Solubility in / Miscibility with
- Water at 20 °C (68 °F): 0.26 g/l
- Partition coefficient (n-octanol/water): Not determined.

Viscosity:
- Dynamic: Not determined.
- Kinematic: Not determined.

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:
- Oxidizing agents
- Bases

Hazardous decomposition products: Carbon monoxide and carbon dioxide

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 this substance.

LD/LC50 values that are relevant for classification:
- Oral LD50: 5000 mg/kg (rat)
- Dermal LD50: 5000 mg/kg (rabbit)

Skin irritation or corrosion: Causes severe skin burns.

Eye irritation or corrosion: Causes serious eye damage.

Sensitization: No sensitizing effects known.

Germ cell mutagenicity: The Registry of Toxic Effects of Chemical Substances (RTECS) contains mutation data for this substance.

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 this substance.

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

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.

12 Ecological information

Toxicity
- Aquatic toxicity: No further relevant information available.
- Persistence and degradability: No further relevant information available.
- Bioaccumulative potential: No further relevant information available.
- Mobility in soil: No further relevant information available.

Additional ecological information:
- General notes: Do not allow undiluted product or large quantities to reach ground water, water course or sewage system.
- 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.
14 Transport information

<table>
<thead>
<tr>
<th>DOT, IMDG, IATA</th>
<th>UN Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN3265</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DOT, IMDG, IATA</th>
<th>Proper shipping name</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Corrosive liquid, acidic, organic, n.o.s. (Nonanoic acid)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IMDG, IATA</th>
<th>Proper shipping name</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (Nonanoic acid)</td>
</tr>
</tbody>
</table>

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

GHS05 Danger

Signal word

H314 Causes severe skin burns and eye damage.

Precautionary statements

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

P303+P361+P330 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.

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) Substance is not listed.

California Proposition 65

Prop 65 - Chemicals known to cause cancer Substance is not listed.

Prop 65 - Developmental toxicity Substance is not listed.

Prop 65 - Developmental toxicity, female Substance is not listed.

Prop 65 - Developmental toxicity, male Substance is not 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. Substance is not 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.

Substance is not listed.

Annex XIV of the REACH Regulations (requiring Authorisation for use) Substance is not 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 11/23/2015

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

IATA: International Air Transport Association
| Product name: Nonanoic acid

<table>
<thead>
<tr>
<th>Acronyms</th>
<th>Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>EINECS</td>
<td>European Inventory of Existing Commercial Chemical Substances</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstracts Service (division of the American Chemical Society)</td>
</tr>
<tr>
<td>HMIS</td>
<td>Hazardous Materials Identification System (USA)</td>
</tr>
<tr>
<td>WHMIS</td>
<td>Workplace Hazardous Materials Information System (Canada)</td>
</tr>
<tr>
<td>LC[50]</td>
<td>Lethal concentration, 50 percent</td>
</tr>
<tr>
<td>LD[50]</td>
<td>Lethal dose, 50 percent</td>
</tr>
<tr>
<td>vPvB</td>
<td>very Persistent and very Bioaccumulative</td>
</tr>
<tr>
<td>ACGIH</td>
<td>American Conference of Governmental Industrial Hygienists (USA)</td>
</tr>
<tr>
<td>OSHA</td>
<td>Occupational Safety and Health Administration (USA)</td>
</tr>
<tr>
<td>NTP</td>
<td>National Toxicology Program (USA)</td>
</tr>
<tr>
<td>IARC</td>
<td>International Agency for Research on Cancer</td>
</tr>
<tr>
<td>EPA</td>
<td>Environmental Protection Agency (USA)</td>
</tr>
</tbody>
</table>