

Oleic acid (cis-9-Octadecenoic acid) SDS/MSDS (Safety Data Sheet)

1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

- * Product Name: Oleic acid (cis-9-Octadecenoic acid)
- * Catalog Number: S4707
- * CAS Number: 112-80-1
- * IUPAC Name: 9-Octadecenoic acid (9Z)-

Relevant identified uses and uses advised against

- * Identified uses: For research and development use only; laboratory chemicals; manufacture of substances.
- * Uses advised against: Not for pharmaceutical, household, or other unapproved uses.

Details of the supplier

- * Company: Selleck Chemicals
- * TollFree: +1 877 796-6397
- * Tel: +1 832 582-8158
- * Fax: +1 832 582-8590

Emergency telephone number

- * Emergency phone #: +1 832 582-8158

2. HAZARDS IDENTIFICATION

2.1 GHS classification in accordance with 29 CFR 1910 (OSHA HCS):

Skin irritation: Category 2. H315

Serious eye irritation: Category 2. H319

2.2 GHS Label elements, including precautionary statements

Hazard Pictogram(s)



Signal Word

Warning

Hazard statement(s)

H315: Causes skin irritation
H319: Causes serious eye irritation

Precautionary statement(s)

None.

Prevention

P264: Wash hands thoroughly after handling.
P264+P265: Wash hands thoroughly after handling. Do not touch eyes.
P280: Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

Response

P302+P352: IF ON SKIN: wash with plenty of water.
P305+P351: IF IN EYES: Rinse cautiously with water for several minutes.
P321: Specific treatment (see information on this label and safety datasheet)).
P332+P317: If skin irritation occurs: Get medical help.
P337+P317: If eye irritation persists: Get medical help.
P338: Remove contact lenses, if present and easy to do. Continue rinsing.
P362+P364: Take off contaminated clothing and wash it before reuse.

2.3 Other hazards

None.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Product name: Oleic acid (cis-9-Octadecenoic acid)
CAS Number: 112-80-1
PubChem CID: 445639
Molecular formula: C₁₈H₃₄O₂
Molecular weight: 282.5 g/mol
IUPAC name: (Z)-octadec-9-enoic acid

3.2 Mixtures

Not applicable (pure substance).

4. FIRST-AID MEASURES

4.1 Description of first aid measures

Inhalation: Fresh air, rest.

Skin contact: Rinse and then wash skin with water and soap.

Eye contact: First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Ingestion: INGESTION: DO NOT INDUCE VOMITING. If the victim is conscious and not convulsing, give 1 or 2 glasses of water to dilute the chemical and IMMEDIATELY call a hospital or poison control center. Be prepared to transport the victim to a hospital if advised by a physician. If the victim is convulsing or unconscious, do not give anything by mouth, ensure that the victim's airway is open and lay the victim on his/her side with the head lower than the body. DO NOT INDUCE VOMITING. IMMEDIATELY transport

4.2 Most important symptoms and effects, both acute and delayed

See Section 11 (Toxicological Information).

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Contact a poison control center or physician for severe exposure.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable: Water spray, dry chemical, carbon dioxide (CO₂), alcohol-resistant foam.

Unsuitable: None known.

5.2 Specific hazards arising from the substance or mixture

Fire Extinguishing Agents Not to Be Used: Water or foam may cause frothing.

Fire Extinguishing Agents: Dry chemical, carbon dioxide (USCG, 1999)

Use water spray, powder, foam, carbon dioxide.

Use water spray, dry chemical, foam or carbon dioxide. Water or foam may cause frothing. Water spray may be used to flush spills away from exposures.

Water or foam may cause frothing.

5.3 Advice for firefighters

Wear self-contained breathing apparatus (SCBA) and full protective clothing.

Fight fire from upwind. Cool containers with water spray until fire is extinguished.

Flash point: 372 °F (NTP, 1992)

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Wear appropriate personal protective equipment (see Section 8).

Avoid breathing dust/vapor. Ensure adequate ventilation.

Evacuate personnel to safe areas. Keep people away from and upwind of spill.

6.2 Environmental precautions

Prevent product from entering drains, waterways, or soil.

Contain spill with inert absorbent material.

6.3 Methods and materials for containment and cleaning up

Collect leaking and spilled liquid in covered containers as far as possible. Wash away remainder with plenty of water.

Cover with soda ash or sodium bicarbonate. Mix and add water. Neutralize and drain into a drain with sufficient water.

SRP: The most favorable course of action is to use an alternative chemical product with less inherent propensity for occupational exposure or environmental contamination. Recycle any unused portion of the material for its approved use or return it to the manufacturer or supplier. Ultimate disposal of the chemical must consider: the material's impact on air quality; potential migration in soil or water; effects on animal, aquatic, and plant life; and conformance with environmental and public health regulations.

Charge directly or after dissolving in a flammable solvent into the furnace with afterburner.

SRP: The scientific literature for the use of contact lenses in industry is conflicting. The benefit or detrimental effects of wearing contact lenses depend not only upon the substance, but also on factors including the form of the substance, characteristics and duration of the exposure, the uses of other eye protection equipment, and the hygiene of the lenses. However, there may be individual substances whose irritating or corrosive properties are such that the wearing of contact lenses would be harmful to the eye. In those specific cases, contact lenses should not be worn. In any event, the usual eye protection equipment should be worn even when contact lenses are in place.

SRP: Contaminated protective clothing should be segregated in such a manner so that there is no direct personal contact by personnel who handle, dispose, or clean the clothing. Quality assurance to ascertain the completeness of the cleaning procedures should be implemented before the decontaminated protective clothing is returned for reuse

by the workers. Contaminated clothing should not be taken home at end of shift, but should remain at employee's place of work for cleaning.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

SMALL SPILLS AND LEAKAGE: If you spill this chemical, use absorbent paper to pick up all liquid spill material. Your contaminated clothing and absorbent paper should be sealed in a vapor-tight plastic bag for eventual disposal. Solvent wash all contaminated surfaces with alcohol followed by washing with a strong soap and water solution. Do not reenter the contaminated area until the Safety Officer (or other responsible person) has verified that the area has been properly cleaned.

STORAGE PRECAUTIONS: You should protect this chemical from exposure to light. Keep the container tightly closed under an inert atmosphere, and store under refrigerated temperatures. (NTP, 1992)

Separated from strong bases.

Keep containers closed and store in cool and dark places.

7.2 Conditions for safe storage, including any incompatibilities

Separated from strong bases.

Keep containers closed and store in cool and dark places.

Store away from incompatible materials (see Section 10).

[Note: Specific storage temperature not available in public databases. Refer to supplier Certificate of Analysis (COA) for exact storage conditions.]

Store in original container. Keep upright to prevent leakage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Exposure controls

8.1.1 Occupational exposure limits (OEL)

OSHA PEL: Not established.

ACGIH TLV: Not established.

NIOSH REL: Not established.

No occupational exposure limit values are established for this substance.

Use the lowest feasible exposure level (ALARA principle).

8.1.2 Appropriate engineering controls

Use in a well-ventilated area. Chemical fume hood recommended for powder handling.

8.2 Individual protection measures

8.2.1 Eye/face protection

Wear chemical safety goggles.

8.2.2 Skin protection

Wear protective gloves. Recommended material: Nitrile rubber.

Wear suitable protective clothing (lab coat).

8.2.3 Respiratory protection

Respiratory protection usually not required under normal use with adequate ventilation.

Use N95 respirator for large-scale powder handling.

8.2.4 Thermal hazards

Not applicable.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- a) Appearance: Oleic acid is a colorless to pale yellow liquid with a mild odor. Floats on water. (USCG, 1999)
- b) Odor: PECULIAR LARD-LIKE ODOR
- c) Odor threshold: No data available
- d) pH: No data available
- e) Melting point/freezing point: 61.3 °F (NTP, 1992)
- f) Initial boiling point and boiling range: 547 °F at 100 mmHg (NTP, 1992)
- g) Flash point: 372 °F (NTP, 1992)
- 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: 0.00000055 [mmHg]
- l) Vapor density: No data available
- m) Relative density: 0.89 at 77 °F (USCG, 1999) - Less dense than water; will float
- n) Water solubility: Insoluble (NTP, 1992)
- o) Partition coefficient: n-octanol/water: Log P (n-octanol/water): 6.5
- p) Auto-ignition temperature: 685 °F (USCG, 1999)
- q) Decomposition temperature: No data available
- r) Viscosity: 25.6 cP at 30 °C
- s) Explosive properties: No data available
- t) Oxidizing properties: No data available

9.2 Other information

Topological Polar Surface Area (TPSA): 37.3 Å²

Complexity: 234

10. STABILITY AND REACTIVITY

10.1 Reactivity

No specific reactivity hazards identified under normal handling conditions.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No hazardous reactions under normal conditions.

10.4 Conditions to avoid

Avoid heat, sparks, open flames, direct sunlight, and moisture.

10.5 Incompatible materials

The improved preparation of 1,4-octadecanolactone involves heating oleic acid (or other C18 acids) with 70% perchloric acid to 115 °C. This is considered to be a potentially dangerous method.

Shortly after mixing /aluminum and oleic acid/, an explosion occurred, but this could not be repeated. The acid may have been peroxidized.

Potentially dangerous reaction with perchloric acid and heat.

10.6 Hazardous decomposition products

Thermal decomposition may produce: Carbon monoxide (CO), Carbon dioxide (CO₂).

See also Section 5 (Fire-fighting measures) for combustion products.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity:

No acute toxicity data available.

Skin corrosion/irritation:

Causes skin irritation (H315).

Serious eye damage/eye irritation:

Causes serious eye irritation (H319).

Respiratory or skin sensitization:

No data available.

Germ cell mutagenicity:

No data available.

Carcinogenicity:

No data available.

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

Carcinogen classification:

No indication of carcinogenicity to humans (not listed by IARC).

Signs and symptoms of exposure:

Redness.

Redness.

Data source: Hazardous Substances Data Bank (HSDB) via PubChem.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

LC50; Species: Pimephales promelas (Fathead minnow, juvenile 4-8 wk, length 1.1-3.1 cm); Conditions: freshwater, static, 18-22 °C, dissolved oxygen < or =4.0 mg/L; Concentration: 1000000 ug/L for 1 hr

LC50; Species: Pimephales promelas (Fathead minnow, juvenile 4-8 wk, length 1.1-3.1 cm); Conditions: freshwater, static, 18-22 °C, dissolved oxygen < or =4.0 mg/L; Concentration: 285000 ug/L for 24 hr

LC50; Species: Pimephales promelas (Fathead minnow, juvenile 4-8 wk, length 1.1-3.1 cm); Conditions: freshwater, static, 18-22 °C, dissolved oxygen < or =4.0 mg/L; Concentration: 252000 ug/L for 48 hr

LC50; Species: Pimephales promelas (Fathead minnow, juvenile 4-8 wk, length 1.1-3.1 cm); Conditions: freshwater, static, 18-22 °C, dissolved oxygen < or =4.0 mg/L; Concentration: 205000 ug/L for 72 hr

LC50; Species: Pimephales promelas (Fathead minnow, juvenile 4-8 wk, length 1.1-3.1 cm); Conditions: freshwater, static, 18-22 °C, dissolved oxygen < or =4.0 mg/L; Concentration: 205000 ug/L for 96 hr

/AQUATIC SPECIES/ The toxicities of chemicals found in bleached kraft pulp mill effluent were assessed using a sea urchin sperm toxicity test. Sperm of the purple sea urchin, *Strongylocentrotus purpuratus*, were preincubated with 12 individual compounds, including resin acids, unsaturated fatty acids, their chlorinated derivatives and chlorinated guaiacols. Sperm were then coincubated with eggs and inhibition of fertilization and the effects on sperm motility were assessed. Resin acids, which

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

Log P (n-octanol/water): 6.5

Potential for bioaccumulation exists (Log P > 3).

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available.

12.6 Other adverse effects

No other adverse ecological effects identified.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste Treatment Methods: Waste material must be disposed of in accordance with national and local regulations. Leave chemicals in original containers and do not mix with other waste. Handle uncleaned containers in the same manner as the product itself.

14. TRANSPORT INFORMATION

14.1 UN number

Not regulated as dangerous goods (research quantities typically exempt).

14.2 UN proper shipping name

Not subject to transport regulations (small quantities for research use).

14.3 Transport hazard class(es)

Not classified as dangerous goods for transport (research quantities).

14.4 Packing group

Not applicable (not regulated as dangerous goods in typical research quantities).

14.5 Environmental hazards

Marine pollutant: No (not classified as environmentally hazardous per GHS).

14.6 Special precautions for user

Transport in original packaging. Ensure containers are tightly sealed.

For bulk or commercial quantities, consult applicable transport regulations (DOT, IATA, IMDG).

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

15. REGULATORY INFORMATION

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

US EPA / TSCA: Subject to EPA TSCA regulations

EU ECHA / REACH: Not available in public databases.

SARA 302 Components:

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

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:

Acute (short-term) health hazard

Massachusetts Right To Know Components:

This material contains components subject to the Massachusetts Right to Know Act. See Section 2 for hazard classification.

Pennsylvania Right To Know Components:

This material contains components subject to the Pennsylvania Right to Know Act. See Section 2 for hazard classification.

New Jersey Right To Know Components:

This material contains components subject to the New Jersey Right to Know Act. See Section 2 for hazard classification.

California Prop. 65 Components:

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

Other regulatory listings:

- The Australian Inventory of Industrial Chemicals: Chemical: 9-Octadecenoic acid, (Z)-
- EFSA Legal Basis: Council Directive (EEC) No 109/1989 (Repealed by Reg. EC No 1935/2004 (amended))
- Status Regulation (EC): 2008/127, Reg. (EU) 2017/195, Reg. (EU) 2020/1160, Reg. (EU) 2024/1280, Reg. (EU) 2024/2221, Reg. (EU) No 540/2011

- FIFRA Requirements: As the federal pesticide law FIFRA directs, EPA is conducting a comprehensive review of older pesticides to consider their health and environmental effects and make decisions about their future use. Under this pesticide reregistration program, EPA examines health and safety data for pesticide active
- FDA Requirements: Oleic acid is a food additive permitted for direct addition to food for human consumption, as long as 1) the quantity of the substance added to food does not exceed the amount reasonably required to accomplish its intended physical, nutritive, or other technical effect in food, and 2) any substance

15.2 Chemical safety assessment

A chemical safety assessment has not been carried out for this substance.

For research-use-only compounds, no CSA is required under REACH Annex I.

16. OTHER INFORMATION

Revision Date: 2026/09/09

Further Information: The information provided is believed to be correct but is not exhaustive and should be used only as a guideline based on current knowledge. It does not represent a guarantee of the properties of the product.

Selleck Chemicals Corporation and its Affiliates shall not be held liable for any damage resulting from handling or contact with the product.