Safety Data Sheet

According to the UN GHS revision 8

Creation Date: August 13, 2024
Revision Date: August 13, 2024

1. IDENTIFICATION

1.1 GHS Product identifier

Product name: Oleic acid

Catalog Number: T2O2668

CAS Number: 112-80-1

1.2 Other means of identification

Other names: -

1.3 Recommended use of the chemical and restrictions on use

Identified uses:

1.4 Supplier's details

Company: Targetmol Chemicals Inc.

Uses advised against: 36 Washington Street,Wellesley Hills, Massachusetts 02481 USA

Tel/Fax: (781) 999-4286

1.5 Emergency phone number

Emergency phone number: 781-999-4286

Service hours: Monday to Friday, 9am-5pm (Standard timezone:UTC/GMT -5hours).

2. HAZARD IDENTIFICATION

2.1 Classification of the substance or mixture

Not classified.

2.2 GHS label elements, including precautionary statements

Pictogram(s):

Signal word: No signal word

Hazard statement(s): none

Precautionary statement(s):

Prevention: none

Response: none

Storage: none

Disposal: none

2.3 Other hazards which do not resultin classification

no data available

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number
Oleic acid	-	112-80-1	204-007-1

4. FIRST-AID MEASURES

4.1 Description of necessary first-aid measures

General advice

no data available

If inhaled

Fresh air, rest.

Following skin contact

Rinse and then wash skin with water and soap.

Following eye contact

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

Following ingestion

Rinse mouth with water. Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a doctor or Poison Control Center immediately.

4.2 Most important symptoms/effects, acute and delayed

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR as necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. Organic acids and related compounds

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Industrial use of compound involves no known hazards. Ingestion causes mild irritation of mouth and stomach. Contact with eyes or skin causes mild irritation. (USCG, 1999)

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

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.

5.2 Specific hazards arising from the chemical

This chemical is combustible. (NTP, 1992)

5.3 Special protective actions for fire-fighters

Use water spray, powder, foam, carbon dioxide.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

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

6.2 Environmental precautions

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

6.3 Methods and materials for containment and cleaning up

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

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

NO open flames. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

7.2 Conditions for safe storage, including any incompatibilities

Separated from strong bases.Keep containers closed and store in cool and dark places.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Occupational Exposure limit values

no data available

Biological limit values

no data available

8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear safety spectacles.

Skin protection

Protective gloves.

Respiratory protection

Use local exhaust.

Thermal hazards

no data available

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Oleic acid is a colorless to pale yellow liquid with a mild odor. Floats on water. (USCG, 1999)
Color	Colorless or nearly colorless liq (above 5-7 deg C)
Odour	PECULIAR LARD-LIKE ODOR
Melting point/ freezing point	22°C(lit.)
Boilingpoint or initial boiling point and boiling range	194-195°C/1.2mmHg(lit.)
Flammability	Combustible.
Lower and upper explosion limit/flammability limit	no data available
Flash point	>113°C
Auto-ignition temperature	685° F (USCG, 1999)
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	25.6 cP at 30 deg C
Solubility	DMSO: 60 mg/mL (212.42 mM), 5% DMSO+95% Saline: 3 mg/mL (10.62 mM)
N-octanol-water partition coefficient	log Kow = 7.64

Vapour pressure	52 mm Hg (37 °C)
Density and/ or relative density	0.887g/mLat 25°C
Relative vapour density	1.03 (vs air)
Particle characteristics	no data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

The substance is a weak acid.

10.2 Chemical stability

On exposure to air, especially when impure, it oxidizes & acquires yellow to brown color & rancid odor

10.3 Possibility of hazardous reactions

CombustibleOLEIC ACID is a carboxylic acid. Carboxylic acids donate hydrogen ions if a base is present to accept them. They react in this way with all bases, both organic (for example, the amines) and inorganic. Their reactions with bases, called "neutralizations", are accompanied by the evolution of substantial amounts of heat. Neutralization between an acid and a base produces water plus a salt. Carboxylic acids with six or fewer carbon atoms are freely or moderately soluble in water; those with more than six carbons are slightly soluble in water. Soluble carboxylic acid dissociate to an extent in water to yield hydrogen ions. The pH of solutions of carboxylic acids is therefore less than 7.0. Many insoluble carboxylic acids react rapidly with aqueous solutions containing a chemical base and dissolve as the neutralization generates a soluble salt. Carboxylic acids in aqueous solution and liquid or molten carboxylic acids can react with active metals to form gaseous hydrogen and a metal salt. Such reactions occur in principle for solid carboxylic acids as well, but are slow if the solid acid remains dry. Even "insoluble" carboxylic acids may absorb enough water from the air and dissolve sufficiently in it to corrode or dissolve iron, steel, and aluminum parts and containers. Carboxylic acids, like other acids, react with cyanide salts to generate gaseous hydrogen cyanide. The reaction is slower for dry, solid carboxylic acids. Insoluble carboxylic acids react with solutions of cyanides to cause the release of gaseous hydrogen cyanide. Flammable and/or toxic gases and heat are generated by the reaction of carboxylic acids with diazo compounds, dithiocarbamates, isocyanates, mercaptans, nitrides, and sulfides. Carboxylic acids, especially in aqueous solution, also react with sulfites, nitrites, thiosulfates (to give H_2S and SO_3), dithionites (SO_2), to generate flammable and/or toxic gases and heat. Their reaction with carbonates and bicarbonates generates a harmless gas (carbon dioxide) but still heat. Like other organic compounds, carboxylic acids can be oxidized by strong oxidizing agents and reduced by strong reducing agents. These reactions generate heat. A wide variety of products is possible. Like other acids, carboxylic acids may initiate polymerization reactions; like other acids, they often catalyze (increase the rate of) chemical reactions.

10.4 Conditions to avoid

no data available

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 deg C. This is considered to be a potentially dangerous method.

10.6 Hazardous decomposition products

When heated to decomposition it emits acrid smoke and irritating fumes.

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral: LD50 Rat oral 74 g/kg
Inhalation: no data available
Dermal: no data available

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT-single exposure

The substance is mildly irritating to the eyes and skin.

STOT-repeated exposure

no data available

Aspiration hazard

Evaporation at 20°C is negligible; a nuisance-causing concentration of airborne particles can, however, be reached quickly on spraying.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish: LC50; Species: Pimephales promelas (Fathead minnow, juvenile 4-8 wk, length 1.1-3.1 cm); Conditions: freshwater, static, 18-22 deg C, dissolved oxygen < or =4.0 mg/L; Concentration: 1000000 ug/L for 1 hr
Toxicity to daphnia and other aquatic invertebrates: no data available
Toxicity to algae: no data available
Toxicity to microorganisms: no data available

12.2 Persistence and degradability

AEROBIC: A 47 and 52 theoretical %BOD for oleic acid (initial concn of 1,000 ppm) was measured over a period of 5 days in screening tests at 20 deg C using sewage inoculum(1). A biodegradation half-life of 0.66 days was measured for oleic acid at an initial concn of 100 ppm with an aerobic Warburg respirometer at 25 deg C using activated sludge inocula(2). In another screening study a first order rate constant was measured to be 0.12/hr for oleic acid (initial concn of 100 ppm) which corresponds to a biodegradation half-life of 0.2 days(3). Oleic acid at initial concns of 1, 10, 1, and 10 ppm exhibited 90, 24, 97, and 28 theoretical %BOD, respectively, over incubation periods of 5, 5, 10, and 10 days, respectively, in an aerobic screening study using sewage inoculum(4). A 68 theoretical %BOD (initial concn of 100 ppm) was measured over a period of 5 days in a screening test at 20 deg C using sewage inoculum(5). A 39 theoretical %BOD for oleic acid (initial concn not given) was measured over a period of 5 days in a screening test at 20 deg C using sewage inoculum(6). After a 16 day acclimation time, a 63.5 theoretical %BOD was measured for oleic acid (initial concn not given) over a period of 5 days in a screening test at 20 deg C using activated sludge inocula(7). A 57.2 theoretical %BOD was measured for oleic acid (initial concn of 500 ppm) over a period of 5 days in an aerobic screening test at 20 deg C using activated sludge inoculum(8).

12.3 Bioaccumulative potential

An estimated BCF of 10 was calculated in fish for oleic acid(SRC), using a log Kow of 7.64(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

12.4 Mobility in soil

The Koc of undissociated oleic acid is estimated as 340,000(SRC), using a log Kow of 7.64(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that oleic acid is expected to be immobile in soil. The pKa of oleic acid is 5.02(4), indicating that this compound will exist almost entirely in anion form in the environment and anions generally do not adsorb more strongly to soils containing organic carbon and clay than their neutral counterparts(5).

12.5 Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS

13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

14. TRANSPORT INFORMATION

14.1 UN Number

no data available

14.2 UN Proper Shipping Name

no data available

14.3 Transport hazard class(es)

no data available

14.4 Packing group, if applicable

no data available

14.5 Environmental hazards

no data available

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations specific for the product in question

European Inventory of Existing Commercial Chemical Substances (EINECS)	Listed.
EC Inventory	Listed.
United States Toxic Substances Control Act (TSCA) Inventory	Listed.
China Catalog of Hazardous chemicals 2015	Not Listed.
New Zealand Inventory of Chemicals (NZIoC)	Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	Listed.
Vietnam National Chemical Inventory	Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)	Listed.
Korea Existing Chemicals List (KECL)	Listed.

16. OTHER INFORMATION

Information on revision

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Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

References

IPCS - The International Chemical Safety Cards (ICSC), website: http://www.ilo.org/dyn/icsc/showcard.home
HSDB - Hazardous Substances Data Bank, website: https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm
IARC - International Agency for Research on Cancer, website: http://www.iarc.fr/
eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
CAMEO Chemicals, website: http://cameochemicals.noaa.gov/search/simple
ChemIDplus, website: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp
ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: http://www.phmsa.dot.gov/hazmat/library/erg
Germany GESTIS-database on hazard substance, website: http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp
ECHA - European Chemicals Agency, website: https://echa.europa.eu/

Other Information

The substance can be absorbed by ingestion, but no harmful effects have been found.
