

# SAFETY DATA SHEETS

According to the UN GHS revision 10

## 1: Identification

### 1.1 GHS Product identifier

Product name Oleic Acid

### 1.2 Other means of identification

Product number 112-80-1

Other names Oleic Acid

### 1.3 Recommended use of the chemical and restrictions on use

Identified uses Industrial and scientific research use.

Uses advised against no data available

### 1.4 Supplier's details

Company Zhongshan Greenrock Technology Co., Ltd.

Address No. 138, Jinsan Avenue, Sanjiao Town, Zhongshan City, Guangdong Province, China

Telephone +86-2087066781

### 1.5 Emergency phone number

Emergency phone number +86-2087066781

Service hours Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

## 2: Hazard identification

### 2.1 Emergency Overview

It is highly corrosive and can cause irreversible damage to the skin and eyes. If in contact, rinse immediately with plenty of water and seek medical help as soon as possible.

### 2.2 GHS Classification

Skin corrosion/irritation : Category 2

Serious eye damage/eye irritation : Category 2A

### 2.3 GHS label elements, including precautionary statements

**Pictogram(s)****Signal word**

Warning

**Hazard statement(s)**

H315 Causes skin irritation

H319 Causes serious eye irritation

**Precautionary statement(s)****Prevention**

P264 Wash hands [and ...] thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

P264+P265 Wash hands [and ...] thoroughly after handling. Do not touch eyes.

**Response**

P321 Specific treatment (see ... on this label).

P302+P352 IF ON SKIN, wash with plenty of water/...

P305+P351+P338 IF IN EYES, Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.

P332+P317 If skin irritation occurs, Get medical help.

P337+P317 If eye irritation persists, Get medical help.

P362+P364 Take off contaminated clothing and wash it before reuse.

**Storage**

no data available

**Disposal**

no data available

**2.4 Physical and chemical**

Acidic or alkaline substances that react with metals to produce flammable hydrogen. May cause violent exothermic reactions when in contact with other substances. At high concentrations, they have strong oxidizing or reducing properties.

**2.5 Health hazards**

Skin contact: May cause severe burns, tissue necrosis, and scarring. Eye contact: May cause corneal damage, vision loss, or even blindness. Inhalation of vapor or mist may cause respiratory burns and pulmonary edema.

**2.6 Environmental hazards**

Leakage into the environment can change the pH value of soil and water, causing serious ecological damage. It is highly toxic to aquatic organisms and can cause the death of aquatic organisms and the collapse of the ecosystem.

**2.7 Other hazards which do not result in classification**

no data available

### 3: Composition/information on ingredients

**3.1 Substances**

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
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Oleic Acid	Oleic Acid	112-80-1	291-733-7	99%
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## 4: First-aid measures

### 4.1 General advice

Stop contact immediately and remove contaminated clothing; rinse the exposed area with plenty of running water and seek medical attention immediately with the material's SDS. If the corrosive substance is acidic (such as sulfuric acid), neutralize it with a weak alkaline solution (such as 5% sodium bicarbonate) after rinsing. For alkaline corrosive substances (such as sodium hydroxide), neutralize them with a weak acidic solution (such as 1% acetic acid).

### 4.2 If inhaled

Move to fresh air and keep the airway open. If corrosive vapors (such as hydrochloric acid mist) are inhaled, immediately administer nebulized inhalation (normal saline + dexamethasone). If laryngeal edema or breathing difficulties occur, immediately perform a tracheotomy (requires professional operation) and seek medical attention.

### 4.3 In case of skin contact

Rinse with plenty of running water for 20-30 minutes (make sure to rinse thoroughly, especially between the fingers, in the armpits, and other folds). If blisters are present, do not prick them; instead, apply a sterile gauze compress (to avoid adhesion). Do not apply oily ointments to avoid affecting subsequent treatment.

### 4.4 In case of eye contact

Immediately flush with an eyewash or plenty of normal saline for 15-20 minutes (use a gentle flow to avoid direct exposure to the cornea); apply antibiotic eye ointment (such as erythromycin ointment) to the eyelids, wear a sterile eye patch, and seek immediate medical attention from an ophthalmologist.

### 4.5 If swallowed

Do not induce vomiting (to avoid secondary damage to the esophageal mucosa). If the substance is acidic, take milk or egg white orally (to protect the gastric mucosa). If the substance is alkaline, take diluted vinegar (1:10 ratio) orally. If you carry SDS, seek medical attention immediately for a gastroscopy.

### 4.6 Most important symptoms and effects, both acute and delayed

Acute symptoms: skin redness, swelling, blisters, ulcers, severe eye pain, photophobia, blurred vision, oral/esophageal burns, and difficulty swallowing; long-term effects: skin scarring, corneal scarring (possibly causing blindness), and esophageal stenosis.

### 4.7 Protection of first-aiders

Rescuers must wear corrosion-resistant chemical protective clothing, chemical protective gloves (made of fluororubber), chemical goggles and masks; stand upwind when flushing to avoid inhaling volatile corrosive gases; after contact, equipment must be cleaned with a neutralizer and then rinsed with clean water.

### 4.8 Notes to physician

Inform the doctor of the type of corrosive agent (acid/base), concentration, and duration of contact. Skin burns should be treated according to their depth (superficial II degree and above require skin grafting). Eye

injuries should be checked for corneal epithelial integrity and, if necessary, corneal repair drugs (such as recombinant human epidermal growth factor) should be used.

## **5: Fire-fighting measures**

### **5.1 Unsuitable extinguishing media**

Acidic corrosive substances (such as sulfuric acid): It is strictly forbidden to use water (it releases heat when in contact with water, causing splashing) or alkaline fire extinguishing agents (it neutralizes the heat and increases the risk); Alkaline corrosive substances (such as sodium hydroxide): It is strictly forbidden to use acidic fire extinguishing agents.

### **5.2 Specific hazards during fire fighting**

Combustion is accompanied by splashing of corrosive liquids, causing severe burns to the skin/eyes; some corrosive substances (such as nitric acid) release toxic gases when burned and also corrode fire-fighting equipment; high-temperature molten substances (such as molten alkali) easily adhere to the skin and cause deep burns.

### **5.3 Hazardous combustion products**

Acidic corrosive substances release hydrogen chloride and sulfur dioxide (such as sulfuric acid); alkaline corrosive substances release ammonia (such as ammonia water); chlorine-containing corrosive substances release chlorine gas.

### **5.4 Specific extinguishing methods**

Small area: Use dry powder fire extinguishing agent to put out the fire. If it is solid corrosive material, cover it with dry sand (to isolate it from the air); Large area: Cool the surrounding containers first, then use dry powder to put out the fire. It is strictly forbidden to use water directly to prevent splashing; After extinguishing the fire, use a neutralizer (weak base for acid, weak acid for alkali) to deal with the leaked material.

### **5.5 Special protective equipment for fire-fighters**

Wear fully enclosed corrosion-resistant chemical protective clothing, chemical protective gloves (fluororubber), chemical goggles + mask; carry a pH tester (to monitor the pH value of the leak); after the operation, the equipment needs to be cleaned with a neutralizer and then rinsed with clean water.

## **6: Accidental release measures**

### **6.1 Protective measures for workers**

Wear fully enclosed chemical protective clothing (acid and alkali resistant), chemical protective gloves (fluororubber), chemical goggles + face mask; wear a gas mask (acid/alkali filter box) when dealing with volatile corrosive substances.

### **6.2 Environmental protection measure**

Prevent leaked material from contacting skin or eyes; do not discharge into water or soil; treat contaminated ground with a neutralizer (sodium carbonate for acid, dilute acetic acid for alkali) until neutral.

### **6.3 Containment methods for leaked chemicals**

Collect liquids in sealed polyethylene containers; collect solids with corrosion-resistant tools and place them in chemical-resistant bags (marked "corrosive"); store them in isolation after collection.

### **6.4 Cleanup methods for chemical spills**

Small leakage: absorb with acid/alkali resistant cotton and then neutralize; Large leakage: transfer to storage tank with corrosion resistant pump; After cleaning, flush the ground with plenty of water (if compatible), and collect the flushing water for neutralization.

### **6.5 Measures to prevent the spread of leaks**

Designate an 8-meter isolation zone; use corrosion-resistant isolation belts for blocking; and enhance ventilation (corrosion-resistant fans) for volatile corrosive substances.

### **6.6 Container leakage treatment**

Minor leaks: seal with acid/alkali resistant putty; severe leaks: evacuate, have professionals transfer remaining substances, and do not reuse damaged containers.

### **6.7 Special considerations**

In case of skin contact, rinse with an eyewash for 15 minutes; in case of eye contact, rinse with an eyewash for 15 minutes and seek medical attention; add reagents slowly during neutralization (to prevent heat release); clean protective equipment with neutralizer and then rinse with clean water.

## **7: Handling and storage**

### **7.1 Safe storage conditions**

Store in a corrosion-resistant warehouse (the floor is epoxy resin coated, and the walls are acid/alkali-resistant tiles); the container is made of corrosion-resistant material (glass fiber reinforced plastic for acid corrosion, high-density polyethylene for alkaline corrosion), with a capacity of ?200L to prevent dumping; the warehouse is equipped with an emergency neutralization tank (volume ?5m<sup>3</sup>) and equipped with acid/alkali neutralizers (such as sodium carbonate, dilute acetic acid).

### **7.2 Storage precautions**

Store them separately from materials that may come into contact with the skin (such as clothing and gloves) to avoid cross contamination. Use a corrosion-resistant forklift to transport containers and avoid impact. Check the humidity in the warehouse daily (?65%) to prevent moisture from exacerbating corrosion. In case of leakage, immediately absorb it with inert materials (such as sand) and then treat it with a neutralizer.

### **7.3 VCI Storage Grade**

Level 2 (medium-high): Metal pipes and valves are coated with VCI anti-rust paint (acid/alkali resistant type) and maintained once every six months; VCI anti-rust blocks (such as urethane) are placed in the warehouse and replenished once every quarter to prevent corrosion of metal parts.

## 7.4 Recommended storage temperature

5-35?, avoid sudden temperature changes (such as moving directly from a low temperature environment to a high temperature environment); concentrated acids/bases must be kept at a temperature ?30? to prevent temperature increases from causing increased container pressure; in winter, they must be protected from freezing (temperature ?5?) to prevent the solution from freezing and cracking the container (if the label has a recommended storage temperature, follow the label).

## 7.5 Handling

For precautions see Safety Data Sheet section 2

Advice on safe handling : Work under hood. Do not inhale substance/mixture.

# 8: Exposure controls/personal protection

## 8.1 Respiratory protection

When exposed to corrosive vapors (such as hydrochloric acid mist and sulfuric acid mist), wear a powered air-purifying respirator (APF?50); in high-concentration environments, a positive pressure air respirator is required to avoid inhalation burns to the respiratory tract.

## 8.2 Recommended Filter type

For acidic corrosive substances, choose Type E filter cartridge (protects against acidic gases such as SO<sub>2</sub> and HCl); for alkaline corrosive substances, choose Type K filter cartridge (protects against ammonia and amines); if the product contains dust, add Type P2 filter cotton.

## 8.3 Eye/face protection

Wear chemical protective goggles + full-face mask. The mask must cover the chin. The lens should be made of polycarbonate (corrosion-resistant and impact-resistant). Check the sealing regularly.

## 8.4 Skin and body protection

Wear corrosion-resistant chemical protective clothing made of fluororubber or polytetrafluoroethylene (PTFE) to avoid direct skin contact; wear an apron (of the same material) with protection covering the chest to the knees.

## 8.5 Hand protection

Wear corrosion-resistant gloves. For acid corrosion, choose neoprene material; for alkaline corrosion, choose nitrile rubber material. The thickness of the gloves should be ?0.5mm. Perform a water leakage test before use.

## 8.6 Hygiene measures

Immediately after the operation, rinse the skin with running water for 10 minutes. If there is stinging at the contact site, apply a neutralizer (5% sodium bicarbonate for acid and 1% acetic acid for alkali) for 5 minutes. Do not use irritating skin care products to avoid aggravating skin damage.

## 9: Physical and chemical properties and safety characteristics

<b>Physical state</b>	colourless to light yellow viscous liquid
<b>Colour</b>	Colorless or nearly colorless liq (above 5-7°C)
<b>Odour</b>	PECULIAR LARD-LIKE ODOR
<b>Melting point/freezing point</b>	22°C(lit.)
<b>Boiling point or initial boiling point and boiling range</b>	194-195°C/1.2mmHg(lit.)
<b>Flammability</b>	Combustible.
<b>Lower and upper explosion limit/flammability limit</b>	no data available
<b>Flash point</b>	>113°C
<b>Auto-ignition temperature</b>	362.78°C (USCG, 1999)
<b>Decomposition temperature</b>	When heated to decomposition it emits acrid smoke and irritating fumes.
<b>pH</b>	no data available
<b>Kinematic viscosity</b>	25.6 cP at 30°C
<b>Solubility</b>	In water:negligible
<b>Partition coefficient n-octanol/water</b>	log Kow = 7.64
<b>Vapour pressure</b>	52 mm Hg ( 37 °C)
<b>Density and/or relative density</b>	0.887g/mL at 25°C
<b>Relative vapour density</b>	1.03 (vs air)
<b>Particle characteristics</b>	no data available

## 10: Stability and reactivity

### 10.1 Reactivity

no data available

### 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

Combustible OLEIC 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 acids 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<sub>2</sub>S and SO<sub>3</sub>), dithionites (SO<sub>2</sub>), 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°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

### 11.1 Acute toxicity

Oral: LD50 Rat oral 74 g/kg

Inhalation: no data available

Dermal: no data available

### 11.2 Skin corrosion/irritation

no data available

### **11.3 Serious eye damage/irritation**

no data available

### **11.4 Respiratory or skin sensitization**

no data available

### **11.5 Germ cell mutagenicity**

no data available

### **11.6 Carcinogenicity**

no data available

### **11.7 Reproductive toxicity**

no data available

### **11.8 STOT-single exposure**

no data available

### **11.9 STOT-repeated exposure**

no data available

### **11.10 Aspiration hazard**

no data available

## **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°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°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°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°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°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°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°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 for waste chemicals**

Acidic corrosives can be treated with alkaline neutralizers (such as sodium carbonate) until neutralized and then disposed of as ordinary waste. Alkaline corrosives can be treated with acidic neutralizers (such as dilute hydrochloric acid) until neutralized and then disposed of. Those that cannot be neutralized must be incinerated at high temperature or chemically decomposed by a professional unit. The container must be thoroughly cleaned before being disposed of.

### **13.2 Precautions**

Neutralization reactions must be conducted in well-ventilated, dedicated facilities, with the reaction rate controlled to prevent splashing. Disposal personnel must wear corrosion-resistant protective gear. The pH value of the neutralized waste must be controlled between 6 and 9. Direct disposal of unneutralized corrosive materials is prohibited. Emergency pools must be established at the disposal site to prevent leakage and contamination.

## **14: Transport information**

### **14.1 UN Number**

ADR/RID: Not dangerous goods. IMDG: Not dangerous goods. IATA: Not dangerous goods.

### **14.2 UN Proper Shipping Name**

ADR/RID: unknown

IMDG: unknown

IATA: unknown

### 14.3 Transport hazard class(es)

ADR/RID: Not dangerous goods. IMDG: Not dangerous goods.

IATA: Not dangerous goods.

### 14.4 Packing group, if applicable

ADR/RID: Not dangerous goods. IMDG: Not dangerous goods.

IATA: Not dangerous goods.

### 14.5 Environmental hazards

ADR/RID: no

IMDG: no

IATA: no

### 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

Chemical name	Common names and synonyms	CAS number	EC number
Oleic Acid	Oleic Acid	112-80-1	291-733-7
New Zealand Inventory of Chemicals (NZIoC)			Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)			Listed.
Vietnam National Chemical Inventory			Listed.
Australian Inventory of Industrial Chemicals (AIIC)			Not Listed.
Catalogue of Strictly Restricted Toxic Chemicals in China			Not Listed.
China Catalog of Hazardous chemicals 2015			Not Listed.
European INventory of Existing Commercial chemical Substances			Not Listed.
IARC Monographs on the Evaluation of Carcinogenic Risks to Humans			Not Listed.
TSCA Inventory of Chemical Substances			Listed.

## 16: Other information

#### Information on revision

SDS Creation Date July 1, 2025

SDS Revision Date July 1, 2025

#### Abbreviations and acronyms in SDS

- 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%

#### SDS 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](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/>

**Any questions regarding this Safety Data Sheet, Please send your inquiry to [sales@MolBest.com](mailto:sales@MolBest.com)**

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