SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.1
Creation Date: July 15, 2019
Revision Date: August 17, 2023

SECTION 1: Identification

1.1 GHS Product identifier

Product name 2-Ethylhexanoic Acid

1.2 Other means of identification

Product number 149-57-5
Other names Octanoic Acid; 2-ethyl-1-hexanoic acid; Hexanoic acid, 2-ethyl-

1.3 Recommended use of the chemical and restrictions on use

Identified uses For laboratory and Industrial use only.
Uses advised against no data available

1.4 Supplier's details

Company Zhongshan Greenrock Technology Co., Ltd.
Address 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).

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Reproductive toxicity, Category 2

2.2 GHS label elements, including precautionary statements

Pictogram(s)

Signal word Warning
Hazard statement(s) none
Precautionary statement(s)
Prevention P203 Obtain, read and follow all safety instructions before use.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...
Response P318 IF exposed or concerned, get medical advice.
Storage P405 Store locked up.
Disposal P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

2.3 Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
2-Ethylhexanoic Acid	2-ethylhexanoic acid	149-57-5	205-743-6	100%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Fresh air, rest.

Following skin contact

Remove contaminated clothes. Rinse skin with plenty of water or shower.

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. Give one or two glasses of water to drink. Refer for medical attention .

4.2 Most important symptoms/effects, acute and delayed

Harmful if swallowed, inhaled or absorbed through skin. Material is extremely destructive to tissues of mucous membranes and upper respiratory tract, eyes and skin. Inhalation may be fatal as a result of spasm, inflammation and edema of the larynx, bronchii, chemical pneumonitis and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. (USCG, 1999)

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

Call for medical aid. Vapor irritating to eyes, nose, and throat. If inhaled, will cause coughing or difficult breathing. If breathing stopped, give artificial respiration. If breathing is difficult, give oxygen. Liquid will burn skin and eyes. If swallowed will cause nausea and vomiting. Remove contaminated clothing and shoes. Flush affected areas with plenty of water. If in eyes, hold eyelids open, and flush with plenty of water.

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Combustible. Water may be ineffective on fire. Wear self-contained breathing apparatus and protective clothing. Extinguish with dry chemical, alcohol foam, or carbon dioxide.

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.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent. Do NOT absorb in saw-dust or other combustible absorbents. Then store and dispose of according to local regulations.

6.2 Environmental precautions

Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Do NOT let this chemical enter the environment. Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent. Do NOT absorb in saw-dust or other combustible absorbents. Then store and dispose of according to local regulations.

6.3 Methods and materials for containment and cleaning up

Collect leaking and spilled liquid in sealable containers as far as possible. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT absorb in saw-dust or other combustible absorbents. Do NOT let this chemical enter the environment.

SECTION 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 oxidants. Store in an area without drain or sewer access.Separated from strong oxidants. Store in an area without drain or sewer access.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

TLV: 5 mg/m3, as TWA

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 goggles.

Skin protection

Protective gloves.

Respiratory protection

Use local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state	Liquid.
Colour	Colourless, clear.
Odour	Mild odor
Melting point/freezing point	-57 °C.
Boiling point or initial boiling point and boiling range	226 - 229 °C. Atm. press.:1 013 hPa.
Flammability	Combustible.
Lower and upper explosion limit/flammability limit	Lower flammable limit: 0.8% by volume; Upper flammable limit: 6.0% by volume
Flash point	118 °C. Atm. press.:1 013.25 hPa.
Auto-ignition temperature	310 °C. Atm. press.:1 013.25 hPa.
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	dynamic viscosity (in mPa s) = 8.4. Temperature:20.3°C.;dynamic viscosity (in mPa s) = 4.2. Temperature:40°C.
Solubility	less than 1 mg/mL at 84° F (NTP, 1992)
Partition coefficient n-octanol/water	log Pow = 2.7. Temperature:25 °C.
Vapour pressure	0.04 hPa. Temperature:20 °C.
Density and/or relative density	906.7 kg/m³. Temperature:20 °C.
Relative vapour density	4.98 (vs air)
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

The substance is a strong reducing agent. It reacts violently with oxidants. Decomposes on heating. This produces irritating fumes.

10.2 Chemical stability

no data available

10.3 Possibility of hazardous reactions

ETHYLHEXOIC 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 H2S and SO3), dithionites (SO2), 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 substance is a strong reducing agent and reacts with oxidants.

10.6 Hazardous decomposition products

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

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 - rat (female) - 2 043 mg/kg bw.
- Inhalation: LC0 - rat (male/female) - 0.11 mg/L air (nominal).
- Dermal: LD50 - rat (male/female) - > 2 000 mg/kg bw.

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 irritating to the eyes, skin and respiratory tract.

STOT-repeated exposure

Animal tests show that this substance possibly causes toxicity to human reproduction or development.

Aspiration hazard

A harmful contamination of the air will be reached on evaporation of this substance at 20°C; on spraying or dispersing, however, much faster.

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: LC50 - Oryzias latipes - > 100 mg/L - 96 h.
- Toxicity to daphnia and other aquatic invertebrates: EC50 - Daphnia magna - 910 mg/L - 48 h.
- Toxicity to algae: EC50 - Desmodesmus subspicatus (previous name: Scenedesmus subspicatus) - 49.3 mg/L - 72 h.
- Toxicity to microorganisms: EC10 - Pseudomonas putida - 71.7 mg/L - 17 h.

12.2 Persistence and degradability

AEROBIC: Using an enrichment sediment consortium from the Pearl River, Guangzhou City, China and incubated using a shake-flask technique, 2-ethylhexanoic acid exhibited a biodegradation rate constant of 6.3X10-3 mmol/hr(1), corresponding to a half-life of approximately 5 days(SRC). Products included butanoic acid and ethanoic acid(1). A 4% decrease in the initial 2-ethylhexanoic acid concn of 5.1 mg/L was observed after 21 days incubation in an aerobic mixed bacterial culture obtained from trench leachate at a low-level radioactive waste disposal site in Maxey Flats, KY(2). A 50% decrease in the initial 2-ethylhexanoic acid concn of 59.5 mg/L was observed after 21 days incubation in an aerobic mixed bacterial culture obtained from trench leachate at a low-level radioactive waste disposal site in West Valley, NY(2). Decreases of 16 and 24% in the initial 2-ethylhexanoic acid concn of 67.8 mg/L were observed after 21 days incubation in an aerobic mixed bacterial culture and a nitrogen amended bacterial culture, respectively obtained from trench leachate at a low-level radioactive waste disposal site in West Valley, NY(2).

12.3 Bioaccumulative potential

An estimated BCF of 3 was calculated in fish for 2-ethylhexanoic acid(SRC), using a log Kow of 2.64(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 2-ethylhexanoic acid is estimated as 650(SRC), using a log Kow of 2.64(1)((1,SRC) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that 2-ethylhexanoic acid is expected to have low mobility in soil. The estimated pKa of 2-ethylhexanoic acid is 4.70(4), indicating that this compound will partially exist in the 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

SECTION 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.

SECTION 14: Transport information

14.1 UN Number

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

14.2 UN Proper Shipping Name

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

14.3 Transport hazard class(es)

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

14.4 Packing group, if applicable

ADR/RID: Not dangerous goods. (For reference only, please check.)

IMDG: Not dangerous goods. (For reference only, please check.)

IATA: Not dangerous goods. (For reference only, please check.)

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

SECTION 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
2-ethylhexanoic acid	2-ethylhexanoic acid	149-57-5	205-743-6
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.

SECTION 16: Other information

Information on revision

Creation Date	July 15, 2019
Revision Date	August 17, 2023

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/

Any questions regarding this SDS, Please send your inquiry to export@greenrockchem.com

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