Chemical Safety Data Sheet MSDS / SDS

Carboxylic acids, di-, C4-6 SDS

Revision Date:2024-04-25 Revision Number:1

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product identifier

Product name: Carboxylic acids, di-, C4-6

CAS: 68603-87-2

Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: For R&D use only. Not for medicinal, household or other use.

Uses advised against: none

Company Identification

Company: Chemicalbook.in

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SECTION 2: Hazards identification

Classification of the substance or mixture

Serious eye damage, Category 1

GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger

Hazard statement(s)

H318 Causes serious eye damage

Precautionary statement(s)

Prevention

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

Response

P305+P354+P338 IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P317 Get medical help.

Storage

none

Disposal

none

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

Substance

Chemical name: Carboxylic acids, di-, C4-6

Common names and synonyms: Carboxylic acids, di-, C4-6

CAS number:	68603-87-2
EC number:	271-678-5
Concentration:	100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Fresh air, rest. Half-upright position. Refer immediately for medical attention.

Following skin contact

Remove contaminated clothes. Rinse skin with plenty of water or shower for at least 15 minutes. Refer for medical attention .

Following eye contact

Rinse with plenty of water (remove contact lenses if easily possible). Refer immediately for medical attention.

Following ingestion

Rinse mouth. Do NOT induce vomiting. Refer immediately for medical attention.

Most important symptoms/effects, acute and delayed

As dust or as a solution, can cause severe burns of eyes, skin, or mucous membranes. Ingestion of 5 grams has caused death with symptoms of nausea, shock, collapse, and convulsions coming on rapidly. Repeated or prolonged skin exposure can cause dermatitis and slow-healing ulcers. (USCG, 1999)

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

Treatment should be rapidly instituted by giving a dilute solution of calcium lactate, lime water, finely pulverized chalk, plaster, and/or milk to supply large amounts of calcium to inactivate oxalate by forming an insoluble calcium salt in the stomach. Gastric lavage is controversial, since this may compound an already severe corrosive lesion in the esophagus or stomach. However, if used, gastric lavage should be done with limewater (calcium hydroxide). Intravenous gluconate or calcium chloride solutions should be given to prevent hypocalcemic tetany; in severe cases parathyroid extract also has been given. ... Additionally, acute renal failure should be anticipated, and careful fluid management is necessary. Oxalates

SECTION 5: Firefighting measures

Suitable extinguishing media

Use water spray, dry chem, "alc resistant" foam, or carbon dioxide. dust may be reduced with water spray. aqueous solution must be contained for disposal. use water to keep fire-exposed containers cool. water may cause foaming of molten material. oxalic acid dihydrate

Specific hazards arising from the chemical

Special Hazards of Combustion Products: Generates poisonous gases (USCG, 1999)

Special protective actions for fire-fighters

Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid breathing mist, gas or vapours.Avoid contacting with skin and eye. Use personal protective equipment.Wear chemical impermeable gloves. Ensure adequate ventilation.Remove all sources of ignition. Evacuate personnel to safe areas.Keep people away from and upwind of spill/leak.

Environmental precautions

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance, protective gloves and safety goggles. Sweep spilled substance into covered plastic containers. If appropriate, moisten first to prevent dusting. Wash away remainder with plenty of water.

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.

SECTION 7: Handling and storage

Precautions for safe handling

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.

Conditions for safe storage, including any incompatibilities

Separated from strong oxidants and food and feedstuffs. Dry. Well closed.STORE IN COOL, DRY, WELL-VENTILATED LOCATION. OXALIC ACID DIHYDRATE

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

Component	Carboxylic acids, di-, C4-6
CAS No.	68603-87-2
	Recommended Exposure Limit: 10 Hr Time-Weighted Avg: 1 mg/cu m. Recommended Exposure Limit: 15 Min Short-Term Exposure Limit: 2 mg/cu m.

Biological limit values

no data available

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.

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

Eye/face protection

Wear tightly fitting safety goggles with side-shields conforming to EN 166(EU) or NIOSH (US).

Skin protection

Wear fire/flame resistant and impervious clothing. Handle with gloves. Gloves must be inspected prior to use. Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Respiratory protection

If the exposure limits are exceeded, irritation or other symptoms are experienced, use a full-face respirator.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Oxalic acid is an odorless white solid. Sinks and mixes with water. (USCG, 1999)
Colour:	ANHYDROUS OXALIC ACID, CRYSTALLIZED FROM GLACIAL ACETIC ACID IS ORTHORHOMBIC, CRYSTALS BEING PYRAMIDAL OR ELONGATED OCTAHEDRA
Odour:	Odorless.
Melting point/freezing point:	189.5°C (dec.)(lit.)
Boiling point or initial boiling point and boiling range:	302.894°C at 760 mmHg
Flammability:	Combustible Solid
Lower and upper explosion limit/flammability limit:	no data available
Flash point:	151.212°C
Auto-ignition temperature:	Not flammable (USCG, 1999)
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	no data available
Solubility:	50 to 100 mg/mL at 75° F (NTP, 1992)
Partition coefficient n-octanol/water:	-0.81
Vapour pressure:	0.001 mm Hg at 68° F (NTP, 1992)

Density and/or relative density:	0.99 g/mL at 25°C
Relative vapour density:	4.3 (NTP, 1992) (Relative to Air)
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

Decomposes on contact with hot surfaces or flames. This produces formic acid and carbon monoxide. The solution in water is a medium strong acid. Reacts violently with strong oxidants. This generates fire and explosion hazard. Reacts with some silver compounds. This produces explosive silver oxalate. Attacks some forms of plastic.

Chemical stability

Oxalic acid can be dehydrated by careful drying @ 100 deg c, but losses occur through sublimation oxalic acid dihydrate

Possibility of hazardous reactions

OXALIC ACID is hygroscopic and sensitive to heat. This compound may react violently with furfuryl alcohol, silver, sodium, perchlorate, sodium hypochlorite, strong oxidizers, sodium chlorite, acid chlorides, metals and alkali metals. (NTP, 1992). The heating of mixtures of Oxalic acid and urea has lead to explosions. This is due to the rapid generation of the gases CO2, CO, and NH3 [Praxis Naturwiss. Chem., 1987, 36(8), 41-42]. Oxalic acid and urea react at high temperatures to form toxic and flammable ammonia and carbon monoxide gases, and inert CO2 gas [Von Bentzinger, R. et al., Praxis Naturwiss. Chem., 1987, 36(8), 41-42].

Conditions to avoid

no data available

Incompatible materials

Reacts with strong alkalies, strong oxidizing materials, chlorites, and hypochlorites. Oxalic acid dihydrate

Hazardous decomposition products

Decomp products incl carbon monoxide & formic acid.

SECTION 11: Toxicological information

Acute toxicity

Oral: LDLo Dog oral 1000 mg/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

no data available

STOT-repeated exposure

no data available

Aspiration hazard

no data available

SECTION 12: Ecological information

Toxicity

Toxicity to fish: no data available

Toxicity to daphnia and other aquatic invertebrates: no data available

Toxicity to algae: no data available

Toxicity to microorganisms: no data available

Persistence and degradability

Six tests at oxalic acid initial concns of 3.3 to 10 ppm exhibited 75 to 202 %BODT over an incubation period of 5 days in an aerobic screening study using sewage inoculum(1). A 78 and 55.5 %BODT for oxalic acid was measured under aerobic conditions over a period of 5 days in screening tests at 20 deg C using sewage inoculum(2). Oxalic acid at initial concns of 0.00375, 0.0375, and 0.375 ppm exhibited 95, 99, and 100% degradation, respectively, in an aerobic screening study at 25 deg C using sewage inoculum(3). In another screening study using sewage inoculum, 68 and 64 %BODT were measured for oxalic acid at initial concns of 10 and 20 ppm, respectively, over a 5 day incubation period(4). An 89 %BODT was measured for oxalic acid (10 ppm initial concn) in an aerobic screening study using sewage inoculum at 19.5-20.5 deg C over an incubation period of 5 days(5).

Bioaccumulative potential

Based on an average experimental water solubility of 220,000 mg/L at 25 deg C(1) and a regression derived equation(2), the BCF for oxalic acid can be estimated to be approximately 0.6(SRC) and therefore should not be expected to bioconcentrate in aquatic organisms(SRC).

Mobility in soil

Based on an average experimental water solubility of 220,000 mg/L at 25 deg C(1) and a regression derived equation(2), the Koc for undissociated oxalic acid can be estimated to be approximately 5. This Koc value indicates that oxalic acid will have very high mobility in soil(3); therefore, adsorption to soil and sediment may not be an important fate process. Based on pKa1 and pKa2 values of 1.25 and 4.28(4) respectively, oxalic acid will exist primarily as the oxalate ion under environmental conditions (pH 5-9). No experimental data are available to determine whether the oxalate ion will adsorb to sediment or soil more strongly than its estimated Koc value indicates(SRC).

Other adverse effects

no data available

SECTION 13: Disposal considerations

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

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.)

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.)

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.)

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.)

Environmental hazards

ADR/RID: No
IMDG: No
IATA: No

Special precautions for user

no data available

Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

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.

(PICCS)

Listed.

Vietnam National Chemical Inventory

Listed.

IECSC)

Listed.

Korea Existing Chemicals List (KECL)

Listed.

SECTION 16: Other information

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/