

Chemical Safety Data Sheet MSDS / SDS

Cyanuric acid SDS

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

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

Product name: Cyanuric acid

CAS: 108-80-5

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**

Not classified.

GHS label elements, including precautionary statements

Signal word No signal word

Hazard statement(s)

none

Precautionary statement(s)**Prevention**

none

Response

none

Storage

none

Disposal

none

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients**Substance**

Chemical name: Cyanuric acid

Common names and
synonyms: Cyanuric acid

CAS number: 108-80-5

EC number: 203-618-0

Concentration: 100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Fresh air, rest.

Following skin contact

Rinse and then wash skin with water and soap.

Following eye contact

Rinse with plenty of water for several minutes (remove contact lenses if easily possible).

Following ingestion

Rinse mouth.

Most important symptoms/effects, acute and delayed

SYMPTOMS: Symptoms of exposure to this compound include, local irritation of the eyes. ACUTE/CHRONIC HAZARDS: Highly toxic. Hazardous decomposition products. (NTP, 1992)

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

Basic treatment: Establish a patent airway (oropharyngeal or nasopharyngeal airway, if needed). Suction if necessary. Watch for signs of respiratory insufficiency and assist respirations if necessary. Administer oxygen by nonrebreather mask at 10 to 15 L/min. Monitor for pulmonary edema and treat if necessary . Monitor for shock and treat if necessary . For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with 0.9% saline (NS) during transport . Do not use emetics. For ingestion, rinse mouth and administer 5 mL/kg up to 200 mL of water for dilution if the patient can swallow, has a strong gag reflex, and does not drool. Activated charcoal is not effective . Do not attempt to neutralize because of exothermic reaction. Cover skin burns with dry, sterile dressings after decontamination . Organic acids and related compounds

SECTION 5: Firefighting measures

Suitable extinguishing media

Water spray, alcohol resistant foam, powder, carbon dioxide.

Specific hazards arising from the chemical

Gives off irritating or toxic fumes (or gases) in a fire.

Special protective actions for fire-fighters

Use water spray, alcohol-resistant foam, powder, carbon dioxide. In case of fire: keep drums, etc., cool by spraying with water.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into covered containers. Carefully collect remainder. Then store and dispose of according to local regulations.

Environmental precautions

Personal protection: particulate filter respirator adapted to the airborne concentration of the substance. Sweep spilled substance into covered containers. Carefully collect remainder. Then store and dispose of according to local regulations.

Methods and materials for containment and cleaning up

Alkali and thermal treatment in filtration and precipitation was used to remove cyanuric acid from wastewaters.

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

Dry. Well closed. Separated from chlorine. Cyanuric acid should be stored in a dry place. Silos and pneumatic conveyors should be grounded to prevent electrostatic discharges.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

no data available

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 safety spectacles.

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:	Solid. Powder.
Colour:	White.
Odour:	Odorless
Melting point/freezing point:	320 - 375 °C.

Boiling point or initial boiling point and boiling range:	318°C(lit.)
Flammability:	Gives off irritating or toxic fumes (or gases) in a fire.
Lower and upper explosion limit/flammability limit:	no data available
Flash point:	74°C(lit.)
Auto-ignition temperature:	no data available
Decomposition temperature:	320-360°C
pH:	pH of saturated aqueous solution @ room temperature = 4.8
Kinematic viscosity:	no data available
Solubility:	0.5 mL (NTP, 1992)
Partition coefficient n-octanol/water:	log Pow = -1.31. Temperature:25 °C. Remarks:PH not reported.
Vapour pressure:	0mmHg at 25°C
Density and/or relative density:	1.78. Temperature:23 °C.
Relative vapour density:	no data available
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

Decomposes at >320°C. This produces toxic fumes including nitrogen oxides and isocyanic acid. Reacts with chlorine. This

generates explosion hazard.

Chemical stability

no data available

Possibility of hazardous reactions

An amide and amine. Organic amides/imides react with azo and diazo compounds to generate toxic gases. Flammable gases are formed by the reaction of organic amides/imides with strong reducing agents. Amides are very weak bases (weaker than water). Imides are less basic yet and in fact react with strong bases to form salts. That is, they can react as acids. Mixing amides with dehydrating agents such as P2O5 or SOCl2 generates the corresponding nitrile. The combustion of these compounds generate mixed oxides of nitrogen (NOx)

Conditions to avoid

no data available

Incompatible materials

Reacts with chlorine causing explosion hazard.

Hazardous decomposition products

The substance decomposes on heating above 320-350 deg C producing (highly) toxic fumes including nitrogen oxides and cyanic acid.

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 - rat (male/female) - > 5 000 mg/kg bw.

Inhalation: no data available

Dermal: LD50 - rabbit (male/female) - > 5 000 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 mildly irritating to the eyes.

STOT-repeated exposure

no data available

Aspiration hazard

A harmful concentration of airborne particles can be reached quickly when dispersed, especially if powdered.

SECTION 12: Ecological information**Toxicity**

Toxicity to fish: LC50 - *Lepomis macrochirus* - > 1 000 mg/L - 96 h.

Toxicity to daphnia and other aquatic invertebrates: LC50 - *Daphnia magna* - > 1 000 mg/L - 48 h.

Toxicity to algae: EbC50 - *Navicula pelliculosa* - 2 700 mg/L - 72 h.

Toxicity to microorganisms: EC50 - activated sludge of a predominantly domestic sewage - > 4 500 mg/L - 3 h. Remarks: Respiration rate.

Persistence and degradability

AEROBIC: A study using a Warburg respirometer with acclimated sewage sludge and 100 mg cyanuric acid found that cyanuric acid was inhibitory to biodegradation(1). Another study using COD, TOC, and UV with activated sludge found no degradation with cyanuric acid even with acclimated sludge(2). Cyanuric acid completely degraded in a study using s-triazine herbicide production wastes, HPLC and mixed (aerobic and anaerobic) bacteria cultures(4). Biodegradation of cyanuric acid by aerated activated sludge ranges from 14% at 8.7 mg/L DO and 5 hours, to 100% at 2.5 mg/L DO and 10 hours(5). After 16 days, 87% of labeled cyanuric acid had evolved as $^{14}\text{CO}_2$ and after 192 days, the percentage had increased to 99% in grab samples of aerobic soils (cyanuric acid concN 2.5 ppm)(3). In grab samples of saturated soil, 83% of labeled cyanuric acid had evolved as $^{14}\text{CO}_2$ after 66 days, and after 375 days, the percentage increased to 99% (cyanuric acid concN 2.5 ppm)(3).

Bioaccumulative potential

BCF values of <0.1 and <0.5 were derived for cyanuric acid at concentrations of 10 and 1 mg/L, respectively, and using orange-red killifish (*Oryzias latipes*) which were exposed over an 6-week period(1). According to a classification scheme(2), this BCF range suggests bioconcentration in aquatic organisms is low(SRC).

Mobility in soil

The Koc of cyanuric acid is estimated as 58(SRC), using a water solubility of 2,593 mg/L(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that cyanuric acid is expected to have high mobility in soil. The pKa of cyanuric acid is 6.88(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).

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/>

Other Information

Ingestion in large amounts may cause effects on the kidneys. This may result in tissue lesions.

Disclaimer: The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. We as supplier shall not be held liable for any