Chemical Safety Data Sheet MSDS / SDS

Calcium cyanide 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: Calcium cyanide

CAS: 592-01-8

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

Address: 5 vasavi Layout Basaveswara Nilayam Pragathi Nagar Hyderabad, India -500090

Telephone: +91 9550333722

SECTION 2: Hazards identification

Classification of the substance or mixture

Acute toxicity - Category 2, Oral
Hazardous to the aquatic environment, short-term (Acute) - Category Acute 1

Hazardous to the aquatic environment, long-term (Chronic) - Category Chronic 1

GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger

Hazard statement(s)

H300 Fatal if swallowed
H410 Very toxic to aquatic life with long lasting effects

Precautionary statement(s)

Prevention

P264 Wash ... thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.

Response

P301+P316 IF SWALLOWED: Get emergency medical help immediately.
P321 Specific treatment (see ... on this label).
P330 Rinse mouth.
P391 Collect spillage.

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.

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

Substance

Chemical name:	Calcium cyanide
Common names and synonyms:	Calcium cyanide
CAS number:	592-01-8
EC number:	209-740-0
Concentration:	100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

Fresh air, rest. Fresh air, rest. Artificial respiration may be needed. Refer for medical attention. See Notes.

Following skin contact

Remove contaminated clothes. Rinse and then wash skin with water and soap. Refer for medical attention . Wear protective gloves when administering first aid. See Notes.

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. Induce vomiting (ONLY IN CONSCIOUS PERSONS!). Refer for medical attention . See Notes.

Most important symptoms/effects, acute and delayed

Inhalation or ingestion causes headache, nausea, vomiting and weakness; high concentrations are rapidly fatal. (USCG, 1999)

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

SRP: For patients treated with nitrites: / Measurement of methemoglobin may be useful for assessing exposure. However, methemoglobin levels may be artificially low if not analyzed within a few hours after drawing the blood. Methemoglobin levels have been found to correlate with clinical symptoms in most cases. Cyanide

SECTION 5: Firefighting measures

Suitable extinguishing media

Use powder, dry sand. NO hydrous agents. NO water. NO carbon dioxide.

Specific hazards arising from the chemical

Special Hazards of Combustion Products: Decomposes in fire to give very toxic gases, including hydrogen cyanide. (USCG, 1999)

Special protective actions for fire-fighters

Use powder, dry sand. NO hydrous agents. NO water. NO carbon dioxide.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Evacuate danger area! Consult an expert! Personal protection: chemical protection suit including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Do NOT wash away into sewer. Sweep spilled substance into covered containers. Carefully collect remainder. Then store and dispose of according to local regulations. Prevent contact with water or moist substances.

Environmental precautions

Evacuate danger area! Consult an expert! Personal protection: chemical protection suit including self-contained breathing apparatus. Do NOT let this chemical enter the environment. Do NOT wash away into sewer. Sweep spilled substance into covered containers. Carefully collect remainder. Then store and dispose of according to local regulations. Prevent contact with water or moist substances.

Methods and materials for containment and cleaning up

Environmental considerations - Water spill: Add dilute caustic soda. Add calcium hypochlorite. Adjust pH to neutral (pH= 7). Calcium cyanide, solid

SECTION 7: Handling and storage

Precautions for safe handling

NO open flames, NO sparks and NO smoking. NO contact with water, carbon dioxide or acids. NO contact with hot surfaces. 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

Fireproof. Provision to contain effluent from fire extinguishing. Separated from strong oxidants, acids and food and feedstuffs. Dry. Well closed.Store in cool, dry, well-ventilated location. Separate from acids, oxidizing materials.

SECTION 8: Exposure controls/personal protection

Control parameters

Occupational Exposure limit values

TLV: (ceiling value): 5 mg/m3 as STEL; (skin).MAK: (as CN): 2 mg/m3; peak limitation category: II(1); skin absorption (H); pregnancy risk group: C

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, face shield or eye protection in combination with breathing protection if powder.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state:	Calcium cyanide is a white crystals or powder or gray-black powder (technical grade). Toxic by skin absorption through open wounds, by ingestion, and by inhalation.
Colour:	Colorless crystals or white powder
Odour:	Odor of hydrogen cyanide
Melting point/freezing point:	640°C
Boiling point or initial boiling point and boiling range:	25.7°C at 760 mmHg
Flammability:	Not combustible but forms flammable gas on contact with water or damp air. Gives off irritating or toxic fumes (or gases) in a fire.
Lower and upper explosion limit/flammability limit:	no data available
Flash point:	>110°C
Auto-ignition temperature:	no data available
Decomposition temperature:	at >350°C°C
pH:	no data available
Kinematic viscosity:	no data available
Solubility:	Soluble in water with gradual liberation of HCN

Partition coefficient n-octanol/water:	no data available
Vapour pressure:	740mmHg at 25°C
Density and/or relative density:	1.4014
Relative vapour density:	no data available
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

Decomposes above 350°C . This produces toxic fumes including nitrogen oxides and hydrogen cyanide. Reacts violently with water, moist air, carbon dioxide, acids and acid salts. This produces highly toxic and flammable hydrogen cyanide. Reacts violently with oxidizing substances when heated. This generates fire and explosion hazard.

Chemical stability

no data available

Possibility of hazardous reactions

Not flammableCALCIUM CYANIDE gives weakly acidic solutions. Contact with acids causes rapid evolution of hydrogen cyanide. Incompatible with isocyanates, nitrides, and peroxides. May react rapidly with oxidizing agents.

Conditions to avoid

no data available

Incompatible materials

Reacts with water and acids evolving highly toxic hydrogen cyanide.

Hazardous decomposition products

Calcium cyanide is/ ... readily hydrolyzed liberating hydrogen cyanide.

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 Rat oral 22 mg CN-/kg as calcium cyanide

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 irritating to the eyes, skin and respiratory tract. The substance may cause effects on the intracellular oxygen metabolism. This may result in seizures and unconsciousness. Exposure could cause death.

STOT-repeated exposure

Repeated or prolonged contact with skin may cause dermatitis. Repeated or prolonged contact with skin may cause dermatitis.

Aspiration hazard

Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly when dispersed.

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

no data available

Bioaccumulative potential

no data available

Mobility in soil

no data available

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: UN1575 (For reference only, please check.)
IMDG: UN1575 (For reference only, please check.)
IATA: UN1575 (For reference only, please check.)

UN Proper Shipping Name

ADR/RID: CALCIUM CYANIDE (For reference only, please check.)
IMDG: CALCIUM CYANIDE (For reference only, please check.)
IATA: CALCIUM CYANIDE (For reference only, please check.)

Transport hazard class(es)

ADR/RID: 6.1 (For reference only, please check.)
IMDG: 6.1 (For reference only, please check.)
IATA: 6.1 (For reference only, please check.)

Packing group, if applicable

ADR/RID: I (For reference only, please check.)
IMDG: I (For reference only, please check.)
IATA: I (For reference only, please check.)

Environmental hazards

ADR/RID: Yes
IMDG: Yes
IATA: Yes

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

Listed.

New Zealand Inventory of Chemicals (NZIoC)

Not Listed.

(PICCS)

Listed.

Vietnam National Chemical Inventory

Not Listed.

IECSC)

Not Listed.

Korea Existing Chemicals List (KECL)

Not 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

Depending on the degree of exposure, periodic medical examination is suggested. Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available. There is no odour warning even when toxic concentrations are present. Do NOT take working clothes home.