Chemical Safety Data Sheet MSDS / SDS

Calcium acetylide 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 acetylide

CAS: 75-20-7

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

Substances and mixtures, which in contact with water, emit flammable gases, Category 1

GHS label elements, including precautionary statements

Pictogram(s)

Signal word Danger

Hazard statement(s)

H260 In contact with water releases flammable gases which may ignite spontaneously

Precautionary statement(s)

Prevention

P223 Do not allow contact with water.
P231+P232 Handle and store contents under inert gas/....Protect from moisture.
P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

Response

P302+P335+P334 IF ON SKIN: Brush off loose particles from skin. Immerse in cool water [or wrap in wet bandages].
P370+P378 In case of fire: Use ... to extinguish.

Storage

P402+P404 Store in a dry place. Store in a closed container.

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 acetylide

Common names and synonyms:	Calcium acetylide
CAS number:	75-20-7
EC number:	200-848-3
Concentration:	100%

SECTION 4: First aid measures

Description of necessary first-aid measures

If inhaled

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

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. Do NOT induce vomiting. Refer for medical attention . See Notes.

Most important symptoms/effects, acute and delayed

Eye and skin irritation (USCG, 1999)

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

If particles of calcium carbide are removed promptly /from eye/, healing may be rapid.

SECTION 5: Firefighting measures

Suitable extinguishing media

If material on fire or involved in fire: Do not use water. Use graphite, soda ash, powdered sodium chloride, or suitable dry powder. Carbon dioxide may be ineffective.

Specific hazards arising from the chemical

Behavior in Fire: If wet by water, highly flammable acetylene gas is formed. (USCG, 1999)

Special protective actions for fire-fighters

Use special powder, dry sand. NO other agents. In case of fire: keep drums, etc., cool by spraying with water. NO direct contact with water.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Remove all ignition sources. Sweep spilled substance into covered clean, dry containers. Carefully collect remainder. Then store and dispose of according to local regulations. Do NOT use water.

Environmental precautions

Remove all ignition sources. Sweep spilled substance into covered clean, dry containers. Carefully collect remainder. Then store and dispose of according to local regulations. Do NOT use water.

Methods and materials for containment and cleaning up

Keep water away from release. Shovel into suitable dry container.

SECTION 7: Handling and storage

Precautions for safe handling

NO contact with water. Use non-sparking handtools. Closed system, dust explosion-proof electrical equipment and lighting. Prevent deposition of dust. 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 incompatible materials. See Chemical Dangers. Dry. Well closed.Store in a cool dry, well ventilated location. Separate from oxidizing materials, water. Immediately remove and properly dispose of any spilled material.

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 goggles 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:	Grayish-black irregular lump solid. Used to make acetylene and in steel manufacture.
Colour:	Grayish-black, irregular lumps or orthorhombic crystals
Odour:	Garlic-like

Melting point/freezing point:	447°C
Boiling point or initial boiling point and boiling range:	2300°C
Flammability:	Not combustible but forms flammable gas on contact with water or damp air. Many reactions may cause fire or explosion.
Lower and upper explosion limit/flammability limit:	no data available
Flash point:	no data available
Auto-ignition temperature:	Not flammable (USCG, 1999)
Decomposition temperature:	no data available
pH:	no data available
Kinematic viscosity:	At 1900 deg C, Mpa.s: 6000 (50% CaC2); 1700 (87% CaC2)
Solubility:	Reacts with water
Partition coefficient n-octanol/water:	no data available
Vapour pressure:	no data available
Density and/or relative density:	2.22g/mLat 25°C(lit.)
Relative vapour density:	no data available
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

Mixtures with silver nitrate and copper salts are shock-sensitive. Decomposes violently on contact with moisture or water. This produces highly flammable and explosive acetylene gas (ICSC 0089). This generates fire and explosion hazard. Reacts with chlorine, bromine, iodine, hydrogen chloride, lead, fluoride magnesium, sodium peroxide and sulfur. This generates fire and explosion hazard. Mixtures with iron (III) chloride, iron (III) oxide and tin (II) chloride ignite easily and burn fiercely.

Chemical stability

no data available

Possibility of hazardous reactions

Not combustible but forms flammable gas on contact with water or damp air. Many reactions may cause fire or explosion.CALCIUM CARBIDE is a reducing agent. May react vigorously with oxidizing materials. The powdered mixture of the acetylide and iron oxide and iron chloride burns violently upon ignition, producing molten iron. Calcium carbide incandesces with chlorine, bromine, or iodine at 245, 350, or 305°C., respectively, [Mellor, 1946, Vol. 5, 862]. The carbide burns incandescently when mixed and heated with lead difluoride, magnesium, hydrogen chloride, and tin (II) chloride, [Mellor, 1946, 1940, 1946, and 1941], respectively. Interaction of calcium carbide with methanol to give calcium methoxide is vigorous , but subject to an induction period of variable length. Once reaction starts, evolution of acetylene gas is very rapid, unpublished observations [Bretherick 1995]. Mixing calcium carbide with silver nitrate solutions forms silver acetylide, a highly sensitive explosive. Copper salt solutions would behave similarly, [Photogr. Sci. Eng., 1966, 10, 334]. The mixture of calcium carbide and sodium peroxide is explosive, as is calcium carbide and perchloryl fluoride as gases at 100-300°C.

Conditions to avoid

no data available

Incompatible materials

Forms flammable and explosive gas and corrosive solid with moisture.

Hazardous decomposition products

Decomposes in water with formation of acetylene and calcium hydroxide and evolution of heat.

SECTION 11: Toxicological information

Acute toxicity

Oral: no data available

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 corrosive to the eyes, skin and respiratory tract. Inhalation may cause lung oedema, but only after initial corrosive effects on eyes and/or airways have become manifest. See Notes.

STOT-repeated exposure

no data available

Aspiration hazard

A nuisance-causing concentration of airborne particles can 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: UN1402 (For reference only, please check.)
IMDG: UN1402 (For reference only, please check.)
IATA: UN1402 (For reference only, please check.)

UN Proper Shipping Name

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

Transport hazard class(es)

ADR/RID: 4.3 (For reference only, please check.)
IMDG: 4.3 (For reference only, please check.)
IATA: 4.3 (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: 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

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

Reacts violently with fire extinguishing agents such as water, producing explosive gas.The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort.Rest and medical observation are

therefore essential. See ICSC 0089.