

SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.1
Creation Date: July 15, 2019
Revision Date: May 31, 2024

SECTION 1: Identification

1.1 GHS Product identifier

Product name Calcium

1.2 Other means of identification

Product number LINS001350

Other names activated calcium powder;Calcium;3h-phenoxazine,actinomycindderiv.

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 CATO Research Chemicals Inc.

Address 3/F,Building B,No.179 BASIGO, Guangpu Rd East,Huangpu Dist,Guangzhou

Telephone +86-20-81960175

1.5 Emergency phone number

Emergency phone number +86-20-81960175

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

Substances and mixtures, which in contact with water, emit flammable gases, Category 2

2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word Danger

Hazard statement(s) H261 In contact with water releases flammable gas

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.

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
Calcium	Calcium	7440-70-2	231-179-5	100%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Fresh air, rest. Refer immediately for medical attention.

Following skin contact

Rinse contaminated clothes (fire hazard) with plenty of water. Rinse skin with plenty of water or shower. Refer immediately for medical attention.

Following eye contact

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

Following ingestion

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

4.2 Most important symptoms/effects, acute and delayed

Contact with eyes or skin produces caustic burns. (USCG, 1999)

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

Basic treatment: Establish a patent airway. Suction if necessary. Watch for signs of respiratory insufficiency and assist ventilations 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. Anticipate seizures and treat if necessary. For eye contamination, flush eyes immediately with water. Irrigate each eye continuously with normal saline 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. If product was ingested, protect yourself from contact with vomitus, since it may cause burns. Flammable solids

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Use approved Class D extinguishers or smother with dry sand, dry clay, or dry ground limestone. DO NOT use carbon dioxide or halogenated extinguishing agents. DO NOT use water. Violent reaction may result.

5.2 Specific hazards arising from the chemical

Excerpt from ERG Guide 138 [Substances - Water-Reactive (Emitting Flammable Gases)]: Produce flammable gases on contact with water. May ignite on contact with water or moist air. Some react vigorously or explosively on contact with water. May be ignited by heat, sparks or flames. May re-ignite after fire is extinguished. Some are transported in highly flammable liquids. Runoff may create fire or explosion hazard. (ERG, 2016)

5.3 Special protective actions for fire-fighters

NO water. 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

6.1 Personal precautions, protective equipment and emergency procedures

Personal protection: complete protective clothing including self-contained breathing apparatus. Consult an expert! Remove all ignition sources. Cover the spilled material with dry sand or dry powder. Do NOT absorb in saw-dust or other combustible absorbents. Carefully collect remainder. Then store and dispose of according to local regulations.

6.2 Environmental precautions

Personal protection: complete protective clothing including self-contained breathing apparatus. Consult an expert! Remove all ignition sources. Cover the spilled material with dry sand or dry powder. Do NOT absorb in saw-dust or other combustible absorbents. Carefully collect remainder. Then store and dispose of according to local regulations.

6.3 Methods and materials for containment and cleaning up

Collect and arrange disposal. Keep the chemical in suitable and closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

NO contact with air, water or incompatible substances. PREVENT DISPERSION OF DUST. Use non-sparking handtools. 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

Fireproof. Dry. Well closed. Keep under inert gas. Separated from incompatible materials. See Chemical Dangers. Store in a cool, dry, well-ventilated location. Separate from water, alcohols, acids, and halogens. Immediately remove and properly dispose of any spilled material.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

no data available

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 or face shield.

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	Solid. Powder.
Colour	White.
Odour	no data available
Melting point/freezing point	825 °C. Remarks: Calcium carbonate (aragonite).; 1 330 °C. Remarks: Calcium carbonate (calcite).
Boiling point or initial boiling point and boiling range	1 484 °C. Atm. press.: 1 atm.
Flammability	Forms flammable gas on contact with water or damp air. May ignite spontaneously on contact with air.
Lower and upper explosion limit/flammability limit	no data available
Flash point	no data available
Auto-ignition temperature	Remarks: No numerical value for self-ignition temperature is given. The handbook makes mention of ignition with air when finely divided. Long-term industrial experience in handling shows that this property is strongly related to the particle size.
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	no data available
Solubility	Insoluble in benzene; reacts with water
Partition coefficient n-octanol/water	no data available
Vapour pressure	1 Pa. Temperature: 591 °C.; 10 Pa. Temperature: 683 °C.; 100 Pa. Temperature: 798 °C.
Density and/or relative density	2.93 g/cm ³ . Temperature: 20 °C.; 2.71 g/cm ³ . Temperature: 20 °C.
Relative vapour density	no data available
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

The substance is a strong reducing agent. Reacts with moisture, water, alcohols, halogens and many other substances. This produces flammable/explosive gas (hydrogen - see ICSC 0001).

10.2 Chemical stability

no data available

10.3 Possibility of hazardous reactions

Flammable when finely divided. Ignites in air when finely divided. Boron trifluoride reacts with incandescence when heated with alkali metals or alkaline earth metals except magnesium [Merck 11th ed. 1989]. Calcium reacts violently with acids [Lab. Govt. Chemist 1965]. Finely divided calcium burns spontaneously in chlorine at elevated temperatures [Mellor 3:637, 638, 651 1946-47]. Finely divided or

massive calcium burns spontaneously in fluorine at ordinary temperatures. It is incompatible with metal oxides, alkali metal hydroxides, chlorine fluorides, dinitrogen tetraoxide, and sulfur (with sulfur reacts explosively when ignited) [Bretherick, 5th Ed., 1995].

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Calcium reacts violently with acids.

10.6 Hazardous decomposition products

Combustion may produce irritants and toxic gases.

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 - rat (female) - > 2 000 mg/kg bw. Remarks: Nominal effect, any adverse effect were not seen.
- Inhalation: LC50 - rat (male/female) - > 3 mg/L air (analytical).
- 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 severely irritating to the eyes, skin and respiratory tract.

STOT-repeated exposure

Repeated or prolonged contact with skin may cause dermatitis.

Aspiration hazard

A harmful concentration of airborne particles can be reached quickly when dispersed.

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: LC50 - *Oncorhynchus mykiss* (previous name: *Salmo gairdneri*) - > 100 % v/v saturated solution - 96 h.
- Toxicity to daphnia and other aquatic invertebrates: EC50 - *Daphnia magna* - > 100 % v/v saturated solution - 48 h.
- Toxicity to algae: EC50 - *Desmodesmus subspicatus* (previous name: *Scenedesmus subspicatus*) - > 14 mg/L - 72 h.
- Toxicity to microorganisms: EC50 - activated sludge of a predominantly domestic sewage - > 1 000 mg/L - 3 h. Remarks: Respiration rate.

12.2 Persistence and degradability

no data available

12.3 Bioaccumulative potential

no data available

12.4 Mobility in soil

no data available

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: UN1401 (For reference only, please check.) IMDG: UN1401 (For reference only, please check.) IATA: UN1401 (For reference only, please check.)

14.2 UN Proper Shipping Name

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

14.3 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.)

14.4 Packing group, if applicable

ADR/RID: II (For reference only, please check.) IMDG: II (For reference only, please check.) IATA: II (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
Calcium	Calcium	7440-70-2	231-179-5
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.
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 May 31, 2024

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, foam, halons and carbon dioxide. Do NOT take working clothes home. Health effects of exposure to the substance have not been investigated adequately.

Any questions regarding this SDS, Please send your inquiry to info@cato-chem.com

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 damage resulting from handling or from contact with the above product.