

Chemical Safety Data Sheet MSDS / SDS

Calcium nitrate SDS

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

Section 1	Section 2	Section 3	Section 4	Section 5	Section 6	Section 7	Section 8
Section 9	Section 10	Section 11	Section 12	Section 13	Section 14	Section 15	Section 16

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

Product name: Calcium nitrate

CAS: 10124-37-5

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**

Skin irritation, Category 2

Eye irritation, Category 2

GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Warning

Hazard statement(s)

H315 Causes skin irritation

H319 Causes serious eye irritation

Precautionary statement(s)**Prevention**

P264 Wash ... thoroughly after handling.

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

Response

P302+P352 IF ON SKIN: Wash with plenty of water/...

P321 Specific treatment (see ... on this label).

P332+P317 If skin irritation occurs: Get medical help.

P362+P364 Take off contaminated clothing and wash it before reuse.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage

none

Disposal

none

Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

Substance

Chemical name:	Calcium nitrate
Common names and synonyms:	Calcium nitrate
CAS number:	10124-37-5
EC number:	233-332-1
Concentration:	100%

SECTION 4: First aid measures**Description of necessary first-aid measures****If inhaled**

Fresh air, rest.

Following skin contact

First rinse with plenty of water for at least 15 minutes, then remove contaminated clothes and rinse again.

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. Give one or two glasses of water to drink. Refer for medical attention .

Most important symptoms/effects, acute and delayed

Dust causes mild irritation of eyes. (USCG, 1999)

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 shock and treat if necessary . Anticipate seizures and treat as 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 drool. Administer activated charcoal . Nitrates, nitrites, and related compounds

SECTION 5: Firefighting measures

Suitable extinguishing media

If material on fire or involved in fire: Flood with water. Cool all affected containers with flooding quantities of water. Apply water from as far a distance as possible.

Specific hazards arising from the chemical

Special Hazards of Combustion Products: May give off toxic oxides of nitrogen when involved in fire. Behavior in Fire: Greatly intensifies the burning of all combustible materials. (USCG, 1999)

Special protective actions for fire-fighters

In case of fire in the surroundings, use appropriate extinguishing media.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Sweep spilled substance into covered plastic containers. Wash away remainder with plenty of water.

Environmental precautions

Sweep spilled substance into covered plastic containers. Wash away remainder with plenty of water.

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

Precautions for safe handling

NO contact with flammables. 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 combustible substances and reducing agents. Dry. IT SHOULD NOT BE STORED NEAR ORG OR EASILY OXIDIZABLE MATERIALS.

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:	Calcium nitrate is a white to light gray granular solid. May be either the anhydrous compound or the tetrahydrate. Used in fertilizers, explosives and pyrotechnics.
Colour:	Deliquescent granules
Odour:	no data available
Melting point/freezing point:	561°C
Boiling point or initial boiling point and boiling range:	83°C at 760 mmHg
Flammability:	Gives off irritating or toxic fumes (or gases) in a fire. Not combustible but enhances combustion of other substances.
Lower and upper explosion limit/flammability limit:	no data available
Flash point:	no data available
Auto-ignition temperature:	no data available
Decomposition temperature:	no data available
pH:	5% aq soln= 6.0
Kinematic viscosity:	no data available
Solubility:	Very sol in water; freely sol in methanol, ethanol, acetone; almost insol in concn nitric acid
Partition coefficient n-octanol/water:	no data available
Vapour pressure:	no data available
Density and/or relative density:	2.36

Relative vapour density:	no data available
Particle characteristics:	no data available

SECTION 10: Stability and reactivity

Reactivity

The substance is a strong oxidant. It reacts with combustible and reducing materials.

Chemical stability

no data available

Possibility of hazardous reactions

IT IS A POWERFUL OXIDIZING AGENT & PRESENTS A DANGEROUS FIRE ... HAZARD. An oxidizing agent. Noncombustible but accelerates the burning of combustible materials. If large quantities are involved in the fire or the combustible material is finely divided an explosion may result. Prolonged exposure to fire or heat may result in an explosion. May explode if shocked or heated [Hawley]. Heating causes release of toxic oxides of nitrogen. Mixtures with alkyl esters may explode owing to the formation of alkyl nitrates; mixtures with phosphorus, tin(II) chloride, or other reducing agents may react explosively [Bretherick 1979 p. 108-109].

Conditions to avoid

no data available

Incompatible materials

Forms powerfully explosive mixtures with aluminum + ammonium nitrate + formamide + water, ammonium nitrate + hydrocarbon oils, ammonium nitrate + water-soluble fuels, and organic materials.

Hazardous decomposition products

When heated to incandescence, calcium nitrate decomp into /nitrogen oxide, calcium oxide and oxygen/.

SECTION 11: Toxicological information

Acute toxicity

Oral: LD50 Rat oral 302 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

May cause mechanical irritation to the eyes and respiratory tract. Ingestion could cause effects on the blood. This may result in the formation of methaemoglobin. The effects may be delayed. Medical observation is indicated.

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: UN1454 (For reference only, please check.)

IMDG: UN1454 (For reference only, please check.)

IATA: UN1454 (For reference only, please check.)

UN Proper Shipping Name

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

IMDG: CALCIUM NITRATE (For reference only, please check.)

IATA: CALCIUM NITRATE (For reference only, please check.)

Transport hazard class(es)

ADR/RID: 5.1 (For reference only, please check.)

IMDG: 5.1 (For reference only, please check.)

IATA: 5.1 (For reference only, please check.)

Packing group, if applicable

ADR/RID: III (For reference only, please check.)

IMDG: III (For reference only, please check.)

IATA: III (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

Rinse contaminated clothing with plenty of water because of fire hazard. Specific treatment is necessary in case of poisoning with this substance; the appropriate means with instructions must be available. The recommendations on this Card also apply to Calcium

nitrate hydrate (CAS 35054-52-5) and tetrahydrate (CAS 13477-34-4) .

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