

Safety Data Sheet

In accordance with CFR 1910.1200 (OSHA HCS)

1 Identification of substance and company

Product name:

Calcium nitrate, tetrahydrate

2 Hazards identification

Emergency Overview:



Signal word(s):

Danger

Hazard statements:

H272 May intensify fire; oxidizer
H315 Causes skin irritation
H319 Causes serious eye irritation
H335 May cause respiratory irritation

Precautionary statements:

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P220 Keep/Store away from clothing/combustible materials
P221 Take any precaution to avoid mixing with combustibles
P264 Wash skin thoroughly after handling
P270 Do not eat, drink or smoke when using this product
P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P405 Store locked up
P501 Dispose of contents/container in accordance with local/regional/national/international regulations

GHS Classification:

Oxidizing solid - 2
Skin irritation - 2
Eye irritation - 2A
Specific target organ toxicity - single exposure - respiratory - 3

Hazards not otherwise classified:

None

HMIS ratings (scale 0-4):

Health hazard:	1
Flammability:	0
Physical hazard:	1

3 Composition/Information on ingredients

Chemical name:

Calcium nitrate tetrahydrate

Designation:

CAS number:

13477-34-4

EC number:

233-332-1

Formula:

$\text{Ca}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$

Synonyms:

Lime nitrate, nitrocalcite, lime saltpeter

4 First aid measures

After inhalation:	Move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
After skin contact:	Wash off with soap and plenty of water. Consult a physician.
After eye contact:	Rinse thoroughly with plenty of water for at least 15 minutes. Consult a physician.
After ingestion:	Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.
Information for doctor:	Show this safety data sheet to the doctor in attendance
Symptoms/effects; acute and delayed:	Small doses of nitrates may cause weakness, general depression, headache and mental impairment. Larger doses may cause dizziness, abdominal cramps, vomiting, bloody diarrhea, convulsions and collapse.
Immediate medical attention and special treatment needed:	See above

5 Fire-fighting measures

Suitable and unsuitable extinguishing agents:	Water spray, alcohol-resistant foam, dry chemical or carbon dioxide
Special hazards caused by the material, its products of combustion or resulting gases:	Oxides of calcium and nitrogen (NO _x)
Special fire fighting procedures:	Wear self-contained breathing apparatus and fully protective fire fighting equipment/clothing
Unusual fire and explosion hazard:	Combination with combustible materials may result in an explosion. Runoff to sewer may create fire or explosion.

6 Accidental release measures

Person-related safety precautions:	Wear respiratory protection. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe area.
Measures for environmental protection:	Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.
Measures for cleaning/collecting:	Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for proper disposal.
Additional information:	See Section 7 for information on safe handling See Section 8 for information on personal protective equipment See Section 13 for information on disposal See Section 15 for regulatory information

7 Handling and storage

Information for safe handling:	Avoid contact with skin and eyes. Avoid dust formation. Provide appropriate exhaust ventilation.
Information about protection against explosions and fires:	Combination with combustible materials may result in an explosion.
Storage requirements to be met by storerooms and containers:	Keep container tightly closed in a dry and well-ventilated place
Incompatibility (avoid contact with):	Strong Acids. Incompatible with metal powders, organic materials and strong reducing agents.
Further information about storage conditions:	Hygroscopic

8 Exposure controls/personal protection

Ventilation requirements:	Local exhaust, chemical fume hood
Components with exposure limits that require monitoring:	No additional data available
Additional information:	No additional data available
General protective and hygienic measures:	The usual precautionary measures for handling chemicals should be adhered to Keep away from foodstuffs, beverages and food Instantly remove any soiled and impregnated garments Wash hands during breaks and at the end of the work Avoid contact with the eyes and skin
Personal protective equipment:	
Respiratory protection:	Filter-dust, fume, mist; respirator equipped with HEPA
(Use only NIOSH or CEN approved Equipment)	
Hand protection:	Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique.
Eye protection:	Goggles
Skin protection:	Completely covering work attire with full length apron
Additional protective equipment:	Sufficient to prevent contact. Emergency eyewash and safety shower
Precautionary labeling:	Wash thoroughly after handling Do not get in eyes, on skin or on clothing Do not breathe dust, vapor, mist, gas Keep away from heat, sparks, and open flames Empty container may contain hazardous residues

9 Physical and chemical properties

Physical state:	Crystal
Color:	White deliquescent crystal

Odor:	Odorless
Odor threshold:	No data available
Molecular Weight (Calculated):	236.15
pH	No data available
Melting point/freezing point/range:	39.7 C
Boiling point/range:	132 C (decomposes)
Sublimation temperature/start:	No data available
Decomposition temperature:	No data available
Flammability (solid, gas):	No data available
Flash point:	No data available
Autoignition temperature:	No data available
Danger of explosion:	No data available
Flammable limits:	
Lower:	No data available
Upper:	No data available
Vapor pressure (mm Hg):	No data available
Vapor density:	No data available
Specific gravity:	1.82
Bulk density:	No data available
Solubility in/Miscibility with water:	6600 g/L @ 30 C
Partition coefficient n-octanol/water:	No data available
Other information:	No additional data available

10 Stability and reactivity

Reactivity:	No data available
Chemical stability:	Stable under recommended storage conditions
Possibility of hazardous reactions:	Not determined
Conditions to be avoided:	Heat/ Open flames / Sparks / Contact with incompatibles
Materials to be avoided:	See section 7 for information on proper handling and storage
Dangerous reactions:	Not determined
Hazardous decomposition products: (thermal and other)	Oxides of calcium and nitrogen (NOx)

11 Toxicological information

LD/LC50 values that are relevant for classification:	oral-rat LD ₅₀ : 3900 mg/kg skin-rabbit: 500 gm/24H:MLD eye-rabbit: 500 mg/24H:MLD
Primary irritant or corrosive effect:	
on the skin:	Mild
on the eye:	Mild
Sensitization:	No data available
Potential health effects:	
Inhalation:	Slightly irritating to respiratory tract
Signs and symptoms of exposure:	Moderately toxic by ingestion. Product is irritating to the eyes, skin and respiratory tract. Small doses of nitrates may cause weakness, general depression, headache and mental impairment. Larger doses may cause dizziness, abdominal cramps, vomiting, bloody diarrhea, convulsions and collapse.
Carcinogenicity:	This product is not listed as a carcinogen with IARC, ACGIH, NTP or OSHA.
Additional information:	No data available

12 Ecotoxicological information

Toxicity:	
Toxicity to fish:	Rainbow trout LC ₅₀ : > 98.9 mg/L:96H
Toxicity to daphnia and other aquatic invertebrates:	No data available
Toxicity to algae:	No data available
Persistence and degradability:	
Biodegradability:	No data available
Bioaccumulative potential:	
Bioaccumulation:	No data available
Mobility in soil:	No data available
Other adverse effects:	No data available

13 Disposal considerations

Recommendation:	Consult state, local or national regulation for proper disposal Allow professional disposal company to handle waste Must be specially treated under adherence to official regulations
Unclean packagings recommendation:	Disposal must be made according to official regulations

14 Transport information

Land transport DOT



Proper shipping name:	Calcium nitrate
DOT Hazard Class:	5.1
UN Identification number:	UN1454
Label(s):	Oxidizer
Packing group:	III
North American Emergency Response	
Guidebook No.:	140

Air transport ICAO-TI and IATA-DGR:



Proper shipping name:	Calcium nitrate
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UN Identification number:	UN1454
Label(s):	Oxidizer
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North American Emergency Response	
Guidebook No.:	140

UPS Ground / FedEx Ground



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DOT Hazard Class:	5.1
UN Identification number:	UN1454
Label(s):	Oxidizer
Packing group:	III
North American Emergency Response	
Guidebook No.:	140

UPS Air	FORBIDDEN
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15 Regulatory information

SARA Section 302 Extremely Hazardous components and corresponding TPQs:	No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302
SARA Section 311 / 312 hazards:	Acute Health Hazard
SARA Section 313 components:	Not subject to the reporting levels established by SARA Title III, Section 313
California Proposition 65 components:	This product does not contain any chemicals known to the State of California to cause cancer, birth defects or any other reproductive harm.
TSCA:	Product is listed on TSCA Inventory

16 Other information

The above information is accurate to the best of our knowledge. However, since data, safety standards and government regulation are subject to change and the conditions of handling and use, or misuse are beyond our control.