



SIGMA-ALDRICH

Material Safety Data Sheet

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Version 1.90

Section 1 - Product and Company Information

Product Name	Calcium nitrate tetrahydrate, 99%, A.C.S. reagent
Product Number	237124
Brand	Sigma-Aldrich
Company	Sigma-Aldrich
Street Address	3050 Spruce Street
City, State, Zip, Country	SAINT LOUIS, MO 63103 US
Technical Phone:	800-325-5832
Fax:	800-325-5052
Emergency Phone:	314-776-6555

Section 2 - Composition/Information on Ingredient

<u>Substance Name</u>	<u>CAS #</u>	<u>SARA 313</u>	<u>EC no</u>	<u>Annex I Index Number</u>
CALCIUM NITRATE TETRAHYDRATE	13477-34-4	Yes	233-332-1	

Formula	Ca(NO ₃) ₂ ·4H ₂ O
Synonyms	Calcium dinitrate tetrahydrate, Calcium nitrate tetrahydrate, Dusonian vapenaty (Czech), Nitric acid, calcium salt, tetrahydrate

Section 3 - Hazards Identification

Emergency Overview

Oxidizing.
Contact with combustible material may cause fire.
Target organ(s): Blood. Central nervous system.

HMIS Rating			
Health: 1*	Flammability: 0	Reactivity: 3	

NFPA Rating			
Health: 0	Flammability: 0	Reactivity: 3	

*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

Oral Exposure

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

Inhalation Exposure

If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.

Dermal Exposure

In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

Eye Exposure

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

Autoignition Temp: N/A

Extinguishing Media

Suitable

Carbon dioxide, dry chemical powder, or appropriate foam.

Firefighting

Protective Equipment

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific Hazard(s)

Emits toxic fumes under fire conditions. Contact with other material may cause fire. May accelerate combustion.

Section 6 - Accidental Release Measures

Procedure to be Followed in Case of Leak or Spill

Evacuate area.

Procedure(s) of Personal Precaution(s)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

Handling

User Exposure

Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

Storage

Suitable

Keep tightly closed. Keep away from combustible materials, heat, sparks, and open flame.

Special Requirements

Hygroscopic.

Section 8 - Exposure Controls / PPE

Engineering Controls

Use only in a chemical fume hood. Safety shower and eye bath.

Personal Protective Equipment

Respiratory

Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.

Hand

Compatible chemical-resistant gloves.

Eye

Chemical safety goggles.

Sigma-Aldrich - 237124

Page 2

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General Hygiene Measures

Wash thoroughly after handling. Remove and wash contaminated clothing promptly. Discard contaminated shoes.

Section 9 - Physical/Chemical Properties

Appearance	Physical State	Color	Form
	Solid	Colorless	Crystals

Molecular Weight: 236.15 AMU

pH	5.5 - 7.0
BP/BP Range	N/A
MP/MP Range	44 °C
Freezing Point	N/A
Vapor Pressure	N/A
Vapor Density	N/A
Saturated Vapor Conc.	N/A
SG/Density	1.82 g/cm3
Bulk Density	N/A
Odor Threshold	N/A
Volatile%	N/A
VOC Content	N/A
Water Content	N/A
Solvent Content	N/A
Evaporation Rate	N/A
Viscosity	N/A
Partition Coefficient	N/A
Decomposition Temp.	N/A
Flash Point °F	N/A
Flash Point °C	N/A

Explosion Limits N/A

Flammability N/A
Autoignition Temp N/A

Solubility
Solubility in Water: 1 M in H₂O, 20°C, complete, colorless

N/A = not available

Section 10 - Stability and Reactivity**Stability**

Stable

Stable.

Materials to Avoid

Strong reducing agents, Strong acids

Hazardous Decomposition Products

Hazardous Decomposition Products

Nitrogen oxides, Calcium oxide.

Hazardous Polymerization
Hazardous Polymerization
Will not occur.

Section 11 - Toxicological Information**Route of Exposure****Skin Contact**

May cause skin irritation.

Skin Absorption

May be harmful if absorbed through the skin.

Eye Contact

May cause eye irritation.

Inhalation

May be harmful if inhaled. Material may be irritating to mucous membranes and upper respiratory tract.

Ingestion

May be harmful if swallowed.

Target Organ(s) or System(s)

Blood. Central nervous system.

Signs and Symptoms of Exposure

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

RTECS Number: N/AEW3000000

Toxicity Data

Oral - Rat: 3900 mg/kg (LD50)

Irritation Data

Skin - Rabbit: 500 mg 24H

Remarks: Mild irritation effect

Eyes - Rabbit: 500 mg 24H

Remarks: Mild irritation effect

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations**Appropriate Method of Disposal of Substance or Preparation**

Contact a licensed professional waste disposal service to dispose of this material.
Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information**DOT**

Proper Shipping Name: Calcium nitrate

UN#: 1454

Class: 5.1

Packing Group: Packing Group III

Hazard Label: Oxidizer

PIH: Not PIH

IATA

Proper Shipping Name: Calcium nitrate

IATA UN Number: 1454

Hazard Class: 5.1

Packing Group: III

Section 15 - Regulatory Information

EU Additional Classification

Symbol of Danger: O

Indication of Danger

Oxidizing.

Risk Statements R: 8

Contact with combustible material may cause fire.

US Classification and Label Text

Indication of Danger

Oxidizing.

Risk Statements

Contact with combustible material may cause fire.

US Statements

Target organ(s): Blood, Central nervous system.

United States Regulatory Information

SARA Listed: Yes

Notes: This product is subject to SARA section 313 reporting requirements - nitrate compounds (water dissociable).

Canada Regulatory Information

WHMIS Classification

This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: No

NDSL: No

Section 16 - Other Information

Disclaimer

For R&D use only. Not for drug, household or other uses.

Warranty

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. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2007 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

