

Material Safety Data Sheet

Calcium nitrate tetrahydrate

ACC# 04020

Section 1 - Chemical Product and Company Identification

MSDS Name: Calcium nitrate tetrahydrate

Catalog Numbers: AC217510000, AC217510010, AC423530000, AC423530250, AC423535000, S71925, S71925-1, S93164, C108-3, C109-3, C109-500, NC9529337, XXAC21751-25, XXC10950KG

Synonyms: Nitric acid, calcium salt, tetrahydrate; Norwegian saltpeter tetrahydrate; Calcium dinitrate tetrahydrate; Lime nitrate tetrahydrate; Nitrocalcite tetrahydrate; Lime saltpeter tetrahydrate.

Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
13477-34-4	Calcium nitrate tetrahydrate	>99	unlisted

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: white crystals.

Danger! Strong oxidizer. Contact with other material may cause a fire. Causes eye irritation. May cause skin and respiratory tract irritation. May cause methemoglobinemia. Hygroscopic (absorbs moisture from the air).

Target Organs: Blood, eyes.

Potential Health Effects

Eye: Causes eye irritation.

Skin: May cause skin irritation.

Ingestion: May cause digestive tract disturbances. Ingestion of nitrate containing compounds can lead to methemoglobinemia.

Inhalation: May cause respiratory tract irritation. May cause methemoglobinemia. The toxicity of nitrates is due to their in-vivo conversion to nitrites which may lead to methemoglobinemia.

Chronic: May cause methemoglobinemia, which is characterized by chocolate-brown colored blood, headache, weakness, dizziness, breath shortness, cyanosis (bluish skin due to deficient oxygenation of blood), rapid heart rate, unconsciousness and possible death.

Section 4 - First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid.

Skin: In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse.

Ingestion: If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: For methemoglobinemia, administer oxygen alone or with Methylene Blue depending on the methemoglobin concentration in the blood.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Strong oxidizer. Contact with other material may cause fire. Containers may explode in the heat of a fire. May decompose explosively when heated or involved in a fire. May accelerate burning if involved in a fire.

Extinguishing Media: Cool containers with flooding quantities of water until well after fire is out. For small fires, do NOT use dry chemicals, carbon dioxide, halon or foams. USE WATER ONLY. For large fires flood fire with water from a distance.

Flash Point: Not applicable.

Autoignition Temperature: Not applicable.

Explosion Limits, Lower: Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 2; Flammability: 0; Instability: 1; Special Hazard: OX

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Avoid generating dusty conditions. Provide ventilation. Keep combustibles (wood, paper, oil, etc.,) away from spilled material.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use with adequate ventilation. Avoid contact with eyes, skin, and clothing. Keep from contact with clothing and other combustible materials. Avoid breathing dust. Inform laundry personnel of contaminant's hazards.

Storage: Do not store near combustible materials. Keep away from reducing agents. Keep containers tightly closed. Avoid storage on wood floors.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Calcium nitrate tetrahydrate	none listed	none listed	none listed
Calcium nitrate anhydrous	none listed	none listed	none listed

OSHA Vacated PELs: Calcium nitrate tetrahydrate: No OSHA Vacated PELs are listed for this chemical. Calcium nitrate anhydrous: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to minimize contact with skin.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Crystals

Appearance: white

Odor: odorless

pH: Not available.

Vapor Pressure: Negligible.

Vapor Density: Not applicable.

Evaporation Rate: Negligible.

Viscosity: Not available.

Boiling Point: Not available.

Freezing/Melting Point: 45 deg C

Decomposition Temperature: 132 deg C

Solubility: Soluble.

Specific Gravity/Density: 1.82

Molecular Formula: Ca(NO₃)₂·4H₂O

Molecular Weight: 236.15

Section 10 - Stability and Reactivity

Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions. Deliquescent (tending to absorb atmospheric water vapor and become liquid).

Conditions to Avoid: Mechanical shock, dust generation, moisture, excess heat.

Incompatibilities with Other Materials: Strong reducing agents, ammonia, finely powdered metals, hydrazine, organic materials, combustible materials.

Hazardous Decomposition Products: Oxides of nitrogen, calcium oxide.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:

CAS# 13477-34-4: EW3000000

CAS# 10124-37-5: EW2985000

LD50/LC50:

CAS# 13477-34-4:

Draize test, rabbit, eye: 500 mg/24H Mild;

Draize test, rabbit, skin: 500 mg/24H Mild;

Oral, rat: LD50 = 3900 mg/kg;

CAS# 10124-37-5:
Oral, rat: LD50 = 302 mg/kg;

Carcinogenicity:

CAS# 13477-34-4: Not listed by ACGIH, IARC, NTP, or CA Prop 65.
CAS# 10124-37-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information available.
Teratogenicity: No information available.
Reproductive Effects: No information available.
Mutagenicity: No information available.
Neurotoxicity: No information available.
Other Studies:

Section 12 - Ecological Information

No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.
RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	CALCIUM NITRATE	CALCIUM NITRATE
Hazard Class:	5.1	5.1
UN Number:	UN1454	UN1454
Packing Group:	III	III

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 13477-34-4 is not on the TSCA Inventory because it is a hydrate. It is considered to be listed if the CAS number for the anhydrous form is on the inventory (40CFR720.3(u)(2)).
CAS# 10124-37-5 is listed on the TSCA inventory.

Health & Safety Reporting List
None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules
None of the chemicals in this product are under a Chemical Test Rule.

Section 12b
None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs
None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.

SARA Codes
CAS # 13477-34-4: immediate, fire.
CAS # 10124-37-5: immediate, fire.

Section 313
This material contains Calcium nitrate tetrahydrate (listed as Water Dissociable Nitrate Compounds), >99%, (CAS# 13477-34-4) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR
This material contains Calcium nitrate anhydrous (listed as Water Dissociable Nitrate Compounds), -, (CAS# 10124-37-5) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:
This material does not contain any hazardous air pollutants.
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.

Clean Water Act:
None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:
None of the chemicals in this product are considered highly hazardous by OSHA.

STATE
CAS# 13477-34-4 is not present on state lists from CA, PA, MN, MA, FL, or NJ.
CAS# 10124-37-5 can be found on the following state right to know lists: New Jersey.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

XI O

Risk Phrases:

R 36 Irritating to eyes.

R 8 Contact with combustible material may cause fire.

Safety Phrases:

S 17 Keep away from combustible material.

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

WGK (Water Danger/Protection)

CAS# 13477-34-4: 1

CAS# 10124-37-5: 1

Canada - DSL/NDSL

CAS# 10124-37-5 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of C, D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 13477-34-4 is not listed on the Canadian Ingredient Disclosure List.

CAS# 10124-37-5 is not listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 1/21/1998

Revision #4 Date: 10/03/2005

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.