



# SAFETY DATA SHEET

## 1. CHEMICAL IDENTIFICATION AND COMPANY INFORMATION

PRODUCT NAME: Calcium Nitrate, Tetrahydrate  
PRODUCT NUMBER: C180  
COMPANY INFO: *PhytoTechnology Laboratories*<sup>®</sup>  
PO Box 12205, Shawnee, KS 66282-2205  
Phone: 1-888-749-8682 or 1-913-341-5343; Fax: 1-888-449-8682 or 1-913-341-5442  
www.phytotechlab.com

EMERGENCY PHONE NUMBER: 1-800-535-5053 - US Only  
1-352-323-3500 - International

RECOMMENDED USE: For Research Use Only

RESTRICTIONS ON USE: Products sold by *PhytoTechnology Laboratories*<sup>®</sup> are intended for research and laboratory use only. Products are not to be used as human or animal therapeutics, cosmetics, agricultural or pesticidal products, food additives, or as household chemicals.

## 2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

GHS Classification in accordance to 29 CFR 1910 (OSHA HCS):

- H272 – Oxidizing solids (Category 3)
- H302 – Acute toxicity, Oral (Category 4)
- H318 – Serious eye damage (Category 1)

GHS Label elements, including hazard and precautionary statements:



Signal Word: **Warning**

Hazard Statements:

- H272 – May intensify fire, oxidizer.
- H315 – Causes skin irritation.
- H319 – Causes serious eye irritation.
- H335 – May cause respiratory irritation.

Precautionary Statements:

- P221 – Take any precaution to avoid mixing with combustibles.
- P280 – Wear protective clothing.
- P305 + P351 + P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: N/A  
CAS No: 13477-34-4  
Formula:  $\text{Ca}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$   
Molecular Weight: 236.15 g/mol  
EC No.: 233-332-1

Ingredient	CAS Number	Percent	Hazardous
Calcium Nitrate, Tetrahydrate	13477-34-4	>99 %	No exposure limits established by OSHA or ACGIH

## 4. FIRST AID MEASURES

General Advice: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

<b>Route of Entry</b>	<b>Symptoms</b>	<b>First Aid Procedures</b>
Ingestion	May cause irritation if swallowed	If swallowed, wash out mouth with water. Never give anything by mouth to an unconscious person. <b>Get medical attention.</b>
Inhalation	May cause irritation to respiratory tract	Safely remove victim to fresh air. If not breathing, institute cardiopulmonary resuscitation (CPR). If breathing is difficult, ensure clear airway and give oxygen. <b>Get medical attention.</b>
Eye Contact	Direct contact may cause irritation. May cause redness, tearing, or blurred vision.	Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. <b>Get medical attention if irritation persists.</b>
Skin Contact	Irritating. May cause reddening, itching or inflammation.	Wash area thoroughly with soap and water. Remove and wash contaminated clothing. <b>Get medical attention if irritation persists.</b>

Most Important Symptoms or Effects, Both Acute and Delayed:

See section 2 and/or section 11

Recommendation for Immediate Medical Care and Special Treatment Needed:

No data available

## 5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media:	Water spray, carbon dioxide, dry chemical powder, or appropriate foam. Use extinguishing media suitable for surrounding fire.
Special Protective Equipment and Precaution for Firefighters:	In the event of a fire, wear full protective clothing and NIOSH approved self-contained breathing apparatus. Evacuate the area and fight fire from a safe distance.
Hazardous Combustion Products:	May emit toxic fumes under fire conditions.
Toxic Gases Produced:	Nitrogen oxides (NO <sub>x</sub> ), calcium oxide

## 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures:

Use personal protection recommended in Section 8. Avoid dust formation. Avoid breathing dust, vapours, mist or gas. Ensure adequate ventilation, especially in confined areas. Evacuate personnel to safe areas.

Environmental Precautions:	Prevent further leakage or spillage if safe to do so. Do not let product enter drains.
Method of Containment and Cleanup:	Wear suitable protective clothing. Avoid dust formation. Avoid breathing vapours, mist or gas. Carefully sweep up and remove. Place material in a dry container and cover. Remove from the area. Flush spill area with water. Do not let product enter drains.

## 7. HANDLING AND STORAGE

Precaution for Safe Handling:	Avoid contact with skin and eyes. Avoid dust formation and aerosols. Avoid incompatible substances. Provide adequate ventilation at places where dust is formed. Wash thoroughly after use.
Conditions for Safe Storage:	Keep in a tightly closed container and store in a cool, dry, and well-ventilated area. Product is hygroscopic.
Incompatibilities:	Strong reducing agents
Recommended Storage Temperature:	Room Temperature

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OSHA's Permissible Exposure Limits (PELs): No data available

Threshold Limit Values (TLVs): No data available

Engineering Controls: Handle in accordance to general industrial hygiene and safety practice.

Personal Protective Equipment (PPE):

- Eye/Face Protection: Chemical safety glasses or goggles. Have eye-washing facilities readily available where eye contact can occur.
- Skin Protection: Protective gloves
- Body Protection: Lab coat
- Respiratory Protection: A NIOSH/MSHA approved air purifying respirator

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance: White or transparent crystals

pH (0.40 g/L): 5.0 – 6.0

Solubility: Soluble in Water

Melting Range: 44 °C (111 °F)

Relative Density: 1.82 g/cm<sup>3</sup>

Vapor Density: No data available

Vapor Pressure: No data available

Specific Gravity: No data available

Odor: Odorless

Odor Threshold: No data available

Viscosity: No data available

Relative Density: No data available

Evaporation Rate: No data available

Initial Boiling Point and Boiling Range: No data available

Flammability (solid, gas): No data available

Partition coefficient: No data available  
n-octanol/water):

Auto-ignition Temperature: No data available

Decomposition Temperature: No data available

Flash Point (Closed Cup): No data available

Flammable Limits: Upper (%) – No data available Lower (%) – No data available

**10. STABILITY AND REACTIVITY**

Reactivity: No data available

Chemical Stability: Stable under normal conditions of use

Possibility of Hazard Reactions: Will not occur

Conditions to Avoid: Heat, flames, dust generation, avoid contact with combustible materials (paper, wool, oil)

Incompatibles Materials: Strong reducing agents

Hazardous Decomposition Products: Nitrogen oxides

**11. TOXICOLOGICAL INFORMATION**

Toxicity: LD<sub>50</sub> (Oral-Rat)(mg/Kg) 3900

LD<sub>50</sub> (IV-Rat)(mg/Kg) No data available

LD<sub>50</sub> (Oral-Mouse)(mg/Kg) No data available

Carcinogenicity: NTP: No  
IARC: Group 2A - Probably carcinogenic to humans  
Z List: No  
OSHA Reg: No

Reproductive Toxicity: No data available

Symptoms Associated with Overexposure: Irritation, cough, dizziness, headache, vomiting, convulsions, cyanosis, cramps

Specific Target Organ Toxicity: Single Exposure: No data available  
Repeated Exposure: No data available

Target Organs: Blood, Central Nervous System

Medical Conditions Aggravated By Exposure: None Identified

Routes of Entry: Inhalation, Absorption through skin, eyes, mouth

NIOSH/RTECS NO: EW3000000

***The toxicological properties of this product have not been thoroughly investigated***

## 12. ECOLOGICAL INFORMATION

Toxicity: LC50 – rainbow trout - >98.9 mg/L – 96 hrs

Persistence and Degradability: No data available

Bioaccumulative Potential: No data available

Mobility in Soil: No data available

Other Adverse Effects: No data available

## 13. DISPOSAL CONSIDERATION

Disposal Procedure: Dispose in accordance with all applicable federal, state, and local environmental regulations.

EPA Hazardous Waste Number: No data available

## 14. TRANSPORT INFORMATION

Domestic (D.O.T.): Proper Shipping Name: Calcium Nitrate  
Hazard Class: 5.1 Packing Group III  
UN/NA: UN1454  
Labels: Oxidizer

International:

IMDG: Proper Shipping Name: Calcium Nitrate  
Hazard Class: 5.1 Packing Group III EMS No: F-A, S-Q  
UN/NA: UN1454  
Labels: Oxidizer

IATA: Proper Shipping Name: Calcium Nitrate  
Hazard Class: 5.1 Packing Group III  
UN/NA: UN1454  
Labels: Oxidizer

## 15. REGULATORY INFORMATION

TSCA:	No
SARA TITLE III:	
Section 302 (EHS) Ingredients:	No
Section 313 Ingredients:	Calcium nitrate tetrahydrate, CAS No. 13477-34-4
Section 304 (EHS/CERCLA) Ingredients:	No
Section 311/312 Hazard:	Reactivity Hazard, Acute Health Hazard, Chronic Health Hazard
Massachusetts Right to Know Components:	No components are subject to the Massachusetts Right to Know Act
Pennsylvania Right to Know Components:	CAS No.: 13477-34-4 Calcium nitrate tetrahydrate
New Jersey Right to Know Components:	CAS No.: 13477-34-4 Calcium nitrate tetrahydrate
California Prop. 65 Components:	This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

## 16. OTHER INFORMATION

HMIS Rating:	<b>Health Hazard</b>	<b>Chronic Health Hazard</b>	<b>Flammability</b>	<b>Physical Hazard</b>
	2	*	0	1
NFPA Rating:	<b>Health Hazard</b>	<b>Fire Hazard</b>	<b>Reactivity Hazard</b>	<b>Special Hazard</b>
	2	0	1	OX

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