Calcium Nitrate, 4-Hydrate

J.T. BAKER INC., 222 Red School Lane, Phillipsburg, NJ 08865

SECTION I - PRODUCT IDENTIFICATION

Product Name: Calcium Nitrate, 4-Hydrate
Common Synonyms: Calcium (II) Nitrate, Tetrahydrate; Nitric Acid, Calcium Salt, Tetrahydrate
Chemical Family: Calcium Compounds
Formula: Ca(NO$_3$)$_2$·4H$_2$O
Formula Wt.: 236.15
CAS No.: 13477-34-4
NIOSH/RTECS No.: EU3000000
Product Use: Laboratory Reagent
Product Codes: 1395

PRECAUTIONARY LABELING

F----ER SAF-T-DATA* System

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>FLAMMABILITY</th>
<th>REACTIVITY</th>
<th>CONTACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>SLIGHT</td>
<td>NONE</td>
<td>SEVERE</td>
<td>MODERATE</td>
</tr>
</tbody>
</table>

Laboratory Protective Equipment

U.S. Precautionary Labeling

DANGER!
CAUSES IRRITATION. STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE.
Keep from contact with clothing and other combustible materials. Do not store near combustible materials. Avoid contact with eyes, skin, clothing. Avoid breathing dust. Keep in tightly closed container. Use with adequate ventilation. Wash thoroughly after handling. In case of fire, soak with water. In case of spill, sweep up and remove. Flush spill area with water.

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PRECAUTIONARY LABELING (CONTINUED)

International Labeling

Avoid contact with eyes. After contact with skin, wash immediately with plenty of water. Keep container tightly closed.

SAF-T-DATA® Storage Color Code: Yellow (reactive)

SECTION II - COMPONENTS

Component | CAS No. | Weight % | OSHA/PEL | ACGIH/TLV
--- | --- | --- | --- | ---
Calcium Nitrate, 4-Hydrate | 13477-34-4 | 99-100 | N/E | N/E

SECTION III - PHYSICAL DATA

Boiling Point: N/A

Melting Point: 45°C (113°F)
(at 760 mm Hg)

Specific Gravity: 1.82
(H₂O=1)

Solubility(H₂O): Appreciable (>10%)

pH: N/A

Odor Threshold (ppm): N/A

Coefficient Water/Oil Distribution: N/A


Vapor Pressure (mmHg): N/A

Vapor Density (air=1): N/A

Evaporation Rate: N/A

% Volatiles by Volume: 0
(21°C)

Physical State: Solid

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SECTION IV - FIRE AND EXPLOSION HAZARD DATA

Flash Point (Closed Cup): N/A
Autoignition Temperature: N/A
Flammable Limits: Upper - N/A  Lower - N/A

Fire Extinguishing Media
Use water spray.

Special Fire-Fighting Procedures
Firefighters should wear proper protective equipment and self-contained breathing apparatus with full facepiece operated in positive pressure mode. Move containers from fire area if it can be done without risk. Use water to keep fire-exposed containers cool.

Unusual Fire & Explosion Hazards
- Strong oxidizer. Contact with other material may cause fire. Can react violently with shock, friction or heat.

Toxic Gases Produced
oxides of nitrogen

Explosion Data-Sensitivity to Mechanical Impact
Yes.

Explosion Data-Sensitivity to Static Discharge
None identified.

SECTION V - HEALTH HAZARD DATA

Threshold Limit Value (TLV/TWA): Not Established
Short-Term Exposure Limit (STEL): Not Established
Permissible Exposure Limit (PEL): Not Established
Toxicity of components

Oral Rat LD50 for Calcium Nitrate, 4-Hydrate 3900 mg/kg
Carcinogenicity: NTP: No  IARC: No  Z List: No  OSHA Reg: No

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Carcinogenicity
None identified.

Reproductive Effects
None identified.

Effects of Overexposure

INHALATION: irritation of upper respiratory tract
SKIN CONTACT: irritation
EYE CONTACT: irritation
SKIN ABSORPTION: none identified
INGESTION: gastrointestinal irritation, nausea, vomiting
CHRONIC EFFECTS: none identified

Target Organs
eyes, skin

Medical Conditions Generally Aggravated by Exposure
none identified

Primary Routes of Entry
skin contact, eye contact, inhalation, ingestion

Emergency and First Aid Procedures

INGESTION: CALL A PHYSICIAN. If swallowed, if conscious, give large amounts of water. Induce vomiting.

INHALATION: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

SKIN CONTACT: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before re-use.

EYE CONTACT: In case of eye contact, immediately flush with plenty of water for at least 15 minutes.

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SECTION V - HEALTH HAZARD DATA (CONTINUED)

SARA/TITLE III HAZARD CATEGORIES and LISTS

Acute: Yes Chronic: Yes Flammability: Yes Pressure: No Reactivity: No

Extremely Hazardous Substance: No
CERCLA Hazardous Substance: No
SARA 313 Toxic Chemicals: No
TSCA Inventory: Yes

SECTION VI - REACTIVITY DATA

Stability: Stable
Hazardous Polymerization: Will not occur

Conditions to Avoid: heat, flame, shock

Incompatibles: combustible materials, strong reducing agents, organic materials, ammonia

Decomposition Products: oxides of nitrogen

SECTION VII - SPILL & DISPOSAL PROCEDURES

Steps to be Taken in the Event of a Spill or Discharge
Wear self-contained breathing apparatus and full protective clothing. Keep combustibles (wood, paper, oil, etc.) away from spilled material. With clean shovel, carefully place material into clean, dry container and cover; remove from area. Flush spill area with water.

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

EPA Hazardous Waste Number: D001 (Ignitable Waste)
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SECTION VIII - INDUSTRIAL PROTECTIVE EQUIPMENT

Ventilation: Use adequate general or local exhaust ventilation to keep fume or dust levels as low as possible.

Respiratory Protection: None required where adequate ventilation conditions exist. If airborne concentration is high, use an appropriate respirator or dust mask.

Eye/Skin Protection: Safety goggles, uniform, butyl rubber gloves are recommended.

SECTION IX - STORAGE AND HANDLING PRECAUTIONS

SAF-T-DATA* Storage Color Code: Yellow (reactive)

Storage Requirements
Keep container tightly closed. Store separately and away from flammable and combustible materials.

Special Precautions
DO NOT EXPOSE TO HEAT. Product melts at 45°C (113°F). STORE/TRANSPORT AT OR BELOW 30°C (86°F).

SECTION X - TRANSPORTATION DATA AND ADDITIONAL INFORMATION

Domestic (D.O.T.)

Proper Shipping Name: Calcium nitrate
Hazard Class: Oxidizer
UN/NA: UN1454
Labels: OXIDIZER
Regulatory References: 49CFR 172.101; 173.182

International (I.M.O.)

Proper Shipping Name: Calcium nitrate
Hazard Class: 5.1
UN: UN1454 Marine Pollutants: No
Labels: OXIDIZING AGENT
Regulatory References: 49CFR 172.102; Part 176; IMO

I.M.O. Page: 5030
Packaging Group: III

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SECTION X - TRANSPORTATION DATA AND ADDITIONAL INFORMATION (CONTINUED)

AIR (I.C.A.O.)

Proper Shipping Name: Calcium nitrate
Hazard Class: 5.1
UN: UN1454
Packaging Group: III
Labels: OXIDIZING AGENT
Regulatory References: 49CFR 172.101; 173.6; Part 175; ICAO/IATA
U.S. Customs Harmonization Number: 28342900005

N/A = Not Applicable or Not Available
N/E = Not Established

T. information in this Material Safety Data Sheet meets the requirements of the United States OCCUPATIONAL SAFETY AND HEALTH ACT and regulations promulgated thereunder (29 CFR 1910.1200 et. seq.) and the Canadian WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM. This document is intended only as a guide to the appropriate precautionary handling of the material by a person trained in, or supervised by a person trained in, chemical handling. The user is responsible for determining the precautions and dangers of this chemical for his or her particular application. Depending on usage, protective clothing including eye and face guards and respirators must be used to avoid contact with material or breathing chemical vapors/fumes.

Exposure to this product may have serious adverse health effects. This chemical may interact with other substances. Since the potential uses are so varied, Baker cannot warn of all of the potential dangers of use or interaction with other chemicals or materials. Baker warrants that the chemical meets the specifications set forth on the label.

BAKER DISCLAIMS ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED WITH REGARD TO THE PRODUCT SUPPLIED HEREUNDER, ITS MERCHANTABILITY OR ITS FITNESS FOR A PARTICULAR PURPOSE.

The user should recognize that this product can cause severe injury and even death, especially if improperly handled or the known dangers of use are not heeded. READ ALL PRECAUTIONARY INFORMATION. As new documented general safety information becomes available, Baker will periodically revise this Material Safety Data Sheet.

Note: CHEMTREC, CANUTE, and NATIONAL RESPONSE CENTER emergency telephone numbers are to be used ONLY in the event of CHEMICAL EMERGENCIES involving a spill, leak, fire, exposure, or accident involving chemicals. All non-emergency questions should be directed to Customer Service (1-800-JTBAKER) for assistance.

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