

Safety Data Sheet
Calcium Ammonium Nitrate

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifier

Product name: Calcium Ammonium Nitrate

Synonym(s): Nitric acid, ammonium calcium salt; Nitric acid, ammonium calcium salt (1:?:?)

1.2 Relevant identified uses of the substance or mixture and uses advised against

General use: For industrial and laboratory use

Uses advised against: None specified

1.3 Details of the supplier and of the safety data sheet

Manufacturer/Distributor

Silver Fern Chemical, Inc.

2226 Queen Anne Avenue North, Suite C

Seattle, WA 98109 USA 1-866-282-3384

Website - www.silverfernchemical.com; email address - info@silverfernchemical.com

1.4 Emergency telephone number: +1-800-535-5053; Outside USA & Canada +1-352-323-3500

SECTION 2 - HAZARDS IDENTIFICATION

2.1 Classification of substance or mixture

Product definition: Substance

Classification in accordance with 29 CFR 1910 (OSHA HCS) and Regulation EC No. 1272/2008

Acute Toxicity, Oral - Category 4 [H302]

Eye Damage - Category 1 [H318]

2.2 Label elements

Hazard symbol(s):



GHS05



GHS07

Signal word: **Danger**

Hazard statement(s): H302 - Harmful if swallowed
H318 - Causes serious eye damage

Precautionary statements

[Prevention]

P264 - Wash hands and other exposed skin areas thoroughly after handling.

P270 - Do not eat, drink or smoke when using this product.

P280 - Wear protective gloves, protective clothing and eye protection.

[Response]

P301 + P330 + P312 - IF SWALLOWED: Rinse mouth. Call a POISON CENTER or doctor if you feel unwell.

P305 + P351 + P338 + P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

[Disposal]

P501 - Dispose of contents and containers in accordance with national and local regulations.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

None as defined under 29 CFR 1900.1200.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

% by Weight	Ingredient	CAS Number	EC Number	Index Number	GHS Classification
≤ 100	Calcium ammonium nitrate	15245-12-2	239-289-5	-----	H302, H318

There are no additional ingredients present in this product which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

3.2 Mixtures

Not applicable

SECTION 4 – FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation: If product dust causes respiratory irritation or distress, move the exposed person to fresh air immediately. If breathing is difficult or irregular, administer oxygen; if respiratory arrest occurs, start artificial respiration by trained personnel. If unconscious, maintain an open airway.

Loosen tight clothing such as a collar, tie, belt or waistband. If symptoms persist or if the victim feels unwell, seek medical attention.

Eyes: DO NOT RUB EYES. Immediately flush eyes with large amounts of water or saline solution for at least 15 minutes, occasionally lifting the upper and lower lids. Remove contact lenses, if present and easy to do, after first 2 minutes and continue rinsing. If irritation persists seek medical attention, preferably from an ophthalmologist.

Skin: Flush skin with large amounts of water while removing contaminated clothing. Wash the affected area with soap and water followed by thorough rinsing. Wash contaminated clothing and shoes before reuse. If irritation persists, seek medical attention.

Ingestion: Rinse mouth with water if the victim is conscious. Remove dentures if present. DO NOT induce vomiting unless directed to do so by medical personnel. Vomiting may occur spontaneously. To prevent aspiration of material into the lungs, lay the victim on one side with the head lower than the waist. Never give anything by mouth to an unconscious or convulsing person. Do not leave the victim unattended. Seek immediate medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Potential health symptoms and effects

Eyes: Causes severe eye irritation and serious eye damage. Symptoms may include inflammation, tearing, pain and blurred vision. Permanent eye damage including blindness may occur. Particulates can cause mechanical irritation of the eye and surrounding tissue.

Skin: May cause skin irritation with localized redness, itching and discomfort.

Inhalation: Harmful if inhaled. Causes respiratory tract irritation headache, nasal irritation, chest tightness and breathing difficulty.

Ingestion: Harmful if swallowed. Causes irritation of the digestive tract with headache, nausea, sore throat, vomiting, abdominal pain and diarrhea. May cause burns to mouth, throat and stomach. Ingestion of large doses of nitrates may cause dizziness, abdominal pain, vomiting, bloody diarrhea, weakness, convulsions and collapse. May cause methemoglobinemia, resulting in cyanosis.

Chronic: Individuals with pre-existing skin conditions and respiratory disorders may be more susceptible to the effects of this product. May cause methemoglobinemia, which is characterized by chocolate-brown colored blood, headache, weakness, dizziness, labored breathing, cyanosis (bluish skin due to deficient oxygenated blood), rapid heart rate, unconsciousness and possible death.

4.3 Indication of any immediate medical attention and special treatment needed

Advice to doctor and hospital personnel

Treat symptomatically and supportively. Absorption of this material into the body may cause cyanosis. Moderate degrees of cyanosis need to be treated only by supportive measures such as bed rest and oxygen inhalation. For methemoglobinemia, administer oxygen alone or with Methylene Blue depending on the methemoglobinemia concentration in the blood. Cleansing of the entire contaminated area of the body is of utmost importance.

SECTION 5 – FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable methods of extinction: Use extinguishing media suitable for the surrounding fire.

Unsuitable methods of extinction: No data available

5.2 Special hazards arising from the substance or mixture

Closed containers may explode due to the buildup of pressure when exposed to extreme heat. During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent or may be delayed. Obtain medical attention.

Explosion hazards: This material does not present an explosion hazard.

5.3 Advice to firefighters

Full protective equipment including self-contained breathing apparatus should be used. Water may be used to cool closed containers to prevent pressure buildup and possible autoignition or explosion when exposed to extreme heat. Water contaminated by this material must be contained from being discharged to any waterway, sewer or drain to prevent environmental contamination.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Evacuate non-essential personnel. Wear appropriate protective clothing and equipment designated in Section 8.2. Ventilate the area. Remove all sources of ignition. NO SMOKING. Clean up spills immediately.

6.2 Environmental precautions

Avoid dispersal of spilled material or runoff and prevent contact with soil and entry into drains, sewers or waterways.

6.3 Methods and materials for containment and cleaning up

Evacuate non-essential personnel. Cover drains and contain spill. DO NOT FLUSH SPILL DOWN THE DRAIN. Avoid dust generation during cleanup. Collect material and place into an approved container for proper disposal. Observe possible material restrictions (Sections 7.2 and 10.5). Clean contaminated area with soap and water. Do not allow material or runoff from rinsing contaminated areas to enter floor drains or storm drains and ditches that lead to waterways. Dispose of in accordance with federal, state and local regulations.

6.4 Reference to other sections

For indications about waste treatment, see Section 13.

SECTION 7 – STORAGE AND HANDLING

7.1 Precautions for safe handling

Wear all appropriate personal protective equipment specified in Section 8.2. Do not get in eyes or on skin or clothing. Do not inhale dust. NO SMOKING. If normal use of material presents a respiratory hazard, use only adequate ventilation or wear an appropriate respirator. Wash contaminated clothing and shoes before reuse.

Advice on protection against fire and explosion

This material is not expected to present a fire or explosion hazard.

7.2 Conditions for safe storage, including any incompatibilities

Store at $\leq 35\text{ }^{\circ}\text{C}$ ($\leq 95\text{ }^{\circ}\text{F}$) in dry, cool, well-ventilated areas away from incompatible materials (see Section 10.5), food and drink. Transfer only to approved containers having correct labeling. *Hygroscopic material!* Keep containers tightly closed when not in use to prevent moisture absorption. Protect containers against physical damage. Containers that have been opened must be carefully resealed and kept upright to prevent spillage. Containers are hazardous when empty as they contain product residues. Use appropriate containment to avoid environmental contamination. Ventilate closed areas. Keep out of reach of children.

7.3 Specific end uses

Apart from the uses mentioned in Section 1.2, no other specific uses are stipulated.

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Contains no substances with occupational exposure limit values.

NOTE: This material may contain materials classified as nuisance particulates, which may be present at hazardous levels. If no specific dusts are listed in Section 8, the applicable limits for unknown nuisance dusts are ACGIH TLV 10 mg/m^3 (total dust), 3 mg/m^3 (respirable fraction), OSHA PEL 15 mg/m^3 (total dust), and 5 mg/m^3 (respirable fraction).

8.2 Exposure controls

Engineering measures: Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. Use adequate ventilation. Local exhaust is preferable. Refer to Section 7.1.

Individual protection measures: Wear protective clothing to prevent repeated or prolonged contact with product. Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the representative supplier.

Hygiene measures: Facilities storing or using this material should be equipped with an eyewash station and safety shower. Change contaminated clothing. Preventive skin protection is recommended. Wash hands thoroughly after use, before eating, drinking, smoking or using the lavatory.

Eye/face protection: Wear safety glasses with unperforated side shields or protective splash goggles during use.

Hand protection: Wear Nitrile rubber gloves or those recommended by glove supplier for protection against materials in Section 3. Gloves should be impermeable to chemicals and oil. Breakthrough time of selected gloves must be greater than the intended use period.

Skin protection: Wear protective clothing. Wear protective boots if the situation requires.

Respiratory protection: None required with normal use. Where exposure to dusts may exceed the applicable exposure limits, a NIOSH respirator (N95 or better), or air purifying respirator equipped with a particulate filter or supplied air respirator should be used. The level of respiratory protection needed should be based on the evaluation of chemical exposures by a health or safety professional. Always use an approved respirator when vapor/aerosols/dusts exceed permissible exposure limits.

Environmental exposure controls: Do not empty into drains.

PPE must not be considered a long-term solution to exposure control. PPE usage must be accompanied by employer programs to properly select, maintain, clean fit and use. Consult a competent industrial hygiene resource to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.



SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	White, granular solid
Odor	Odorless
Odor Threshold	No data available
Molecular Weight	No data available
Chemical Formula	$(\text{Ca})_x(\text{NH}_3)_x\text{HNO}_3$
pH	5 - 7
Freezing/Melting Point	$117\text{ }^{\circ}\text{C}$ ($242\text{ }^{\circ}\text{F}$)
Boiling Point	$> 300\text{ }^{\circ}\text{C}$ ($> 572\text{ }^{\circ}\text{F}$)

Evaporation Rate	No data available
Flammability (solid, gas)	Non-flammable
Flash Point	Not applicable
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Lower Explosive Limit (LEL)	Not applicable
Upper Explosive Limit (UEL)	Not applicable
Vapor Pressure	No data available
Vapor Density	No data available
Relative Density	1.12
Viscosity	Not applicable
Solubility in Water	Soluble (316 kg/m ³) @ 20 °C
Partition Coefficient (n-octanol/water)	Not applicable
Oxidizing Properties	Not applicable
Explosive Properties	Not applicable
Volatiles by Weight @ 21 °C	No data available

9.2 Other Data

Density	1000 - 1200 kg/m ³ @ 20 °C
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SECTION 10 – STABILITY AND REACTIVITY

10.1 Reactivity

This material is stable under normal handling conditions and use.

10.2 Chemical Stability

This material is stable under recommended storage conditions. This material is hygroscopic (absorbs moisture from the air).

10.3 Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4 Conditions to avoid

Avoid contact with combustible/flammable and incompatible materials. Avoid dust generation and accumulation.

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

Thermal decomposition products include oxides of calcium and nitrogen oxides (NO_x).

SECTION 11 – TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute oral toxicity

LD₅₀, rat: 500 mg/kg

Acute inhalation toxicity

LC₅₀, rat: > 5 mg/l

Acute dermal toxicity

LD₅₀, rat: 2,000 - 5,000 mg/kg

Skin irritation

May cause skin irritation.

Eye irritation

Causes serious eye damage. Risk of blindness.

Sensitization

No data available

Carcinogenicity

No data available

Germ cell mutagenicity

No data available

Reproductive toxicity

No data available

Specific organ toxicity - single exposure

May cause respiratory irritation.

Specific organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

11.2 Further information

This product contains no substances present at levels greater than or equal to the 0.1% threshold (de minimis) that are identified as a probable, possible, potential or confirmed carcinogens by ACGIH, IARC, NTP or OSHA. No data is available regarding the mutagenicity or teratogenicity of this product, nor is there any available data that indicates that it causes adverse developmental or fertility effects.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12 - ECOLOGICAL INFORMATION

12.1 Toxicity

This substance is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Toxicity to aquatic invertebrates: EC₅₀ - Daphnia magna (Water flea), static test, 48 h: > 100 mg/l
Toxicity to aquatic plants: ErC₅₀ - Pseudokirchneriella subcapitata (Green algae), static test, 72 h: > 100 mg/l
Toxicity to bacteria: EC₅₀ - Activated sludge (Bacteria), 3 h: > 1,000 mg/l

12.2 Persistence and degradability

Inorganic substances are not biodegradable. Methods for the determination of biodegradability are not applicable to inorganic substances.

12.3 Bioaccumulation potential

This substance does not bioaccumulate.

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

The persistent, bioaccumulative or toxic (PBT) or very persistent and very bioaccumulative (vPvB) assessment does not apply to inorganic substances.

12.6 Other effects

Additional ecological information

Do not allow material to run into surface waters, wastewater or soil.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

SECTION 13 – DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Methods of disposal: The generation of waste should be avoided or minimized whenever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

RCRA F-Series: No listings above the reportable threshold (de minimis)

RCRA U-Series: No listings above the reportable threshold (de minimis)

SECTION 14 – TRANSPORTATION INFORMATION

Note: Transportation information provided is for reference only. Customer is urged to consult 49 CFR 100 - 177, IMDG, IATA, EC, United Nations TDG and WHMIS (Canada) TDG information manuals for detailed regulations and exceptions covering specific container sizes, packaging materials and methods of shipping.

USA DOT (Ground Transportation) - Bulk and Non-bulk	Not regulated for transport
IMO/IMDG (Water Transportation)	Not regulated for transport (Consult IMO regulations before transporting ocean bulk.)
ICAO/IATA (Air Transportation)	Not regulated for transport
RID/ADR (Rail Transportation)	Not regulated for transport

SECTION 15 - REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for substance or mixture

U. S. Federal Regulations

OSHA Hazard Communication Standard: This material is classified as hazardous in accordance with OSHA 29 CFR 1910-1200.

OSHA Process Safety Management Standard: This product is not regulated under OSHA PSM Standard 29 CFR 1910.119.

EPA Risk Management Planning Standard: This product is not regulated under EPA RMP Standard (RMP) 40 CFR Part 68.

EPA Federal Insecticide, Fungicide and Rodenticide Act: This product is not a registered Pesticide under the FIFRA, 40 CFR Part 150.

Toxic Substance Control Act (TSCA) Inventory: All substances in this product are listed on the TSCA Inventory. This product is not subject to

TSCA 12(b) Export Notification.

Drug Enforcement Administration (DEA) List 2, Essential Chemicals (21 CFR 1310.02(b)) and 1310.4(f)(2)) and Chemical Code Number
No listing

Drug Enforcement Administration (DEA) Lists 1 & 2, Exempt Chemical Mixtures (21 CFR 1310.12(c)) and Code Number: No listing

Department of Homeland Security (DHS) Chemical Facility Anti-Terrorism Standards (CFATS) Chemicals: No listing

Superfund Amendments and Reauthorization Act (SARA)

SARA Section 311/312 Hazard Categories: Harmful if swallowed and if inhaled Causes serious eye damage

SARA 313 Information: None of the components of this product subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to Know Act of 1986.

SARA 302/304 Extremely Hazardous Substance: None of the components of this product exceed the threshold (de minimis) reporting levels established by of these sections of Title III of SARA.

SARA 302/304 Emergency Planning & Notification: None of the components of this product exceed the threshold (de minimis) reporting levels established by of these sections of Title III of SARA.

Comprehensive Response Compensation and Liability Act (CERCLA): None of the components of this product exceed the threshold (de minimis) reporting levels for hazardous wastes established by CERCLA.

Clean Air Act (CAA)

This product does not contain Hazardous Air Pollutants (HAPs) designated in CAA Section 112 (b).

This product does not contain Class 1 Ozone depleters.

This product does not contain Class 2 Ozone depleters.

Clean Water Act (CWA)

This product does not contain Hazardous Substances.

This product does not contain Priority Pollutants.

This product does not contain Toxic Pollutants.

U.S. State Regulations

California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986

This product contains no chemical(s) known to the state of California to cause cancer birth defects or reproductive harm in concentrations that exceed the threshold (de minimis) reporting levels established under Proposition 65.

Other U.S. State Inventories

None of the components of this product exceed the threshold (de minimis) reporting levels established by any State Hazardous Substance Inventories, Right-to-Know lists and/or Air Quality/Air Pollutants lists.

Canada

WHMIS Hazard Classification: No data available

Canadian National Pollutant Release Inventory (NPRI): This substance is not listed on the NPRI.

European Economic Community

WGK, Germany (Water danger/protection): No data available

Global Chemical Inventory Lists

Country	Inventory Name	Listed
Canada	Domestic Substance List (DSL)	No
Canada	Non-Domestic Substance List (NDSL)	Yes
Europe	Inventory of New and Existing Chemicals (EINECS)	Yes
United States	Toxic Substance Control Act (TSCA)	Yes
Australia	Australian Inventory of Chemical Substances (AICS)	No
New Zealand	New Zealand Inventory of Chemicals (NZIoC)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (KECI)	Yes
Philippines	Philippines Inventory of Chemicals and Chemical Substances (PICCS)	No

*Yes - All components of this product comply with the inventory requirements administered by the governing country.

No - One or more components of this product are not on the inventory or are exempt from listing.

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

SECTION 16 - OTHER INFORMATION

Hazardous Material Information System (HMIS)

HEALTH	3
FLAMMABILITY	0
PHYSICAL HAZARD	0
PERSONAL PROTECTION	C

C = safety glasses, gloves
& apron

HMIS Hazard Rating Legend

0 = Minimal 1 = Slight 2 = Moderate

3 = Serious 4 = Severe

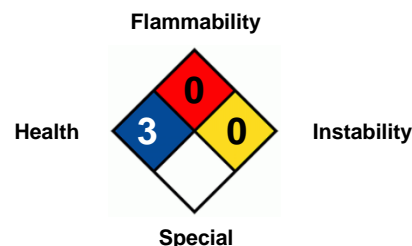
* = Chronic Health Hazard

NFPA Hazard Rating Legend

0 = Insignificant 1 = Slight 2 = Moderate

3 = High 4 = Extreme

National Fire Protection Association (NFPA)



Abbreviation Key

ACGIH	American Conference of Governmental Industrial Hygienists	LD₅₀	Lowest Lethal Dose
ADR	Accord Dangereux Routier (European regulations concerning the international transport of dangerous goods by road)	mppcf	Millions of Particles Per Cubic Foot
CAS	Chemical Abstract Services	NA	North America
CFR	Code of Federal Regulations	NAERG	North American Emergency Response Guide Book
COC	Cleveland Open Cup	NIOSH	National Institute for Occupational Safety & Health
DOT	Department of Transportation	NTP	National Toxicology Program
EC₅₀	Half maximal effective concentration	OSHA	Occupational Safety and Health Administration
EMS	Emergency Response Procedures for Ships Carrying	PBT	Persistent, Bioaccumulating and Toxic
EPA	Environmental Protection Agency	PEL	Permissible exposure limit
ErC₅₀	Reduction of Growth Rate	PMCC	Pensky-Martens Closed Cup
ERG	Emergency Response Guide Book	ppm	Parts Per Million
FDA	Food and Drug Administration	RCRA	Resource Conservation and Recovery Act
GHS	Globally Harmonized System of Classification and Labelling of Chemicals (GHS)	RID	Dangerous Goods by Rail
HCS	Hazard Communication Standard	RQ	Reportable Quantity
IARC	International Agency for Research on Cancer	TCC/Tag	Tagliabue Closed Cup
IATA	International Air Transport Association	TLV	Threshold Limit Value
IC₅₀	Half Maximal Inhibitory Concentration	TSCA	Toxic Substance Control Act
ICAO	International Civil Aviation Organization	TWA	Time-weighted Average
IDLH	Immediately Dangerous to Life and Health	UN	United Nations
IMDG	International Maritime Dangerous Goods	VOC	Volatile Organic Compounds
IMO	International Maritime Organization	vPvB	Very Persistent and Very Bioaccumulating
LC₅₀	50% Lethal Concentration	WHMIS	Workplace Hazardous Materials Information System
LD₅₀	50% Lethal Dose		

DISCLAIMER OF RESPONSIBILITY

The information on this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, expressed or implied, regarding its correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the substance itself. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume damage or expense arising out of or in any way responsibility and expressly disclaim liability for loss, connected with handling, storage, use, or disposal of this product. If the product is used as a component in another product, this SDS information may not be applicable.

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