

# Calcium Nitrate

## SECTION 1. IDENTIFICATION

**Product Identifier** Calcium Nitrate

**Recommended Use** Drilling Mud Additive.

**Supplier Identifier** AES Drilling Fluids, LLC, 11767 Katy Freeway, Suite 230, Houston, TX, 77079, Sales & Information, 281-556-5628

**Emergency Phone No.** AES Drilling Fluids, LLC, 1-888-556-4533

**Date of Preparation** February 12, 2016

## SECTION 2. HAZARD IDENTIFICATION

### Classification

Acute toxicity (Oral) - Category 4; Serious eye damage - Category 1

### Label Elements



Signal Word:

Danger

Hazard Statement(s):

H302 Harmful if swallowed.

H318 Causes serious eye damage.

Precautionary Statement(s):

Prevention:

P202 Do not handle until all safety precautions have been read and understood.

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

P264 Wash hands and skin thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTRE or doctor.

P330 Rinse mouth.

P331 Do NOT induce vomiting.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310 Immediately call a POISON CENTRE or doctor.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

Disposal:

P501 Dispose of contents and container in accordance with local, regional, national and international regulations.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

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Mixture:

Chemical Name	CAS No.	%	Other Identifiers
Calcium Nitrate	10124-37-5	60-100	
Ammonium nitrate	6484-52-2	5-10	

#### Notes

Concentrations are expressed in % weight/weight.

## SECTION 4. FIRST-AID MEASURES

### First-aid Measures

#### Inhalation

Remove source of exposure or move to fresh air. Keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms (e.g. coughing, shortness of breath, wheezing), call a Poison Centre or doctor. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by Poison Centre or doctor. If breathing has stopped, trained personnel should begin rescue breathing. Avoid mouth-to-mouth contact by using a barrier device. If the heart has stopped, trained personnel should start cardiopulmonary resuscitation (CPR) or automated external defibrillation (AED). Call a Poison Centre or doctor.

#### Skin Contact

Rinse with lukewarm, gently flowing water for 5 minutes. Take off contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Thoroughly clean clothing, shoes and leather goods before reuse or dispose of safely. Get medical advice or attention if you feel unwell or are concerned.

#### Eye Contact

Immediately rinse the contaminated eye(s) with lukewarm, gently flowing water for at least 30 minutes, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face. Seek immediate medical attention.

#### Ingestion

Immediately call a Poison Centre or doctor. Rinse mouth with water. Never give anything by mouth if person is rapidly losing consciousness, or is unconscious or convulsing. Do not induce vomiting. If vomiting occurs, have victim lean forward to reduce the risk of aspiration.

### Immediate Medical Attention and Special Treatment

#### Special Instructions

Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

## SECTION 5. FIRE-FIGHTING MEASURES

### Extinguishing Media

#### Suitable Extinguishing Media

Use flooding quantities of water spray or fog.

#### Unsuitable Extinguishing Media

DO NOT use carbon dioxide, or other agents that smother the flames. DO NOT use dry chemical fire extinguishing agents containing ammonium compounds (such as some A:B:C agents). DO NOT use steam or sand.

### Specific Hazards Arising from the Product

No specific fire or explosion hazard.

Oxides of nitrogen.

### Special Protective Equipment and Precautions for Fire-fighters

Evacuate area. Firefighters should wear appropriate breathing apparatus and protective clothing. Fight fire from a protected, explosion-resistant location or maximum distance possible. Stop leak before attempting to put out the fire. Product could form an explosive mixture and reignite. Containers may rupture from gas generation in a fire situation. Use water spray only to cool fully closed containers. This product when large amounts of water is used and in extreme fire conditions, may form a floating fire hazard. Before entry, especially into confined areas, use an appropriate monitor

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to check for: toxic gases or vapours. Dike and recover contaminated water for appropriate disposal.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

### Personal Precautions, Protective Equipment, and Emergency Procedures

Evacuate the area immediately. Isolate the hazard area. Keep out unnecessary and unprotected personnel. Do not touch damaged containers or spilled product unless wearing appropriate protective equipment. Use the personal protective equipment recommended in Section 8 of this safety data sheet. Increase ventilation to area or move leaking container to a well-ventilated and secure area. Remove or isolate incompatible materials as well as other hazardous materials. Isolate spill or leak area with inert material. Before entry, especially into confined areas, check atmosphere with an appropriate monitor.

### Environmental Precautions

If the spill is inside a building, prevent product from entering drains, ventilation systems and confined areas. Prevent product from entering drains, soil, ditches, sewers, waterways and/or groundwater.

### Methods and Materials for Containment and Cleaning Up

Small spills or leaks: collect using shovel/scoop or approved HEPA vacuum and place in a suitable container for disposal.

Large spills or leaks: isolate the spill area and restrict access. Approach release from upwind. Collect using shovel/scoop or approved HEPA vacuum and place in a suitable container for disposal.

### Other Information

Contact EH&S regarding spill as spills of certain products and certain quantities may require reporting to various authorities.

## SECTION 7. HANDLING AND STORAGE

### Precautions for Safe Handling

Do not breathe in this product. Do not get in eyes, on skin or on clothing. Wear personal protective equipment to avoid direct contact with this chemical. Do not ingest product. Only use where there is adequate ventilation. Avoid generating dusts. Prevent uncontrolled release of product. Avoid release to the environment. Immediately report leaks, spills or failures of the safety equipment (e.g. ventilation system). In the event of a spill or leak, exit the area immediately. Keep containers tightly closed when not in use or empty. Do not puncture or incinerate container even when empty. Do NOT eat, drink or store food in work areas. Do NOT smoke in work areas. Avoid repeated or prolonged skin contact with product or with contaminated equipment/surfaces. Remove contaminated clothing and protective equipment before entering eating areas or leaving work area. Wash hands thoroughly after handling this product and before eating, using the washroom or leaving work area. Immediately remove contaminated clothing using the method that minimizes exposure. Thoroughly clean clothing, shoes and leather goods before reuse or dispose of safely. Launder clothes before re-wearing. Inform laundry personnel of product hazard(s).

### Conditions for Safe Storage

Store in an area that is: cool, temperature-controlled, dry, well-ventilated, separate from incompatible materials (see Section 10: Stability and Reactivity). Store in a closed container. No smoking around storage area. Restrict access to authorized personnel only. Storage containers should be located in a contained area to control any spills or leaks. Empty containers may contain hazardous residue. Store separately. Keep closed. Follow all precautions given on this safety data sheet.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Control Parameters

Chemical Name	ACGIH® TLV®		Alberta		SASK	
	TWA	STEL [C]	OEL	STEL	OEL	STEL
Calcium Nitrate	Not established	Not established	Not established	Not established	Not established	Not established
Ammonium nitrate	Not established	Not established	Not established	Not established	Not established	Not established

ACGIH® = American Conference of Governmental Industrial Hygienists. TLV® = Threshold Limit Value. TWA = Time-Weighted Average. STEL = Short-term Exposure Limit. OEL = Occupational Exposure Limit.

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### Appropriate Engineering Controls

General ventilation is usually adequate. An eyewash and safety shower should be within acceptable distance to the work area. While handling product do not eat or drink, wash hands before breaks and at the end of workday.

### Individual Protection Measures

#### Eye/Face Protection

Wear chemical safety goggles. Wear chemical safety goggles and face shield when contact is possible.

#### Skin Protection

Wear gloves with appropriate chemical resistance, see manufacturers specifications for suitability.

#### Respiratory Protection

If conditions exist above the OEL wear a NIOSH approved particulate respiratory equipped with an N95, R95, or P95 filter.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

### Basic Physical and Chemical Properties

<b>Appearance</b>	White.
<b>Odour</b>	Odourless
<b>Odour Threshold</b>	Not available
<b>pH</b>	6.3 (saturated solution)
<b>Melting Point/Freezing Point</b>	400 °C (752 °F) (melting); Not available (freezing)
<b>Initial Boiling Point/Range</b>	Not available
<b>Flash Point</b>	Not available
<b>Evaporation Rate</b>	Not available
<b>Upper/Lower Flammability or Explosive Limit</b>	Not available (upper); Not available (lower)
<b>Vapour Pressure</b>	Not available
<b>Vapour Density (air = 1)</b>	Not available
<b>Relative Density (water = 1)</b>	Not available
<b>Solubility</b>	Soluble in water; Not available (in other liquids)
<b>Partition Coefficient, n-Octanol/Water (Log Kow)</b>	Not available
<b>Auto-ignition Temperature</b>	Not available
<b>Decomposition Temperature</b>	Not available
<b>Other Information</b>	
<b>Physical State</b>	Solid
<b>Bulk Density</b>	1.10 kg/m <sup>3</sup>

## SECTION 10. STABILITY AND REACTIVITY

### Reactivity

Not reactive under normal conditions of use.

### Chemical Stability

Stable under normal conditions.

### Possibility of Hazardous Reactions

None expected under normal conditions of storage and use.

### Conditions to Avoid

Contamination by any source including metals, dust, and organic materials.

### Incompatible Materials

Acids and alkalis. Combustible materials. Reducing materials. Organic materials.

### Hazardous Decomposition Products

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Oxides of nitrogen.

## SECTION 11. TOXICOLOGICAL INFORMATION

### Likely Routes of Exposure

Eye contact; ingestion.

### Acute Toxicity

Chemical Name	LC50	LD50 (oral)	LD50 (dermal)
Calcium Nitrate	Not available	500 mg/kg (rat)	> 2000 mg/kg (rabbit)
Ammonium nitrate	> 88.8 mg/L (rat) (4-hour exposure)	2217 mg/kg (rat)	> 5000 mg/kg (rabbit)

Not toxic by inhalation according to ATEmix calculation

Oral ATEmix = 607.86 mg/kg

All the ingredients of the mixture have unknown acute toxicity (oral)

Not toxic by skin contact according to ATEmix calculation

### Skin Corrosion/Irritation

May cause mild irritation based on information for closely related chemicals.

### Serious Eye Damage/Irritation

Corrosive. Contact causes severe burns with redness, swelling, pain and blurred vision. Permanent damage including blindness can result.

### STOT (Specific Target Organ Toxicity) - Single Exposure

#### Inhalation

No known significant effects or critical hazards.

#### Skin Absorption

No information was located.

#### Ingestion

May be harmful if ingested.

### Aspiration Hazard

No information was located.

### STOT (Specific Target Organ Toxicity) - Repeated Exposure

No information was located.

### Respiratory and/or Skin Sensitization

Not known to be a respiratory sensitizer. Not known to be a skin sensitizer.

### Carcinogenicity

Chemical Name	IARC	ACGIH®	NTP	OSHA
Calcium Nitrate	Not Listed	Not Listed	Not Listed	Not Listed
Ammonium nitrate	Not Listed	Not Listed	Not Listed	Not Listed

Not known to cause cancer.

Key to Abbreviations

IARC = International Agency for Research on Cancer.

ACGIH® = American Conference of Governmental Industrial Hygienists.

NTP = National Toxicology Program.

OSHA = US Occupational Safety and Health Administration.

### Reproductive Toxicity

#### Development of Offspring

No information was located.

#### Sexual Function and Fertility

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Conclusions cannot be drawn from the limited studies available.

**Effects on or via Lactation**

No information was located.

**Germ Cell Mutagenicity**

No information was located.

**SECTION 12. ECOLOGICAL INFORMATION**

Do not allow product to contaminate domestic or irrigation water supplies, lakes, streams, ponds or rivers. No known significant effects or critical hazards.

**Ecotoxicity**

No information was located.

**Acute Aquatic Toxicity**

Chemical Name	LC50 Fish	EC50 Crustacea	ErC50 Aquatic Plants	ErC50 Algae
Calcium Nitrate	1378 mg/L (96-hour; fresh water)	490 mg/L (Daphnia magna (water flea); 48-hour; fresh water)	Not available	Not available
Ammonium nitrate	447 mg/L (48-hour; fresh water)	490 mg/L (48-hour)	Not available	Not available

**Persistence and Degradability**

No information was located.

**Bioaccumulative Potential**

No information was located.

**Mobility in Soil**

No information was located.

**SECTION 13. DISPOSAL CONSIDERATIONS**

**Disposal Methods**

This product and its container must be disposed of as hazardous waste. Do NOT dump into any sewers, on the ground or into any body of water. Dispose of unused product in accordance with local environmental and public health regulations. Empty containers retain product residue. Follow label warnings even if container appears to be empty. Dispose of or recycle empty containers through an approved waste management facility.

**SECTION 14. TRANSPORT INFORMATION**

Not regulated under Canadian TDG regulations. Not regulated under US DOT Regulations.

**Special Precautions** Not applicable

**Transport in Bulk According to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable

**SECTION 15. REGULATORY INFORMATION**

**Safety, Health and Environmental Regulations**

**Canada**

**Domestic Substances List (DSL) / Non-Domestic Substances List (NDSL)**

All ingredients are listed on the DSL or are not required to be listed.

**USA**

**Toxic Substances Control Act (TSCA) Section 8(b)**

All ingredients are exempt from TSCA Inventory requirements.

**Additional USA Regulatory Lists**

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SARA Title III - Section 302: None  
SARA Title III - Section 311/312: Immediate Health Hazard  
SARA Title III - Section 313: None.

## SECTION 16. OTHER INFORMATION

**NFPA Rating**                      **Health - 2**    **Flammability - 0**                      **Instability - 0**

**SDS Prepared By**                      HSE Department

**Phone No.**                                      403-269-2800

**Date of Preparation**                      February 12, 2016

**Disclaimer**                                      Do not handle or use until precautions on MSDS are read and understood. The information on this form is furnished solely for the purpose of enabling those who transport, handle or use our products to ensure the safety and health of their employees and to comply with various laws and regulations (federal, state and local). We believe the statements, technical information and recommendations contained herein are reliable but, they are given without warranty or guarantee of any kind, express or implied and we assume no responsibility for any loss, damage, direct or consequential, arising out of their use.

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