



# SAFETY DATA SHEET

Product Trade Name:

**CALCIUM NITRATE, SATURATED SOLUTION**

Revision Date: 09-Apr-2015

Revision Number: 10

## 1. Identification

### 1.1. Product Identifier

**Product Trade Name:** CALCIUM NITRATE, SATURATED SOLUTION  
**Synonyms** None  
**Chemical Family:** Nitrate  
**Internal ID Code** HM003970

### 1.2 Recommended use and restrictions on use

**Application:** Reagent  
**Uses advised against** No information available

### 1.3 Manufacturer's Name and Contact Details

#### Manufacturer/Supplier

Fann Instrument Company  
A Halliburton Energy Services, Inc. Company  
P.O. Box 4350  
Houston, TX 77210  
Telephone: (281) 871-4482

Halliburton Group Canada  
645 - 7th Ave SW Suite 1800  
Calgary, AB, T2P 4G8, Canada  
Telephone: 1-403-231-9300

**Prepared By** Chemical Stewardship  
e-mail: fdunexchem@halliburton.com

### 1.4. Emergency telephone number:

**Emergency Telephone Number** 1-866-519-4752 or 1-760-476-3962 (accessible 24 hours a day / 7 days a week)  
Global Incident Response Access Code: 334305  
Contract Number: 14012

## 2. Hazards Identification

### 2.1 Classification in accordance with paragraph (d) of §1910.1200

|                                      |                   |
|--------------------------------------|-------------------|
| Acute Oral Toxicity                  | Category 4 - H302 |
| Serious Eye Damage/Irritation        | Category 1 - H318 |
| Oxidizing liquids. Oxidizing solids. | Category 3 - H272 |

### 2.2. Label Elements

**Hazard Pictograms**



**Signal Word:** Danger

**Hazard Statements**  
 H272 - May intensify fire; oxidizer  
 H302 - Harmful if swallowed  
 H318 - Causes serious eye damage

**Precautionary Statements**

**Prevention**  
 P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
 P220 - Keep/Store away from clothing/other combustible materials  
 P221 - Take any precaution to avoid mixing with combustibles  
 P264 - Wash face, hands and any exposed skin thoroughly after handling  
 P270 - Do not eat, drink or smoke when using this product  
 P280 - Wear protective gloves/eye protection/face protection  
 P280 - Wear eye protection/face protection

**Response**  
 P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell  
 P330 - Rinse mouth  
 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 CENTER or doctor/physician  
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

**Storage**  
 None

**Disposal**  
 P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

**2.3 Hazards not otherwise classified**  
 None known

**3. Composition/information on Ingredients**

| Substances      | CAS Number | PERCENT (w/w) | GHS Classification - US  |
|-----------------|------------|---------------|--|
| Calcium nitrate | 10124-37-5 | 30 - 60%      | Acute Tox. 4 (H302)<br>Eye Corr. 1 (H318)<br>Ox. Sol. 3 (H272) |

The exact percentage (concentration) of the composition has been withheld as proprietary.

## 4. First Aid Measures

### 4.1. Description of first aid measures

|                   |   |
|-------------------|---|
| <b>Inhalation</b> | If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.  |
| <b>Eyes</b>       | In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.             |
| <b>Skin</b>       | Wash with soap and water. Get medical attention if irritation persists. Remove contaminated clothing and launder before reuse.  |
| <b>Ingestion</b>  | If swallowed, induce vomiting immediately by giving two glasses of water and sticking fingers down throat; never give anything to an unconscious person. Get medical attention. |

### 4.2 Most important symptoms/effects, acute and delayed

Causes severe eye irritation which may damage tissue. Harmful if swallowed.

### 4.3. Indication of any immediate medical attention and special treatment needed

**Notes to Physician** Treat symptomatically.

## 5. Fire-fighting measures

### 5.1. Extinguishing media

#### Suitable Extinguishing Media

Water fog, carbon dioxide, foam, dry chemical.

#### Extinguishing media which must not be used for safety reasons

None known.

### 5.2 Specific hazards arising from the substance or mixture

#### Special exposure hazards in a fire

Product is not expected to burn unless all the water is boiled away. Use water spray to cool fire exposed surfaces.

### 5.3 Special protective equipment and precautions for fire-fighters

#### Special protective equipment for firefighters

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

## 6. Accidental release measures

### 6.1. Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment.  
See Section 8 for additional information.

### 6.2. Environmental precautions

Prevent from entering sewers, waterways, or low areas.

### 6.3. Methods and material for containment and cleaning up

Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

## 7. Handling and storage

### 7.1. Precautions for safe handling

#### Handling Precautions

Avoid contact with eyes, skin, or clothing. Do not allow product to dry. Dry material is an oxidizer.

#### Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

**7.2. Conditions for safe storage, including any incompatibilities**

**Storage Information**

Keep container closed when not in use.

**8. Exposure Controls/Personal Protection**

**8.1 Occupational Exposure Limits**

| Substances      | CAS Number | OSHA PEL-TWA   | ACGIH TLV-TWA  |
|-----------------|------------|----------------|----------------|
| Calcium nitrate | 10124-37-5 | Not applicable | Not applicable |

**8.2 Appropriate engineering controls**

**Engineering Controls** Use in a well ventilated area.

**8.3 Individual protection measures, such as personal protective equipment**

**Personal Protective Equipment** If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

**Respiratory Protection** Not normally needed. But if significant exposures are possible then the following respirator is recommended:

Dust/mist respirator. (N95, P2/P3)

**Hand Protection** Impervious rubber gloves.

**Skin Protection** Rubber apron.

**Eye Protection** Chemical goggles; also wear a face shield if splashing hazard exists.

**Other Precautions** Eyewash fountains and safety showers must be easily accessible.

**9. Physical and Chemical Properties**

**9.1. Information on basic physical and chemical properties**

|                               |                   |                          |
|-------------------------------|-------------------|--------------------------|
| <b>Physical State:</b> Liquid | <b>Color</b>      | Colorless                |
| <b>Odor:</b> Odorless         | <b>Odor</b>       | No information available |
|                               | <b>Threshold:</b> |                          |

| <u>Property</u>                               | <u>Values</u>            |
|---|--------------------------|
| Remarks/ - Method                             |                          |
| <b>pH:</b>                                    | 5.5-7                    |
| <b>Freezing Point / Range</b>                 | 0 °C / 32 °F             |
| <b>Melting Point / Range</b>                  | No data available        |
| <b>Pour Point / Range</b>                     | No data available        |
| <b>Boiling Point / Range</b>                  | 106 °C / 223 °F          |
| <b>Flash Point</b>                            | No data available        |
| <b>Flammability (solid, gas)</b>              | No data available        |
| <b>Upper flammability limit</b>               | No data available        |
| <b>Lower flammability limit</b>               | No data available        |
| <b>Evaporation rate</b>                       | No data available        |
| <b>Vapor Pressure</b>                         | No data available        |
| <b>Vapor Density</b>                          | No data available        |
| <b>Specific Gravity</b>                       | 1.49                     |
| <b>Water Solubility</b>                       | Soluble in water         |
| <b>Solubility in other solvents</b>           | No data available        |
| <b>Partition coefficient: n-octanol/water</b> | No data available        |
| <b>Autoignition Temperature</b>               | No data available        |
| <b>Decomposition Temperature</b>              | No data available        |
| <b>Viscosity</b>                              | No data available        |
| <b>Explosive Properties</b>                   | No information available |

**Oxidizing Properties** No information available

**9.2. Other information**

**VOC Content (%)** No data available

**10. Stability and Reactivity**

**10.1. Reactivity**  
Not expected to be reactive.

**10.2. Chemical stability**  
Stable

**10.3. Possibility of hazardous reactions**  
Will Not Occur

**10.4. Conditions to avoid**  
Hazards increase greatly if material is allowed to dry.

**10.5. Incompatible materials**  
None known.

**10.6. Hazardous decomposition products**  
Oxides of nitrogen.

**11. Toxicological Information**

**11.1 Information on likely routes of exposure**  
Principle Route of Exposure Eye or skin contact, inhalation.

**11.2 Symptoms related to the physical, chemical and toxicological characteristics**

**Acute Toxicity**

- Inhalation** May cause mild respiratory irritation.
- Eye Contact** Causes severe eye irritation which may damage tissue.
- Skin Contact** Not irritating to skin in rabbits.
- Ingestion** Irritation of the mouth, throat, and stomach. May cause headache, dizziness, vomiting, and cramps.

**Chronic Effects/Carcinogenicity** No data available to indicate product or components present at greater than 0.1% are chronic health hazards.

**11.3 Toxicity data**

**Toxicology data for the components**

| Substances      | CAS Number | LD50 Oral       | LD50 Dermal                          | LC50 Inhalation                         |
|-----------------|------------|-----------------|--------------------------------------|---|
| Calcium nitrate | 10124-37-5 | 302 mg/kg (Rat) | 5000 mg/kg (Rat) (Similar substance) | 0.527 mg/L (Rat) 4h (Similar substance) |

| Substances      | CAS Number | Skin corrosion/irritation                                |
|-----------------|------------|--|
| Calcium nitrate | 10124-37-5 | Not expected to be a skin irritant. (similar substances) |

| Substances      | CAS Number | Serious eye damage/irritation         |
|-----------------|------------|---------------------------------------|
| Calcium nitrate | 10124-37-5 | Causes eye burns (similar substances) |

| Substances      | CAS Number | Skin Sensitization   |
|-----------------|------------|--|
| Calcium nitrate | 10124-37-5 | Did not cause sensitization on laboratory animals (mouse) (similar substances) |

| Substances      | CAS Number | Respiratory Sensitization  |
|-----------------|------------|--|
| Calcium nitrate | 10124-37-5 | No information available   |
| Substances      | CAS Number | Mutagenic Effects  |
| Calcium nitrate | 10124-37-5 | In vitro tests did not show mutagenic effects. In vivo tests did not show mutagenic effects. (similar substances)                  |
| Substances      | CAS Number | Carcinogenic Effects   |
| Calcium nitrate | 10124-37-5 | Did not show carcinogenic effects in animal experiments (similar substances)   |
| Substances      | CAS Number | Reproductive toxicity  |
| Calcium nitrate | 10124-37-5 | Animal testing did not show any effects on fertility. Did not show teratogenic effects in animal experiments. (similar substances) |
| Substances      | CAS Number | STOT - single exposure   |
| Calcium nitrate | 10124-37-5 | No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)                 |
| Substances      | CAS Number | STOT - repeated exposure   |
| Calcium nitrate | 10124-37-5 | No significant toxicity observed in animal studies at concentration requiring classification. (similar substances)                 |
| Substances      | CAS Number | Aspiration hazard  |
| Calcium nitrate | 10124-37-5 | No information available   |

**12. Ecological Information**

**12.1. Toxicity**

**Substance Ecotoxicity Data**

| Substances      | CAS Number | Toxicity to Algae        | Toxicity to Fish                           | Toxicity to Microorganisms               | Toxicity to Invertebrates            |
|-----------------|------------|--------------------------|--|--|--------------------------------------|
| Calcium nitrate | 10124-37-5 | No information available | LC50 (96h) 1658 mg/L (Oncorhynchus mykiss) | EC50 (3h) > 1000 mg/L (Activated sludge) | EC50 (24h) 8609 mg/L (Daphnia magna) |

**12.2. Persistence and degradability**

| Substances      | CAS Number | Persistence and Degradability |
|-----------------|------------|-------------------------------|
| Calcium nitrate | 10124-37-5 | No information available      |

**12.3. Bioaccumulative potential**

| Substances      | CAS Number | Bioaccumulation          |
|-----------------|------------|--------------------------|
| Calcium nitrate | 10124-37-5 | No information available |

**12.4. Mobility in soil**

| Substances      | CAS Number | Mobility                 |
|-----------------|------------|--------------------------|
| Calcium nitrate | 10124-37-5 | No information available |

**12.5 Other adverse effects**

No information available

**13. Disposal Considerations**

**13.1. Waste treatment methods**

**Disposal methods** Disposal should be made in accordance with federal, state, and local regulations.  
**Contaminated Packaging** Follow all applicable national or local regulations.

**14. Transport Information**

**US DOT**

UN Number UN3139  
 UN proper shipping name: Oxidizing Liquid, N.O.S. (Contains Calcium Nitrate)  
 Transport Hazard Class(es): 5.1  
 Packing Group: III  
 Environmental Hazards: Not applicable

**Canadian TDG**

UN Number UN3139  
 UN proper shipping name: Oxidizing Liquid, N.O.S. (Contains Calcium Nitrate)  
 Transport Hazard Class(es): 5.1  
 Packing Group: III  
 Environmental Hazards: Not applicable

**IMDG/IMO**

UN Number UN3139  
 UN proper shipping name: Oxidizing Liquid, N.O.S. (Contains Calcium Nitrate)  
 Transport Hazard Class(es): 5.1  
 Packing Group: III  
 Environmental Hazards: Not applicable

**IATA/ICAO**

UN Number UN3139  
 UN proper shipping name: Oxidizing Liquid, N.O.S. (Contains Calcium Nitrate)  
 Transport Hazard Class(es): 5.1  
 Packing Group: III  
 Environmental Hazards: Not applicable

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not applicable

**Special Precautions for User** None

**15. Regulatory Information**

**US Regulations**

**US TSCA Inventory** All components listed on inventory or are exempt.

**TSCA Significant New Use Rules - S5A2**

| Substances      | CAS Number | TSCA Significant New Use Rules - S5A2 | TSCA Section 5(E) Consent Orders |
|-----------------|------------|---------------------------------------|----------------------------------|
| Calcium nitrate | 10124-37-5 | Not applicable                        | Not applicable                   |

**EPA SARA Title III Extremely Hazardous Substances**

| Substances      | CAS Number | EPA SARA Title III Extremely Hazardous Substances |
|-----------------|------------|---|
| Calcium nitrate | 10124-37-5 | Not applicable                                    |

**EPA SARA (311,312) Hazard Class**

Oxidizer (liquid, solid or gas)  
 Acute toxicity (any route of exposure)  
 Serious eye damage or eye irritation

**EPA SARA (313) Chemicals:**

| Substances | CAS Number | Toxic Release Inventory (TRI) - | Toxic Release Inventory (TRI) - |
|------------|------------|---------------------------------|---------------------------------|
|------------|------------|---------------------------------|---------------------------------|

|                 |            | Group I | Group II       |
|-----------------|------------|---------|----------------|
| Calcium nitrate | 10124-37-5 | 1.0%    | Not applicable |

**EPA CERCLA/Superfund Reportable Spill Quantity**

| Substances      | CAS Number | CERCLA RQ      |
|-----------------|------------|----------------|
| Calcium nitrate | 10124-37-5 | Not applicable |

**EPA RCRA Hazardous Waste Classification**

If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.

**California Proposition 65**

| Substances      | CAS Number | California Proposition 65 |
|-----------------|------------|---------------------------|
| Calcium nitrate | 10124-37-5 | Not applicable            |

**U.S. State Right-to-Know Regulations**

| Substances      | CAS Number | MA Right-to-Know Law | NJ Right-to-Know Law | PA Right-to-Know Law |
|-----------------|------------|----------------------|----------------------|----------------------|
| Calcium nitrate | 10124-37-5 | Not applicable       | Present              | Not applicable       |

**Canadian Regulations**

**Canadian Domestic Substances List (DSL)** All components listed on inventory or are exempt.

**16. Other information****Preparation Information**

**Prepared By** Chemical Stewardship  
e-mail: fdunexchem@halliburton.com

**Revision Date:** 09-Apr-2015

**Reason for Revision** Update to Format  
SECTION:  
2

**Additional information:**

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

**NFPA Ratings:** Health 1, Flammability 0, Reactivity 1

**HMIS Ratings:** Health 1, Flammability 0, Reactivity 1

**Key or legend to abbreviations and acronyms used in the safety data sheet**

bw – body weight

CAS – Chemical Abstracts Service

d - day

EC50 – Effective Concentration 50%

ErC50 – Effective Concentration growth rate 50%

h - hour

LC50 – Lethal Concentration 50%

LD50 – Lethal Dose 50%

LL50 – Lethal Loading 50%

mg/kg – milligram/kilogram

mg/L – milligram/liter

mg/m<sup>3</sup> - milligram/cubic meter



mm - millimeter  
mmHg - millimeter mercury  
NIOSH – National Institute for Occupational Safety and Health  
NTP – National Toxicology Program  
OEL – Occupational Exposure Limit  
PEL – Permissible Exposure Limit  
ppm – parts per million  
STEL – Short Term Exposure Limit  
TWA – Time-Weighted Average  
UN – United Nations  
w/w - weight/weight

**Key literature references and sources for data**

[www.ChemADVISOR.com/](http://www.ChemADVISOR.com/)

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**End of Safety Data Sheet**