Calcium Nitrate

I. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Calcium Nitrate
Chemical Family: Double salt of calcium nitrate and ammonium nitrate.
Product Use: Drilling mud additive

Date Revised: 7/2010

Supplier:

NOV FluidControl
4310 N. Sam Houston Parkway E
Houston, TX 77032
Office: (713) 482-0500
Fax: (713) 482-0695
Company website: www.nov.com

Emergency Telephone Number:
CHEMTREC: 1-800-424-9300 or International +1-703-527-3887

II. HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Not a Controlled Product

Physical State: Solid

Emergency overview: CAUTION! MAY BE HARMFUL IF SWALLOWED. MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION. Do not ingest. Wash thoroughly after handling.

Potential acute health effects:
Eyes: Slightly irritating to the eyes
Skin: Slightly irritating to the skin
Inhalation: Slightly irritating to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Ingestion: Harmful if swallowed

Potential chronic health effects
Chronic effects: No known significant effects or critical hazards
Carcinogenic effects: No known significant effects or critical hazards.
Mutagenic effects: No known significant effects or critical hazards.
Teratogenicity: No known significant effects or critical hazards.
Developmental effects: No known significant effects or critical hazards.
Fertility effects: No known significant effects or critical hazards.

Over-exposure signs/symptoms
Inhalation: Adverse symptoms may include the following: respiratory tract irritation, coughing
Ingestion: No specific data.
Skin: Adverse symptoms may include the following: irritation, redness
Eyes: Adverse symptoms may include the following: irritation, watering, redness
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III. COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Hazardous Components:</th>
<th>CAS Number:</th>
<th>Percent:</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Hazardous ingredients</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additions Info:
Contains plant nutrients
Hydrated Ammonium Calcium Nitrate Double Salt 15245-12-2

IV. FIRST AID MEASURES

**Eye Contact:** Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

**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 reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

**Inhalation:** Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

**Ingestion:** Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

**Protection of first-aiders:** No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

**Notes to physician:** 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.

V. FIRE FIGHTING MEASURES

**Flammability of the product:** May be combustible at high temperature

**Extinguishing media**

**Suitable:** Use an extinguishing agent suitable for the surrounding fire.

**Products of combustion:** These products are: nitrogen oxides, metal oxide/oxides

**Fire-fighting media and instructions:** Use water only in flooding quantities to fight the fire. Do NOT use chemical extinguisher or foam or attempt to smother the fire with steam or sand.

**Special protective equipment for fire-fighters:** Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

**Hazardous thermal decomposition products:** These products are: nitrogen oxides (NO, NO2 etc.)
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VI. ACCIDENTAL RELEASE MEASURES

Personal precautions: No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up:
Small Spill: Material free from contamination can be used for its original purpose. Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large Spill: Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

VII. HANDLING & STORAGE

Handling: Avoid creating dusty conditions and prevent wind dispersal. Avoid all possible sources of ignition (spark or flame). Avoid contamination by any source including metals, dust and organic materials.

Storage: Store and use away from heat, sparks, open flame or any other ignition source. Avoid contact with combustible materials. Prevent moisture pick-up in handling and storage.

VIII. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Measures: Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Hygiene Measures: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure eyewash facilities are located close to the working environment.

Personal Protection

Eyes: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Skin: Personal protective equipment for the body should be selected based on the task being performed and the risks involved.

Respiratory: Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

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**IX. PHYSICAL AND CHEMICAL PROPERTIES**

- **Physical State:** Solid
- **Color:** White or Yellowish
- **Odor:** Odorless
- **pH:** 5 to 7 [Conc. (% w/w): 10%]
- **Boiling/condensation point:** 310°C (590°F)
- **Melting/freezing point:** 94 to 98°C (201.2 to 208.4°F)
- **Density (g/cm³):** 1 g/cm³
- **Solubility:** Soluble in the following material: cold water

**X. STABILITY & REACTIVITY DATA**

- **Stability & Reactivity:** Stable under recommended storage and handling conditions.
- **Possibility of Hazardous Reactions:** Under normal conditions of storage and use, hazardous reactions will not occur.
- **Incompatibility with Various Substances:** Reactive or incompatible with the following materials: combustible materials, acids and alkalis.
- **Hazardous Decomposition Products:** Under normal conditions of storage and use, hazardous decomposition products will not be produced.
- **Hazardous Thermal Decomposition Products:** These products are: nitrogen oxides (NO, NO₂ etc.)
- **Hazardous Polymerization:** Under normal conditions of storage and use, hazardous polymerization will not occur.

**XI. TOXICOLOGICAL INFORMATION**

**Potential acute health effects**

- **Inhalation:** Slightly irritating to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- **Ingestion:** Harmful if swallowed.
- **Skin contact:** Slightly irritating to the skin.
- **Eyes:** Slightly irritating to the eyes.

<table>
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<tr>
<th>Product/Ingredient Name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
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<tr>
<td>Preparation</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;2100 mg/kg</td>
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</table>

**XII. ECOLOGICAL INFORMATION**

**Environmental effects:** No known significant effects or critical hazards.

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<tr>
<th>Aquatic ecotoxicity</th>
<th>Test</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
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<tbody>
<tr>
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<td></td>
<td>Acute LC50 &gt;100</td>
<td>Fish</td>
<td>96 Hours</td>
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</tbody>
</table>

**Conclusion/Summary:** Not available.

**Biodegradability**

**Conclusion/Summary:** The product does not show any bioaccumulation phenomena.
XII. DISPOSAL CONSIDERATIONS

Waste Disposal: The generation of waste should be avoided or minimized wherever 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 byproducts should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Consult your local or regional authorities.

Refer to HANDLING AND STORAGE and EXPOSURE CONTROLS/PERSOAL PROTECTION for additional handling information and protection of individuals.

XIV. TRANSPORTATION INFORMATION

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<th>Regulatory Information</th>
<th>UN Number</th>
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<th>Packing Group</th>
<th>Label</th>
<th>Additional Information</th>
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</table>

Remark: Not a DOT regulated material. 49 CFR 172.102 Special Provision 34 specifically removes the commercial grade calcium nitrate double salt (calcium nitrate and ammonium nitrate) from the Hazardous Materials Table 49 CFR 172.101.

XV. REGULATORY INFORMATION

HCS Classification: Not Regulated.

U.S. Federal regulations:
- SARA 302/304/311/312 extremely hazardous substances: No products were found.
- SARA 302/304 emergency planning and notification: No products were found.
- SARA 302/304/311/312 hazardous chemicals: No products were found.
- SARA 311/312 MSDS distribution - chemical inventory - hazard identification: No products were found.
- Clean Water Act (CWA) 307: No products were found.
- Clean Water Act (CWA) 311: No products were found.
- Clean Air Act (CAA) 112 accidental release prevention: No products were found.
- Clean Air Act (CAA) 112 regulated flammable substances: No products were found.
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REGULATORY INFORMATION CONTINUED

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs): Not listed
Clean Air Act Section 602 Class I Substances: Not listed
Clean Air Act Section 602 Class II Substances: Not listed
DEA List I Chemicals (Precursor Chemicals): Not listed
DEA List II Chemicals (Essential Chemicals): Not listed

State Regulations:

Clean Air Act (CAA) 112 regulated toxic substances: No products were found.
Connecticut Carcinogen Reporting: None of the components are listed.
Connecticut Hazardous Material Survey: None of the components are listed.
Florida substances: None of the components are listed.
Illinois Chemical Safety Act: None of the components are listed.
Illinois Toxic Substances Disclosure to Employee Act: None of the components are listed.
Louisiana Reporting: None of the components are listed.
Louisiana Spill: None of the components are listed.
Massachusetts Spill: None of the components are listed.
Massachusetts Substances: None of the components are listed.
Michigan Critical Material: None of the components are listed.
Minnesota Hazardous Substances: None of the components are listed.
New Jersey Hazardous Substances: None of the components are listed.
New Jersey Spill: None of the components are listed.
New Jersey Toxic Catastrophe Prevention Act: None of the components are listed.
New York Acutely Hazardous Substances: None of the components are listed.
New York Toxic Chemical Release Reporting: None of the components are listed.
Pennsylvania RTK Hazardous Substances: None of the components are listed.
Rhode Island Hazardous Substances: None of the components are listed.

United States inventory (TSCA 8b): All components are listed or exempted.
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XVI. OTHER INFORMATION

National Fire Protection Association (U.S.A.)

Flammability

Health

Instability

Special

References:
European Chemical Bureau, Annex 1 EU Directive 67/548/EEC
Registry of Toxic Effects of Chemical Substances
Atrion International Inc. 4777 Levy Street, St Laurent, Quebec HAR 2P9, Canada

DISCLAIMER:
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