Prairie Mud Service
Fluid Solutions Thru Experience and Technology

Calcium Ammonium Nitrate
SAFETY DATA SHEET

Supersedes: May 22, 2017

Revised: April 28, 2021

Section 1. Identification

Product identifier : Envirofloc - Calcium Nitrate
Product type : Solid
Product code : PA34HU

Uses

Area of application : Professional applications
Material uses : Fertilizers.

Supplier

Supplier's details : Prairie Mud Service
738 6th Street
Estevan, SK
S4A 1A4

(306) 634-3411

Emergency telephone number (with hours of operation) : CANUTEC - (613) 996-6666 or *666 on cellular phone

National advisory body/Poison Center

Name : Poisons and Drug Information Service
Telephone number : +1 403 944 1414, (800) 332 1414 (Alberta only)

Section 2. Hazards identification

Classification and labelling have been performed following the guidelines and recommendation of GHS and the intended use.

Classification of the substance or mixture : ACUTE TOXICITY (oral) - Category 4
SERIOUS EYE DAMAGE - Category 1

GHS label elements

Hazard pictograms :

Signal word	:	Danger	
Hazard statements	:	H302	Harmful if swallowed.
		H318	Causes serious eye damage.

Precautionary statements

Prevention	:	P280-b	Wear protective gloves and eye protection.
		P270	Do not eat, drink or smoke when using this product.
		P264-a	Wash hands thoroughly after handling.
Response	:	P305	IF IN EYES:
		P351	Rinse cautiously with water for several minutes.
		P338	Remove contact lenses, if present and easy to do. Continue rinsing.
		P310	Immediately call a POISON CENTER or doctor/physician.
		P301	IF SWALLOWED:
		P312	Call a POISON CENTER or doctor/physician if you feel unwell.
		P330	Rinse mouth.

Supplemental label elements	:	None known.
Other hazards which do not result in classification	:	Product forms slippery surface when combined with water.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	CAS number	% (w/w)
Calcium nitrate	10124-37-5	74.18
Water	7732-18-5	16.3
Ammonium nitrate	6484-52-2	9.12

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present 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.
Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water for at least 15 minutes, keeping eyelids open. Check for and remove any

contact lenses. Get medical attention immediately.

Inhalation : If inhaled, remove to fresh air. In case of inhalation of decomposition products in a fire, symptoms may be delayed. Get medical attention immediately. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus.

Skin contact : Wash with soap and water. Get medical attention if irritation develops.

Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if you feel unwell.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : May give off gas, vapour or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin contact : No known significant effects or critical hazards.

Ingestion : Harmful if swallowed. May cause burns to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : Adverse symptoms may include the following:
stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : 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.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media	:	Use flooding quantities of water for extinction.
Unsuitable extinguishing media	:	Do NOT use chemical extinguisher or foam or attempt to smother the fire with steam or sand.
Specific hazards arising from the chemical	:	The product itself is not combustible but it can support combustion, even in absence of air. On heating it melts and further heating can cause decomposition, releasing toxic fumes containing nitrogen oxides and ammonia.
Hazardous thermal decomposition products	:	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides ammonia Avoid breathing dusts, vapors or fumes from burning materials. In case of inhalation of decomposition products in a fire, symptoms may be delayed.
Special protective actions for fire-fighters	:	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
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.
Remark	:	None.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	:	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.
For emergency responders	:	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- 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 and material for containment and cleaning up

Small spill	:	Move containers from spill area. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material 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. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see section 1 for emergency contact information and section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures	:	Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing.Do not ingest.If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator.Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use.Empty containers retain product residue and can be hazardous.Do not reuse container.
Advice on general occupational hygiene	:	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Conditions for safe storage, including any incompatibilities	:	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink.Store locked up.Keep container tightly closed and sealed until ready for use.Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.Keep away from: organic materials, oil and grease.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits	:	None.
Appropriate engineering controls	:	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.
Environmental exposure controls	:	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures	:	A washing facility or water for eye and skin cleaning purposes should be present.
Eye/face protection	:	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, gases or dusts. chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead. Recommended: Tightly-fitting goggles CEN: EN166

Skin protection

Hand protection	:	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. For general applications, we recommend gloves with a thickness typically greater than 0.35 mm. It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. > 8 hours (breakthrough time): Protective gloves should be worn under normal conditions of use.
Body protection	:	Personal protective equipment for the body should be selected based on the task being performed and the risks involved.
Other skin protection	:	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection	:	In case of inadequate ventilation wear respiratory protection. Recommended: Filter P2 (EN 143)
Personal protective equipment (Pictograms)	:	

Section 9. Physical and chemical properties

Appearance

Physical state	:	Solid
Color	:	White.
Odor	:	Odorless.
Odor threshold	:	Not determined.
pH	:	6.3 [Conc.: 110 g/l]
Melting/freezing point	:	400 °C
Boiling/condensation point	:	Not determined.
Sublimation temperature	:	Not determined.
Flash point	:	Not determined.
Evaporation rate	:	Not determined.
Flammability (solid, gas)	:	Non-flammable.
Lower and upper explosive	:	**Lower:** Not determined.

(flammable) limits		**Upper:** Not determined.
Vapor pressure	:	Not determined.
Bulk density	:	1.10 kg/m3
Relative density	:	Not determined.
Solubility	:	Easily soluble in the following materials: cold water
Partition coefficient: n-octanol/water	:	Not determined.
Auto-ignition temperature	:	Not determined.
Decomposition temperature	:	Not determined.
Viscosity	:	**Dynamic:** Not determined.
	:	**Kinematic:** Not determined.
Explosive properties	:	None.
Oxidizing properties	:	None.

Section 10. Stability and reactivity

Reactivity	:	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	:	The product is stable.
Possibility of hazardous reactions	:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	:	Avoid contamination by any source including metals, dust and organic materials.
Incompatible materials	:	alkalis combustible materials reducing materials organic materials acids
Hazardous decomposition products	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product / ingredient name	Result	Species	Dose	Exposure	References
Calcium nitrate					
	LD50 Oral	Rat - Female	500 mg/kg OECD 423	Not applicable.	IUCLID 5
	LD50 Dermal	Rat	> 2,000 mg/kg OECD 402	Not applicable.	IUCLID 5
Ammonium nitrate					
	LD50 Oral	Rat	2,950 mg/kg	Not	IUCLID 5

			OECD 401	applicable.	
	LD50 Dermal	Rat	> 5,000 mg/kg OECD 402	Not applicable.	IUCLID 5
Water					

Conclusion/Summary : Harmful if swallowed.

Irritation/Corrosion

Product / ingredient name	Result	Species	Score	Exposure	Observation	References
Calcium nitrate	Eyes - Severe irritant OECD 405	Rabbit	Not applicable.	24 - 72 h	Not applicable.	
Ammonium nitrate	Eyes - Irritant OECD 405	Rabbit	Not applicable.		Not applicable.	IUCLID 5

Conclusion/Summary

Skin : No known significant effects or critical hazards.

Eyes : Causes serious eye damage.

Respiratory : No known significant effects or critical hazards.

Sensitization

Conclusion/Summary

Skin : No known significant effects or critical hazards.

Respiratory : No known significant effects or critical hazards.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Product / ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure	References
Calcium nitrate	Not applicable.	Negative	Negative	Rat	Oral: > 1500 mg/kg bw/day Repeated dose OECD 422	Not applicable.	IUCLID 5
Ammonium nitrate	Not applicable.	Negative	Negative	Rat	Oral: > 1500	28 days	IUCLID 5

					mg/kg bw/day OECD 422		

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Specific target organ toxicity (single exposure)

No known significant effects or critical hazards.

Specific target organ toxicity (repeated exposure)

No known significant effects or critical hazards.

Aspiration hazard

No known significant effects or critical hazards.

Information on likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : May give off gas, vapour or dust that is very irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin contact : No known significant effects or critical hazards.

Ingestion : Harmful if swallowed. May cause burns to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : Adverse symptoms may include the following:
stomach pains

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Product / ingredient name	Result	Species	Dose	Exposure	References
Calcium nitrate	NOAEL Oral	Rat	> 1,000 mg/kg OECD 407	28days	IUCLID 5
Ammonium nitrate	NOAEL Oral	Rat	256 mg/kg OECD 422	28days	IUCLID 5
Ammonium nitrate	No-observable-effect-concentration Dusts and mists Inhalation	Rat	> 185 mg/kg OECD 412	2weeks 5 hours per day	IUCLID 5

Conclusion/Summary : No known significant effects or critical hazards.

General : No known significant effects or critical hazards.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : 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

Eye contact : Adverse symptoms may include the following:
pain
watering
redness

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : Adverse symptoms may include the following:
stomach pains

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Oral	660.3 mg/kg

Section 12. Ecological information

Toxicity

Product / ingredient name	Result	Species	Exposure	References
Calcium nitrate				

	Acute LC50 1,378 mg/l Fresh water OECD 203	Fish	96 h	IUCLID 5
	Acute LC50 2,400 mg/l Fresh water	Bluegill	4 d	Proc. Acad. Nat. Sci. Philadelphia106: 185-205
	Acute LC50 490 mg/l Fresh water	Daphnia	48 h	IUCLID 5
	Acute EC50 > 1,700 mg/l Salt water	Algae	10 d	IUCLID 5
Ammonium nitrate				
	Acute LC50 447 mg/l Fresh water	Fish	48 h	IUCLID 5
	Acute EC50 490 mg/l Fresh water	Daphnia	48 h	IUCLID 5
	Acute EC50 1,700 mg/l Salt water	Algae	10 d	IUCLID 5

Conclusion/Summary : No known significant effects or critical hazards.

Persistence and degradability

Conclusion/Summary : No known significant effects or critical hazards.

Bioaccumulative potential

Product / ingredient name	LogPow	BCF	Potential
Water	-1.38	Not applicable.	low

Conclusion/Summary : No known significant effects or critical hazards.

Mobility in soil

Soil/water partition coefficient (KOC) : Not available.

Mobility : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Product

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. 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. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when

recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

Regulation: UN Class	
14.1 UN number	Not regulated.
14.2 UN proper shipping name	Not applicable.
14.3 Transport hazard class(es)	Not applicable.
14.4 Packing group	Not applicable.
14.5 Environmental hazards	No.
Additional information **Environmental hazards** : No.	

Regulation: IMDG	
14.1 UN number	Not regulated.
14.2 UN proper shipping name	Not applicable.
14.3 Transport hazard class(es)	Not applicable.
14.4 Packing group	Not applicable.
14.5 Environmental hazards	No.
Additional information **Marine pollutant** : Not available.	

Regulation: IATA	
14.1 UN number	Not regulated.
14.2 UN proper shipping name	Not applicable.
14.3 Transport hazard class(es)	Not applicable.
14.4 Packing group	Not applicable.
14.5 Environmental hazards	No.
Additional information **Marine pollutant** : No.	

Regulation: DOT Classification	
14.1 UN number	Not regulated.
14.2 UN proper shipping name	Not applicable.
14.3 Transport hazard class(es)	Not applicable.

14.4 Packing group	Not applicable.
14.5 Environmental hazards	No.
Additional information **Marine pollutant** : Not available.	

Regulation: TDG Class	
14.1 UN number	Not regulated.
14.2 UN proper shipping name	Not applicable.
14.3 Transport hazard class(es)	Not applicable.
14.4 Packing group	Not applicable.
14.5 Environmental hazards	No.
Additional information Not applicable. **Environmental hazards** : No.	

14.6 Special precautions for user : Transport within user's premises: Ensure that persons transporting the product know what to do in the event of an accident or spillage.

IMSBC

Bulk cargo shipping name : CALCIUM NITRATE FERTILIZER
Class : Not applicable.
Group : C
Marpol V : Non-HME

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not applicable.

Section 15. Regulatory information

Canadian lists

Canadian NPRI : The following components are listed: Calcium nitrate
Ammonium nitrate
CEPA Toxic substances : None of the components are listed.

Inventory list

New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
Korea inventory: All components are listed or exempted.
Canada inventory (DSL and NDSL): All components are listed or exempted.
Taiwan Chemical Substances Inventory (TCSI): All components are listed or exempted.
Taiwan Chemical Substances Inventory (TCSI): All components are listed or exempted.
United States inventory (TSCA 8b): All components are listed or exempted.
EC INVENTORY (EINECS/ELINCS): All components are listed or exempted.
Canada: All components are listed or exempted.

Section 16. Other information

Key to abbreviations :

ADN/ADNR = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
bw = Body weight
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
NOHSC - National Occupational Health and Safety Commission
RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail
SUSDP - Standard for the Uniform Scheduling of Drugs and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
ACUTE TOXICITY (oral) - Category 4	Calculation method
SERIOUS EYE DAMAGE - Category 1	Calculation method

References :

EU REACH IUCLID5 CSR.
National Institute for Occupational Safety and Health, U.S. Dept. of Health, Education, and Welfare, Reports and Memoranda Registry of Toxic Effects of Chemical Substances.
Sphera Solutions Inc., 4777 Levy Street, St Laurent, Quebec HAR 2P9, Canada.

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|| Indicates information that has changed from previously issued version.

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