

**TETRA Technologies, Inc.****Material Safety Data Sheet**

This MSDS Sheet complies with the style format specified by ANSI Z400.1-1993

SECTION 1: CHEMICAL PRODUCT - COMPANY IDENTIFICATION

TETRA Technologies, Inc. (281) 367-1983
25025 I-45 North (800) 327-7817
The Woodlands, Texas 77380

(800) 424-9300 - CHEMTREC (24 Hour Emergency Response)

PRODUCT: N-CAL[®] 212
TRADE NAMES/SYNONYMS: None
CHEMICAL FAMILY: Soil amendment
MSDS CREATION DATE: 13 OCT 97
MSDS REVISION DATE: 30 NOV 01

SECTION 2: COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENTS: Blend of calcium chloride, urea and water
CAS NUMBER: Calcium chloride: 10043-52-4; urea: 57-18-6
RTECS NUMBER: Calcium chloride: EV9800000; urea: YR6250000
PERCENTAGE: Proprietary blend
PROBABLE CONTAMINANTS: Calcium Carbonate, Calcium Hydroxide, Calcium Oxide, Alkali Earth Metal Carbonates, Alkaline Earth Metal Carbonates, Ammonia

SECTION 3: HAZARDS IDENTIFICATION**NFPA RATINGS: (SCALE 0-4): HEALTH=1 FIRE=0 REACTIVITY=0**

EMERGENCY OVERVIEW: Odorless liquid. Colorless to light yellow or amber. May cause skin and eye irritation. Avoid repeated or prolonged contact with eyes, skin and clothing. May be harmful if swallowed. Mists may be irritating to the respiratory tract. Keep container tightly closed. Wash thoroughly after handling. Use only with adequate ventilation.

POTENTIAL HEALTH EFFECTS:

INHALATION: Inhalation of mists may cause irritation. Additional effects may include sneezing, coughing and shortness of breath.

SKIN CONTACT: May cause irritation to include blisters and sores.

EYE CONTACT: May cause irritation to include tearing.

INGESTION: May cause nausea, sore throat, stomach pain and disorientation.

CARCINOGEN STATUS:

OSHA: No NTP: No IARC: No

SECTION 4: FIRST AID MEASURES

INHALATION: Remove to fresh air. If irritation persists, get medical attention.

SKIN CONTACT: Remove contaminated clothing and shoes. Wash affected area with soap large amounts of water. In case of burns, cover area with dry, sterile dressing. If irritation persists, get medical attention.

EYE CONTACT: Flush eyes with large amounts of water or normal saline solution. If irritation persists, get medical attention.

INGESTION: If irritation persists, get medical attention.

NOTE TO PHYSICIAN: Antidote: No specific antidote. Treat symptomatically and supportively. May cause corneal injury.

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SECTION 5: FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARD: Negligible fire hazard when exposed to heat or flame.

EXTINGUISHING MEDIA: Dry chemical, carbon dioxide, water spray or regular foam. For larger fires, use water spray, fog or regular foam (1996 North American Emergency Response Guidebook, RSPA P 5800.7).

FIREFIGHTING: Move container(s) from fire area if you can do it without risk. Apply cooling water to sides of containers that are exposed to flames until well after fire is out. Stay away from ends of drums and/or ends of tanks (1996 North American Emergency Response Guidebook, RSPA P 5800.7. Guide 154). Extinguish fire using agent suitable for type of surrounding fire and/or chemicals. Do not use water directly on material. Avoid breathing corrosive vapors; keep upwind. Dike area to prevent runoff and contamination of water sources.

HAZARDOUS COMBUSTION PRODUCTS: Thermal decomposition products may include toxic and corrosive fumes of chlorine, hydrogen chloride, ammonia, nitrogen oxides. Product may react with some metals (aluminum, zinc, tin, etc.) to release flammable hydrogen gas.

SECTION 6: ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL SPILL: Avoid contact with spilled material. Stop leak if you can do it without risk. For small spills, take up with sand or other absorbent material and place into containers for disposal. Move containers from spill area. For larger spills, dike far ahead of spill for later disposal. Deny entry to nonessential personnel and isolate hazard area.

SOIL SPILL: Dig holding area such as lagoon, pond or pit for containment. Dike flow of spilled material using soil or sandbags or foamed barriers such as polyurethane or concrete. Use cement powder or fly ash to absorb liquid mass.

SECTION 7: HANDLING AND STORAGE

Observe all federal, state and local regulations when storing this product. Store in a tightly closed container. Store away from incompatible substances. Product is corrosive to mild steel and aluminum.

SECTION 8: EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS: No occupational exposure limits established by OSHA/ACGIH/NIOSH.

VENTILATION: Provide local exhaust ventilation system.

EYE PROTECTION: Wear safety glasses with splash shields or safety goggles.

EMERGENCY WASH FACILITIES: Where there is any possibility that an individual's eyes and/or skin may be exposed to this product, an eye wash fountain and quick drench shower within the immediate work area should be available for emergency use.

CLOTHING: Wear appropriate protective (impervious) clothing and equipment to prevent repeated or prolonged skin contact with this product. Leather work boots and/or leather products will dehydrate with resultant shrinkage and possible destruction.

GLOVES: Wear appropriate protective gloves, such as rubberized or latex coated canvas gauntlets.

RESPIRATOR: The respirator selected must be based on contamination levels found in the work place and specific to the job assignment. Do not exceed the working limits of the respirator.

FOR FIREFIGHTING AND OTHER IMMEDIATELY DANGEROUS TO LIFE OR HEALTH CONDITIONS: Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode. Any supplied air-respirator that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.



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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

DESCRIPTION:	Odorless, colorless to slightly yellow liquid or amber liquid
FORMULA:	Calcium chloride: CaCl_2 ; urea: $(\text{NH}_2)_2\text{CO}$
MOLECULAR WEIGHT:	Calcium chloride: 110.99 (for pure CaCl_2); urea: 60.06
BOILING POINT:	234 °F (112°C)
SPECIFIC GRAVITY:	1.39 @ 15°C (59°F)
pH:	6.0 - 8.0
WATER SOLUBILITY:	Miscible with water in all proportions
SOLVENT SOLUBILITY:	Miscible in alcohol, acetic acid and acetone

SECTION 10: STABILITY AND REACTIVITY

REACTIVITY: Stable under normal temperatures and pressures.

CONDITIONS TO AVOID: Flammable, poisonous gasses may accumulate in tanks and hopper cars.

INCOMPATIBILITIES:

Boric Oxide + Calcium Oxide: Possible violent incandescent reaction.

Bromide Trifluoride, Sodium Nitrite, Phosphorous Pentachloride: Possible violent reaction.

Furan-2-Peroxy-carboxylic Acid: Explodes.

Metals: Corrosive in the presence of moisture.

Methyl Vinyl Ether: May initiate exothermic polymerization.

Zinc: Corrodes, releasing flammable hydrogen gas.

Sodium Hypochlorite, Calcium Hypochlorite: Can react to form explosive nitrogen trichloride.

HAZARDOUS DECOMPOSITION: Thermal decomposition products may include toxic and corrosive fumes of chlorine, hydrogen chloride, ammonia, nitrogen oxides.

POLYMERIZATION: Hazardous polymerization has not been reported to occur under normal temperatures and pressures.

SECTION 11: TOXICOLOGICAL INFORMATION**TOXICITY DATA:**

TD_{LO}: 110g/kg, oral, 20 weeks, rat

LD_{LO}: 274 mg/kg subcutaneous, dog

LD₅₀: 1000 mg/kg oral, rat

LD₅₀: 264 mg/kg intraperitoneal, rat

Mutagenic and tumorigenic data see Registry of Toxic Effects of Chemical Substances (RTECS) file.

CARCINOGEN STATUS: None.

LOCAL EFFECTS: Liquid product is an eye, mucous membrane and skin irritant.

ACUTE TOXICITY LEVEL: Moderately toxic by ingestion, slightly toxic by dermal absorption.

AT INCREASED RISK FROM EXPOSURE: Persons with skin, eye, respiratory or kidney disorders.

INHALATION:

Inhalation of mist may cause irritation with coughing and shortness of breath.

SKIN CONTACT: Short exposure not likely to cause significant skin irritation. Prolonged exposure may possibly result in severe irritation, sores or blisters.

EYE CONTACT: Direct contact with the dust may cause irritation such as tearing or eye discharge.

INGESTION: May cause abdominal spasms and nausea. Overdoses may cause gastrointestinal tract or cardiovascular irregularities. The fatal dose is estimated to be 100 grams.

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SECTION 12: ECOLOGICAL INFORMATION

No data available.

SECTION 13: DISPOSAL INFORMATION

Observe all federal, state and local regulations with disposing of this substance.

SECTION 14: TRANSPORT INFORMATION

DOT shipping name - ID Number: Non-regulated.

SECTION 15: REGULATORY INFORMATION

TSCA STATUS:	Yes
WHMIS CLASSIFICATION	D.2B
CERCLA SECTION 103:	No
SARA SECTION 302, 304, 313:	No
SARA HAZARD CATEGORIES, SECTIONS 311/312	
ACUTE HAZARD:	Yes
OSHA Process Safety	No
California Proposition 65	No

SECTION 16: OTHER INFORMATION

Individuals handling this product should be informed of the recommended safety precautions and should have access to this information.

This information relates to the specific product designated and may not be valid for such product used in combination with any other materials or in any other processes. Such information is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability, or completeness. It is the user's responsibility to satisfy themselves as to the suitability and completeness of such information for their own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.

TETRA Technologies, Inc. reserves the right to refuse shipment of this product to any consumer who fails to demonstrate the ability to consistently handle and use it safely and in compliance with all applicable laws, rules and regulations. Such demonstration may require on-site inspection of any or all storage, processing, packaging and other handling systems that come in contact with it.

Customers are responsible for compliance with local, state and federal regulations that may be pertinent in the storage, application and disposal of this product.