

# MATERIAL SAFETY DATA SHEET

## SECTION 1 - PRODUCT IDENTIFICATION AND USE

PRODUCT IDENTIFIER: Cal Max

PRODUCT USE: Fertilizer - WHMIS CLASSIFICATION: C- Oxidizer, D1B, D2B (eye, skin, ingestion and respiratory irritant)

MANUFACTURER'S NAME: Grotek Manufacturing Inc.

SUPPLIER'S NAME: Grotek Manufacturing Inc.

STREET ADDRESS: #284-505 -8840 -210<sup>th</sup> Street, Langley, BC V1M 2Y2

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IN CASE OF EMERGENCY: (604) 882-7686

## SECTION 2 - HAZARDOUS INGREDIENTS

HAZARDOUS INGREDIENTS	%	CAS #	LD <sub>50</sub> OF INGREDIENT (SPECIFY SPECIES & ROUTE)	LC <sub>50</sub> OF INGREDIENT (SPECIFY SPECIES)
Calcium Nitrate	1-5%	10124-37-5	LD <sub>50</sub> (oral rat) 302 mg/kg	NAP
Ammonium Nitrate	1-5%	6484-52-2	LD <sub>50</sub> (oral rat) 2217 mg/kg	NAP
Calcium Chloride	7-13%	10043-52-4	LD <sub>50</sub> (oral-rat) 900-2100 mg/kg LD <sub>50</sub> (dermal rabbit) >5000mg/kg	NAP
Magnesium Nitrate	10-30%	10377-60-3	NAV - Minimum lethal dose in humans estimated to be 0.5 - 5 g/kg	NAP

## SECTION 3 - PHYSICAL DATA

PHYSICAL STATE: Liquid	ODOUR and APPEARANCE: None, Amber liquid			ODOUR THRESHOLD (ppm): NAV
VAPOUR PRESSURE: (mmHg) NAV	VAPOUR DENSITY: (Air=1) NAV	EVAPORATION RATE: NAV	BOILING POINT: (°C) >100	FREEZING POINT: (°C) <100
pH: 5.2	SPECIFIC GRAVITY: >1	COEFF. WATER/OIL DIST. NAV		SOLUBILITY: Water based solution

## SECTION 4 - FIRE AND EXPLOSION DATA

FLAMMABILITY: Not flammable, however strong oxidizer  
IF YES UNDER WHAT CONDITIONS?

MEANS OF EXTINCTION: For fires involving this product, use water or fog, carbon dioxide, foam or dry chemical.

SPECIAL PROCEDURES: Water based product. Treat surrounding fire

FLASHPOINT (°C) AND METHOD: NAP	UPPER FLAMMABLE LIMIT (%): NAP	LOWER FLAMMABLE LIMIT (%): NAP
AUTOIGNITION TEMPERATURE (°C) NAP	HAZARDOUS COMBUSTION PRODUCTS: Oxides of nitrogen, calcium, and magnesium	

EXPLOSION DATA » SENSITIVITY TO IMPACT: NAP SENSITIVITY TO STATIC DISCHARGE: NAP

## SECTION 5 - REACTIVITY DATA

CHEMICAL STABILITY: Stable under normal condition of use. Avoid excessive heat. See incompatibility section below.

INCOMPATIBILITY: Avoid contact with strong oxidizing agents, Lewis and mineral acids, aluminum and its alloys, zinc, alkali metals, methyl vinyl ether, boric acid, calcium oxide, and bromine trifluoride. Hydrogen gas may be produced on contact with metals such as aluminum, tin, lead and zinc. Dry calcium chloride can produce considerable amounts of heat when dissolving into water.

CORROSIVE BEHAVIOUR:  
Weakly acidic pH 5.2

REACTIVITY AND UNDER WHAT CONDITIONS: High temperatures, sparks, open flames and all other ignition.

HAZARDOUS DECOMPOSITION PRODUCTS: Hydrochloric acid, oxides of chlorine, nitrogen and calcium

**SECTION 6 - TOXICOLOGICAL PROPERTIES**

**ROUTE OF ENTRY:**

SKIN CONTACT: Yes SKIN ABSORPTION: No EYE CONTACT: Yes INHALATION: Yes INGESTION: Yes

**EFFECTS OF ACUTE EXPOSURE TO PRODUCT:**

Ingestion - Calcium chloride may cause burning of mouth, throat, resulting in vomiting, diarrhea and perforation of esophagus and stomach. Calcium Chloride may sensitize heart muscle causing cardiac arrhythmia, in rare cases. Nitrate compounds may cause violent gastroenteritis, anemia, methemoglobinemia, vomiting, vertigo, muscle weakness, irregular pulse, burns to the mouth, throat if large amounts ingested. Nitrates may be reduced by bacteria in digestive tract to nitrites causing nitrite poisoning  
Inhalation - Aerosol and mist may be irritating to nose, mouth and throat.  
Eye contact - Irritation.  
Skin contact - Prolong contact may be irritating

**EFFECTS OF CHRONIC EXPOSURE:** Irritation of skin, and respiratory tract.

**EXPOSURE LIMITS:** Manufacture recommendation is 10 mg/m<sup>3</sup> for total dust and 3 mg/m<sup>3</sup> for respirable dust

SYNERGISTIC PRODUCTS: NAV	IRRITANCY: Yes	SENSITIZATION: NAV	CARCINOGENICITY: Not Reported
TERATOGENICITY: NAV	REPRODUCTIVE HAZARD: NAV	MUTAGENICITY: NAV	

**SECTION 7 - PREVENTIVE MEASURES**

**PERSONAL PROTECTIVE EQUIPMENT:** Hands: wear water resistant rubber (butyl), or plastic gloves (PVC). Respirator: wear NIOSH approved respirator and particulate cartridges to remove aerosol/mist during product application. Eye wear: goggles. Footwear wear: work boots/rubber boots. Clothing wear: long sleeve shirt and pants.

**ENGINEERING CONTROLS:** General mechanical ventilation is adequate, avoid splashing.

**LEAK AND SPILL PROCEDURE:** Wear necessary personal protective equipment during clean-up. Use boom socks to contain spill and clean-up with a vacuum.

**WASTE DISPOSAL:** Dispose in accordance with Federal, Provincial and Municipal waste regulations.

**HANDLING PROCEDURES AND EQUIPMENT:** Do not handle unless safety precaution have been read and understood. Avoid eye and skin contact. Avoid inhalation of mist or aerosol.

**STORAGE REQUIREMENTS:** Store in cool, dry and well ventilated area. Avoid storage near combustibel materials (wood, paper, etc.). Separate from combustibles, organic or other readily oxidizable materials, including acids, alkalis, and reducing agents. Keep container closed. Packaging should be made of 304 stainless steel, titanium and polyethylene. Containers should NOT be made of brass, zinc, mild steel aluminum and aluminum alloy and iron and its alloys.

**SPECIAL SHIPPING INFORMATION:** TDG Regulation - Class 5.1 Oxidizer - Packing Group III, regulated for transport in Canada.

**SECTION 8 - FIRST AID MEASURES**

**INHALATION:** Move victim to fresh air. Give artificial respiration ONLY if breathing has stopped, assist breathing with oxygen. Obtain medical assistance immediately.

**EYE CONTACT:** Flush eyes thoroughly while holding both upper and lower eye lids for a minimum of 15 minutes. Obtain medical attention.

**SKIN CONTACT:** Remove contaminated clothing. Wash affected area with water for a minimum of 15 minutes. Obtain medical attention if irritation or redness persists.

**INGESTION:** Do not attempt to give anything by mouth to unconscious victim. If victim is alert and not convulsing, rinse mouth and give water to dilute material. Do induce vomiting without physician's direction. If vomiting occurs, have victim lean forward with head down to avoid breathing in vomit, rinse mouth. Obtain medical attention immediately.

**SECTION 9 - PREPARATION DATE OF MSDS**

PREPARED BY: BC Research Inc  
Occupational and Environmental Risk  
Management Group

BUS NUMBER: -604-224-4331

**ADDITIONAL INFORMATION:**

At the time of preparation, the information and data contained in this MSDS are believed to be accurate and have been compiled from sources that are believed to be reliable

DATE: Ocotber 2, 2002