



## MSDS – Calcium-Magnesium Chloride

### MATERIAL SAFETY DATA SHEET

PRODUCT NAME: MINERAL WELL BRINE SOLUTION: MSDS:0001

EFFECTIVE DATE: JANUARY 1, 2006

#### 1. PRODUCTION INGREDIENTS:

Calcium-Magnesium Chloride	21.0 – 24.7%
Other Alkali Chlorides	5.0 – 6.0%
Water	Balance

Substances listed in the ingredients Section are those identified as being present at a concentration of 1% or greater or 0.1% if the substance is on the list of potential carcinogens cited in OSHA Hazard Communication Standard.

#### 2. PHYSICAL DATA

Boiling Point:	225°F, 107°C
Vap. Pressure:	17mmHg@ 25°C
Vap. Density:	Same as water
Sol. In Water:	Completely Miscible
Sp. Gravity:	1.215 - 1.25 @ 25°C, 77°F
Appearance:	Clear to straw liquid solution
Odor:	None

#### 3. FIRE AND EXPLOSION HAZARD DATA:

Flash Point:	Not applicable.
Method Used:	Not applicable.

#### FLAMMABLE LIMITS:

LFL:	Not applicable.
UFL:	Not applicable.

EXTINGUISHING MEDIA:	Non-combustible.
----------------------	------------------

FIRE & EXPLOSION HAZARDS:

None

FIRE-FIGHTING EQUIPMENT:

Wear positive pressure self-contained breathing apparatus.

#### 4. REACTIVITY DATA:

Stability:

Stable (Conditions to Avoid – Not applicable)

Incompatibility: (Specific Materials to Avoid) Calcium Chloride will corrode most metals exposed to air: attack aluminum (and its alloys) and yellow brass: react with sulfuric acid to form hydrogen chloride which is corrosive, irritating, and reactive: give an exothermic reaction with water-reactive materials such as sodium: result in a runaway polymerization reaction with methyl vinyl ether: and, in solution form, react with zinc (galvanizing) to yield hydrogen gas which is explosive.

Hazardous Polymerization:

Will not occur.

HAZARDOUS DECOMPOSITION PRODUCTS:

Not applicable.

#### 5. ENVIRONMENTAL AND DISPOSAL INFORMATION:

ACTION TO TAKE FOR SPILLS/LEAKS: Losses incidental to correct applications of this product in its intended uses are not expected to be harmful to the environment. Wear appropriate safety apparel during cleanup. See Section 8. Contain by diking. Avoid entry of large amount of product into sewers, natural waters and drinking water sources. Due to possible harmful effects, avoid contact with vegetation, animals, and fish life. Recover quickly into suitable containers if reusing: or collect using absorbent material or sand. Small quantities may be flushed away with plenty of water. Walking surfaces may remain wet longer due to moisture being held by spilled product. Avoid by thoroughly washing surfaces with water.

DISPOSAL METHOD: ++DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER++. For unused or uncontaminated material, the preferred management options are to send to a licensed recycler, or incinerator. The same management options are recommended for used or contaminated materials, although additional evaluation is required in the U.S. (see, for example, 40 CFR Part 261. "Identification and Listing of Hazardous Waste"). Any disposal practice must be in compliance with federal, state, provincial, and local laws and regulations. Check with appropriate agencies for your location.

#### 6. HEALTH HAZARD DATA:

EYE: May cause moderate to severe eye irritation with corneal injury, which may be slow to heal. More intense effects as well as thermal burns are possible if substance is hotter than normal.

SKIN CONTACT: Short single exposure is not likely to cause significant skin irritation. Prolonged or repeated contact may cause skin irritation, even a burn. Conditions may be more severe if confined to skin or skin is scratched or cut. More intense effects as well as thermal burns are possible if material is hotter than normal. D.O.T.

Classification: Non-corrosive.

INGESTION: Single dose oral toxicity is believed to be low. The oral LD50 for rats is in the range of 900-2100 mg/kg for calcium chloride on a 100% basis. Small amounts swallowed incidental to normal handling operations are not likely to cause injury, swallowing amounts larger than that may cause injury. Ingestion may cause gastrointestinal irritation or ulceration.

INHALATION: Vapors are unlikely due to physical properties. Mists may cause irritation to upper respiratory tract.

SYSTEMIC & OTHER EFFECTS: Results of in vitro mutagenicity tests have been negative for CaCl<sub>2</sub>.

#### 7. FIRST AID:

EYES: Irrigate with flowing water immediately and continuously for 15 minutes. Consult Medical personnel.

SKIN: Wash off in flowing water or shower.

INGESTION: If swallowed, do not induce vomiting. Give large amounts of water or milk and take to a medical facility. Never give anything by mouth to an unconscious person. Consult medical personnel.

INHALATION: Remove to fresh air if effects occur. Consult a physician.

NOTE TO PHYSICIAN: If burn is present, treat as any thermal burn, after decontamination. may cause tissue destruction leading to stricture. No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

#### 8. HANDLING PRECAUTIONS:

EXPOSURE GUIDELINE (S): IHG is 10 mg/m<sup>3</sup> for calcium chloride, sodium chloride, and Potassium chloride. There is no OSHA PEL or ACGIH TLV for calcium chloride.

VENTILATION: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required for certain operations, use an approved air-purifying respirator. In misty atmospheres, use an approved mist respirator.

SKIN PROTECTION: Use protective clothing impervious to this material. Selection of specific items such as gloves, boots, apron, or full-body-suit will depend on operation. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse.

EYE PROTECTION: Use chemical goggles. Eye wash fountain should be located in immediate work area.

9. ADDITIONAL INFORMATION:

SPECIAL PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Product may sometimes be shipped hot, which may cause thermal burns and probable more intense chemical irritation or burn than at ambient temperatures. Avoid eye and prolong skin contact. ALWAYS USE COOL WATER (TEMPERATURE LESS THAN 80°F, 27°C) WHEN DILUTING CALCIUM CHLORIDE SOLUTION. Leather clothing and shoes will be damaged by calcium chloride.

REGULATORY INFORMATION: (Not meant to be all-inclusive-selected regulations represented.)

OSHA HAZARD COMMUNICATION STANDARD:

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws and regulations.