



# Calcium Chloride – Calcium Bromide Solution

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

## SECTION 1: CHEMICAL PRODUCT - COMPANY IDENTIFICATION

**TETRA Technologies, Inc.** (218) 367-1983  
25025 I-45 North (800) 327-7817  
The Woodlands, Texas 77380

**(800) 424-9300**      **CHEMTREC (24 Hour Emergency Response)**  
**(800) 222-1222**      **POISON CONTROL**

**SUBSTANCE:** Calcium Chloride- Calcium Bromide, Solution  
**TRADE NAMES/SYNONYMS:** None  
**CHEMICAL FAMILY:** Inorganic Salt  
**MSDS CREATION DATE:** 11 OCT 94  
**MSDS REVISION DATE:** 28 JUL 03

## SECTION 2: COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	RTECS NUMBER	PERCENTAGE
Calcium Chloride	10043-52-4	EV9800000	3-38%
Calcium Bromide	7789-41-5	EV9328000	2-52%
Water			45-60%

**PROBABLE CONTAMINANT:** Calcium Carbonate, Calcium Hydroxide, Calcium Oxide, Alkali Metal Chlorides and Bromides, Alkaline Earth Metal Chlorides and Bromides

## SECTION 3: HAZARDS IDENTIFICATION

**NFPA RATINGS:** (SCALE 0-4): HEALTH=1      FIRE=0      REACTIVITY=0  
**EMERGENCY OVERVIEW:** Odorless clear liquid, colorless to light yellow. May cause skin burns and respiratory tract and eye irritation. Do not get in eyes, on skin or on clothing. May be harmful if swallowed. Keep container tightly closed. Wash thoroughly after handling. Use only with adequate ventilation.  
**POTENTIAL HEALTH EFFECTS:**  
**INHALATION:** May cause irritation. Additional effects may include coughing and shortness of breath.  
**SKIN CONTACT:** May cause irritation, possibly severe. Additional effects may include blisters and sores.  
**EYE CONTACT:** May cause irritation. Additional effects may include tearing.  
**INGESTION:** May cause nausea.  
**CARCINOGEN STATUS:**  
OSHA: No      NTP: No      IARC: No

## SECTION 4: FIRST AID MEASURES

**INHALATION:** Remove from exposure area to fresh air immediately. Get medical attention immediately.  
**SKIN CONTACT:** Remove contaminated clothing and shoes immediately. Wash affected area with large amounts of soap and water. In cases of burns, cover area lightly with sterile, dry dressing. Get medical attention immediately.  
**EYE CONTACT:** Flush eyes immediately with large amounts of water. Get medical attention immediately.  
**INGESTION:** Get medical attention immediately.

**NOTE TO PHYSICIAN: Antidote:**  
Antidote should be administered by qualified medical personnel. No specific antidote for calcium bromide has been recommended. Treat symptomatically and supportively. The following antidote has been recommended for bromide poisoning. However, the decision as to whether the severity of poisoning requires administration of any antidote and actual dose required should be made by qualified medical personnel.



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**BROMIDE POISONING:** Give sodium chloride, 1 gram orally every hour in water or as salt tablets; for severe involvement in which oral medication is impossible, give normal saline, 1 liter every 8 hours intravenously to a maximum of 2 liters daily. Sodium chloride therapy must be continued until the blood bromide level drops below 50 mg/dL. Simultaneous administration of diuretics is also useful (Driesbach, Handbook of Poisoning, 12th Ed.).

### **SECTION 5: FIRE FIGHTING MEASURES**

**FIRE AND EXPLOSION HAZARD:** Negligible fire hazard.

**EXTINGUISHING MEDIA:** Use extinguishing agent appropriate for surrounding fire.

**FIREFIGHTING:** Move container(s) from fire area if possible. Avoid breathing vapors; keep upwind.

**HAZARDOUS COMBUSTION PRODUCTS:** Thermal decomposition products may include toxic and corrosive fumes of chlorine, bromine, hydrogen chloride and hydrogen bromide.

### **SECTION 6: ACCIDENTAL RELEASE MEASURES**

**OCCUPATIONAL SPILL:** Do not touch spilled material. Stop leak if you can without risk. For small spills, take up with sand or other absorbent material and place in containers for disposal. Move containers from spill area. For larger spills, dike far ahead of spill for later disposal. Keep unnecessary people away. Isolate hazard area and deny entry.

### **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 materials.

### **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/shield.

**EMERGENCY WASH FACILITIES:** Where there is possibility of exposure, the employer should provide an eye wash fountain and a safety shower within the immediate work area for emergency use.

**CLOTHING:** Wear appropriate chemical resistant clothing and gloves.

### **SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

**DESCRIPTION:** Odorless clear liquid, colorless to light yellow

**FORMULA:**  $\text{CaCl}_2\text{CaBr}_2$

**SPECIFIC GRAVITY:** 1.39-1.72

**pH:** 4.5-7.5

**WATER SOLUBILITY:** Miscible with water in all proportions

**SOLVENT SOLUBILITY:** Miscible with alcohol, acetic acid and acetone

### **SECTION 10: STABILITY AND REACTIVITY**

**REACTIVITY:** Stable under normal temperatures and pressures.

**CONDITIONS TO AVOID:** Vapors may accumulate in tanks and hopper cars.

**INCOMPATIBILITIES:** Strong oxidizing agents.

**POLYMERIZATION:** Has not been reported to occur under normal temperatures and pressures.

**HAZARDOUS DECOMPOSITION:** Thermal decomposition products may include toxic and corrosive fumes of hydrogen chloride, hydrogen bromide, chlorine and bromine.



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### **SECTION 11: TOXICOLOGICAL INFORMATION**

#### **TOXICITY DATA:**

##### **(CALCIUM BROMIDE):**

LD<sub>50</sub>: 740 mg/kg, mouse, interperitoneal  
LD<sub>50</sub>: 1580 mg/kg, mouse, subcutaneous

##### **TOXICITY DATA (ANHYDROUS CALCIUM CHLORIDE):**

TD<sub>LO</sub>: 112g/kg, oral, 20 weeks, rat  
LD<sub>LO</sub>: 274 mg/kg, subcutaneous, dog  
LD<sub>50</sub>: 1000 mg/kg, oral, rat  
LD<sub>50</sub>: 264 mg/kg, intraperitoneal, rat

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

**CARCINOGEN STATUS:** None.  
**LOCAL EFFECTS:** Solution is an eye, mucous membrane and skin irritant.  
**ACUTE TOXICITY LEVEL:** Moderately toxic by ingestion, slightly toxic by dermal absorption.  
**INHALATION:** Inhalation of mist may cause irritation with coughing and shortness of breath.  
**SKIN CONTACT:** Single, short exposure not likely to cause significant skin irritation. However, direct contact may cause severe irritation, erythema, blistering, exfoliation, ulceration, necrosis and scarring. The degree of irritation depends on the concentration and duration of contact.  
**EYE CONTACT:** Direct contact may cause irritation with redness and pain. Tearing and eye discharge may also occur.  
**INGESTION:** May cause abdominal spasms and nausea. Overdose may cause gastrointestinal tract or cardiovascular irregularities.

### **SECTION 12: ECOLOGICAL INFORMATION**

No data available.

### **SECTION 13: DISPOSAL INFORMATION**

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

### **SECTION 14: TRANSPORT INFORMATION**

US DOT Shipping Name-ID Number: Non-regulated.

### **SECTION 15: REGULATORY INFORMATION**

#### **United States:**

TSCA STATUS:	Yes
CERCLA SECTION 103:	No
SARA SECTIONS 311 CLASSIFICATION:	Acute Hazard
OSHA Process Safety	No
CALIFORNIA PROPOSITION 65:	No
DSL STATUS:	Yes
EINECS STATUS:	Yes
OTHER TSCA ISSUES:	None



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### **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 users' 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.