



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, Incorporated

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

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

PRODUCT: HI-CAL™

CHEMICAL FAMILY: Inorganic Salt

MSDS CREATION DATE: 07 OCT 97

MSDS REVISION DATE: 21 JUL 00

SECTION 2: COMPOSITION, INFORMATION ON INGREDIENTS

The composition of this product is proprietary. This product is not hazardous as defined in 29 CFR 1910.1200. In the event of a medical emergency, compositional information will be revealed to a physician or nurse.

COMPONENTS: Proprietary

CAS NUMBER: Proprietary

RTECS NUMBER: Proprietary

PERCENTAGE: Proprietary

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

SECTION 3: HAZARDS IDENTIFICATION

NFPA RATINGS: (SCALE 0-4): HEALTH=1, FIRE=0, REACTIVITY=1

EMERGENCY OVERVIEW: Odorless liquid. Colorless to light yellow or amber. May cause skin and eye irritation. Do not get in eyes, on skin or on clothing. Avoid repeated or prolonged contact with eyes, skin and clothing. May be harmful if swallowed. Keep container tightly closed. Wash thoroughly after handling. Use only with adequate ventilation.



TETRA Technologies, Inc.

Material Safety Data Sheet

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

POTENTIAL HEALTH EFFECTS:

INHALATION:

Short Term Effects: Product is unlikely to generate fumes. May cause irritation. Additional effects may include shortness of breath.

Long Term Effects: May cause perforation of the nasal septum and nose bleeds.

SKIN CONTACT:

Short Term Effects: May cause irritation, possibly severe. Additional effects may include blisters and sores.

Long Term Effects: Same effects as short term exposure.

EYE CONTACT:

Short Term Effects: May cause irritation. Additional effects may include tearing.

Long Term Effects: Same effects as short term exposure. Contact with heated product can cause thermal burns with resultant corneal injury.

INGESTION:

Short Term Effects: May cause nausea.

Long Term Effects: No information available on significant adverse effects.

CARCINOGEN STATUS:

OSHA: No **NTP:** No **IARC:** No

SECTION 4: FIRST AID MEASURES

INHALATION: Remove from exposure area to fresh air immediately. If breathing has stopped, perform artificial resuscitation. Keep person warm and at rest. Treat symptomatically and supportively. Get medical attention immediately.

SKIN CONTACT: Remove contaminated clothing and shoes immediately. Wash affected area with soap or mild detergent and large amounts of water until no evidence of chemical remains (at least 15-20 minutes). In cases of burns, cover area with sterile, dry dressing. Bandage securely, but not too tightly. Get medical attention immediately.

EYE CONTACT: Flush eyes immediately with large amounts of water or normal saline solution, occasionally lifting upper and lower lids until no evidence of chemical remains (approximately 15-20 minutes). Get medical attention immediately.

INGESTION: Treat symptomatically and supportively. Get medical attention immediately. If vomiting occurs, keep head lower than hips to prevent aspiration.

NOTE TO PHYSICIAN: Antidote:

No specific antidote. Treat symptomatically and supportively.



TETRA Technologies, Inc.

Material Safety Data Sheet

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

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 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. 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 and hydrogen chloride. Product may react with some metals (aluminum, zinc, tin, etc.) to release flammable hydrogen gas.

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. Deny entry to nonessential personnel and isolate hazard.

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 to prevent contact with this product.

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



TETRA Technologies, Inc.

Material Safety Data Sheet

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

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 to prevent contact with this product.

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. Respirators must also be jointly approved by the National Institute for Occupational Safety and Health and the Mine Safety and Health Administration (NIOSH-MSHA). These respirators are ranked from minimum to maximum respiratory protection as listed below:

- Any dust and mist respirator with a full facepiece;
- Any air-purifying full facepiece respirator with a high-efficiency particulate filter;
- Any powered air-purifying respirator with a tight-fitting facepiece and high-efficiency particulate filter;
- Any Type 'C' supplied-air respirator with a full facepiece operated in pressure-demand or other positive-pressure mode or with a full facepiece, helmet or hood operated in continuous-flow mode;
- Any self-contained breathing apparatus with a full facepiece operated in pressure-demand or other positive-pressure mode.

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.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

DESCRIPTION: Odorless, colorless to light yellow or amber liquid.

MOLECULAR FORMULA: Proprietary

MOLECULAR WEIGHT: Proprietary

MELTING POINT: Not applicable

BOILING POINT: Proprietary

SPECIFIC GRAVITY: Proprietary

pH: 6.0 - 9.0

WATER SOLUBILITY: Miscible with water in all proportions.

SOLVENT SOLUBILITY: Miscible in alcohol, acetic acid and acetone



TETRA Technologies, Inc.

Material Safety Data Sheet

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

SECTION 10: STABILITY AND REACTIVITY

REACTIVITY: Stable under normal temperatures and pressures.

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

INCOMPATIBILITIES:

Boric Oxide + Calcium Oxide: Possible violent incandescent reaction.

Bromine Trifluoride: 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.

HAZARDOUS DECOMPOSITION: Thermal decomposition products may include toxic and corrosive fumes of chlorine.

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

SECTION 11: TOXICOLOGICAL INFORMATION

TOXICITY DATA:

TD_{LO}: 112g/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 data and tumorigenic data-see Registry of Toxic Effects of Chemical Substances (RTECS) file.

CARCINOGEN STATUS: None.

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

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

TARGET EFFECTS: No data available.

INHALATION:

Acute Exposure: Inhalation of dust may cause irritation with coughing and shortness of breath.

Chronic Exposure: Reported cases of burning sensation and pain in the nasal cavities, occasional nose bleeds and tickling in the throat. Perforation of the nasal septum has been reported.



TETRA Technologies, Inc.

Material Safety Data Sheet

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

SKIN CONTACT:

Acute Exposure: Single, short exposure not likely to cause significant skin irritation. However, direct contact with dust or solutions may cause severe irritation, erythema, blistering, exfoliation, ulceration, necrosis and scarring. The degree of irritation depends on the concentration and duration of contact.

Chronic Exposure: Effects depend on concentration and duration of exposure. Repeated or prolonged contact with corrosive substances may result in dermatitis or effects similar to those in acute exposure.

EYE CONTACT:

Acute Exposure: Direct contact with the dust may cause irritation with redness and pain and superficial injury. Tearing and eye discharge may also occur. Direct contact of this product is essentially innocuous. Application of 2 - 10% solution to rabbit eyes caused no permanent injury.

Chronic Exposure: Repeated or prolonged exposure may result in conjunctivitis.

INGESTION:

Acute Exposure: May cause abdominal spasms and nausea. Overdose may cause gastrointestinal tract or cardiovascular irregularities.

Chronic Exposure: No adverse effects have been reported from its use as a food additive.

SECTION 12: ECOLOGICAL INFORMATION

ENVIRONMENTAL IMPACT RATING (0-4): No data available.

ACUTE AQUATIC TOXICITY: No data available.

DEGRADABILITY: Does not biodegrade.

LOG BIOCONCENTRATION FACTOR (BCF): Does not bioaccumulate.

LOG OCTANOL/WATER PARTITION COEFFICIENT: No data available.

SECTION 13: DISPOSAL INFORMATION

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

SECTION 14: TRANSPORT INFORMATION

DOT Shipping Name-ID Number: Non-regulated.



TETRA Technologies, Inc.

Material Safety Data Sheet

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

SECTION 15: REGULATORY INFORMATION

	TSCA STATUS:	Yes
	DSL STATUS:	Yes
	EINECS STATUS	Yes
40 CFR 302.4	CERCLA SECTION 103:	No
40 CFR 355.30	SARA SECTION 302:	No
40 CFR 355.40	SARA SECTION 304:	No
40 CFR 372.65	SARA SECTION 313:	No
29 CFR 1910.119	OSHA Process Safety	No
	California Proposition 65	No
40 CFR 370.21	SARA HAZARD CATEGORIES, SARA SECTIONS 311.312	
	ACUTE HAZARD:	Yes
	CHRONIC HAZARD:	No
	FIRE HAZARD:	No
	REACTIVITY HAZARD:	Yes
	SUDDEN RELEASE HAZARD:	No



TETRA Technologies, Inc.

Material Safety Data Sheet

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

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.