



# KENCRO

## CHEMICALS

CALCIUM CHLORIDE SOLUTION

### MATERIAL SAFETY DATA SHEET

#### SECTION 1: PRODUCT AND COMPANY INFORMATION

**PRODUCT IDENTIFIER:** CALCIUM CHLORIDE SOLUTION  
**PRODUCT USE:** AGRICULTURE: PRE-HARVEST, CONCRETE ACCELERATION, DRILLING FLUID ADDITIVE, DUST CONTROL, ICE MELTING, REFRIGERATION, ROAD BASE STABILIZATION AND FULL DEPTH RECLAMATION, TIRE WEIGHTING, WATER TREATMENT (NON-POTABLE).  
**SUPPLIER'S NAME AND ADDRESS:** KENCRO CHEMICALS LIMITED  
2172 WYECROFT RD., UNIT #4  
OAKVILLE, ON  
L6L 5V6  
905-827-4133  
**24 HR. EMERGENCY NUMBER:** 613-996-6666 (CANUTEC)

#### SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS	C.A.S. #	WT.%	LC50	LD50	
				ORAL (RAT)	DERMAL (RABBIT)
CALCIUM CHLORIDE	10043-52-4	28 - 42	N/AV.	918-1668mg/kg	>5000mg/kg
POTASSIUM CHLORIDE	7447-40-7	<3	N/AV.	N/AV.	N/AV.
WATER	7732-18-5	53 - 72	N/AV.	N/AV.	N/AV.
SODIUM CHLORIDE	7647-14-5	<2	N/AV.	N/AV.	N/AV.
CALCIUM BROMIDE (CABR2)	7789-41-5	<1	N/AV.	N/AV.	N/AV.

#### SECTION 3: HAZARDS IDENTIFICATION

**EMERGENCY OVERVIEW**  
CLEAR, ODOURLESS LIQUID.  
SLIPPING HAZARD. ISOLATE AREA.  
CAUSES EYE AND SKIN IRRITATION. HARMFUL IF SWALLOWED.

#### SIGNS AND SYMPTOMS OF SHORT-TERM EXPOSURE:

**SKIN CONTACT:** BRIEF CONTACT IS ESSENTIALLY NONIRRITATING TO SKIN. MAY CAUSE MORE SEVERE RESPONSE IF SKIN IS ABRADED (SCRATCHED OR CUT). MAY CAUSE MORE SEVERE RESPONSE ON COVERED SKIN (UNDER CLOTHING, GLOVES). PROLONGED CONTACT MAY CAUSE SKIN IRRITATION, REDNESS, ITCHING AND EVEN A BURN. CONTACT WITH BROKEN SKIN CAN CAUSE NECROSIS.

**SKIN ABSORPTION:** N/AP.

**EYE CONTACT:** FOR DUST: MAY CAUSE SEVERE EYE IRRITATION. MAY CAUSE CORNEAL DAMAGE. EFFECTS MAY BE SLOW TO HEAL.

**INHALATION:** VAPOURS ARE UNLIKELY DUE TO PHYSICAL PROPERTIES. MIST MAY CAUSE IRRITATION TO UPPER RESPIRATORY TRACT (NOSE AND THROAT).

**INGESTION:** LOW TOXICITY IF SWALLOWED. SMALL AMOUNTS INCIDENTALLY AS A RESULT OF NORMAL HANDLING OPERATIONS ARE NOT LIKELY TO CAUSE INJURY; HOWEVER, SWALLOWING LARGE AMOUNTS MAY CAUSE INJURY. SWALLOWING MAY RESULT IN GASTROINTESTINAL IRRITATION OR ULCERATION.

**POTENTIAL CHRONIC HEALTH EFFECTS:**  
PROLONGED OR REPEATED EXPOSURE TO SKIN MAY CAUSE DRYING, DEFATTING AND DERMATITIS.

**OTHER IMPORTANT HAZARDS:**  
SEE TOXICOLOGICAL INFORMATION, SECTION 11.

#### SECTION 4: FIRST AID MEASURES

**GENERAL:** IF POTENTIAL FOR EXPOSURE EXISTS REFER TO SECTION 8 FOR SPECIFIC PERSONAL PROTECTIVE EQUIPMENT.

**INHALATION:** MOVE PERSON TO FRESH AIR; IF EFFECTS OCCUR, CONSULT A PHYSICIAN.

**SKIN CONTACT:** IMMEDIATELY REMOVE CONTAMINATED CLOTHING. WASH OFF IMMEDIATELY WITH PLENTY OF WATER. IF IRRITATION OCCURS CONTACT A PHYSICIAN.

**EYE CONTACT:** IMMEDIATELY FLUSH WITH PLENTY OF WATER. AFTER INITIAL FLUSHING, REMOVE ANY CONTACT LENSES AND CONTINUE FLUSHING FOR AT LEAST 15 MINUTES. IF EFFECTS OCCUR, CONSULT A PHYSICIAN, PREFERABLY AN OPHTHALMOLOGIST. MAY CAUSE INJURY DUE TO MECHANICAL ACTION.

**INGESTION:** IF SWALLOWED, SEEK MEDICAL ADVICE IMMEDIATELY AND SHOW THIS CONTAINER OR LABEL. DO NOT INDUCE VOMITING WITHOUT MEDICAL ADVICE.

**NOTES TO PHYSICIAN:**  
IF BURN IS PRESENT, TREAT AS ANY THERMAL BURN, AFTER DECONTAMINATION. NO SPECIFIC ANTIDOTE. TREATMENT OF EXPOSURE SHOULD BE DIRECTED AT THE CONTROL OF SYMPTOMS AND THE CLINICAL CONDITION OF THE PATIENT.

#### SECTION 5: FIRE FIGHTING MEASURES

**FIRE HAZARDS/CONDITION OF FLAMMABILITY:**  
THIS MATERIAL DOES NOT BURN.

**FLASH POINT:** N/AP.

**FLASH POINT METHOD:** SETAFLASH CLOSED CUP.      **AUTO IGNITION TEMPERATURE:** N/AV.

**LOWER FLAMMABLE LIMIT:** N/AV.      **UPPER FLAMMABLE LIMIT:** N/AV.  
(% BY VOL.)      (% BY VOL.)

**EXPLOSION DATA: SENSITIVITY TO MECHANICAL IMPACT/STATIC DISCHARGE:**  
NOT EXPECTED TO BE SENSITIVE TO MECHANICAL IMPACT OR STATIC DISCHARGE.

**SUITABLE EXTINGUISHING MEDIA:**  
USE EXTINGUISHING AGENTS APPROPRIATE FOR SURROUNDING FIRE.

**SPECIAL FIRE-FIGHTING PROCEDURES/EQUIPMENT:**  
KEEP UNNECESSARY PEOPLE AWAY, ISOLATE HAZARD AREA AND DENY ENTRY. THIS MATERIAL DOES NOT BURN. FIGHT FIRE FOR OTHER MATERIAL THAT IS BURNING. WATER SHOULD BE APPLIED IN LARGE QUANTITIES AS FINE SPRAY. WEAR NIOSH APPROVED POSITIVE-PRESSURE SELF-CONTAINED BREATHING APPARATUS OPERATED IN PRESSURE DEMAND MODE. WEAR PROTECTIVE FIRE FIGHTING CLOTHING (INCLUDES FIRE FIGHTING HELMET, COAT, TROUSERS, BOOTS AND GLOVES). AVOID CONTACT WITH THIS MATERIAL DURING FIRE FIGHTING OPERATIONS. IF CONTACT IS LIKELY, CHANGE TO FULL CHEMICAL RESISTANT FIRE FIGHTING CLOTHING WITH SELF-CONTAINED BREATHING APPARATUS. IF THIS IS NOT AVAILABLE, WEAR FULL CHEMICAL RESISTANT CLOTHING WITH SELF-CONTAINED BREATHING APPARATUS AND FIGHT FIRE FROM A REMOTE LOCATION. FOR PROTECTIVE EQUIPMENT IN POST-FIRE OR NON-FIRE CLEAN-UP SITUATIONS, REFER TO THE RELEVANT SECTIONS.

**HAZARDOUS COMBUSTION PRODUCTS:**  
METHYL VINYL ETHER – STARTS RUNAWAY POLYMERIZATION REACTION.

#### SECTION 6: ACCIDENTAL RELEASE MEASURES

**LEAK AND SPILL PROCEDURES:**  
SMALL AND LARGE SPILLS: CONTAIN SPILLED MATERIAL IF POSSIBLE. COLLECT IN SUITABLE AND PROPERLY LABELLED CONTAINERS. FLUSH RESIDUE WITH PLENTY OF WATER. SEE SECTION 13, DISPOSAL CONSIDERATIONS, FOR ADDITIONAL INFORMATION. ABSORB WITH MATERIALS SUCH AS SAND, VERMICULITE, EARTH OR SIMILAR MATERIAL. SPILLED MATERIAL MAY CAUSE A SLIPPING HAZARD. ISOLATE AREA. SPILL REMAINS WET FOR LONG PERIOD OF TIME DUE TO CHLORIDE CONTENT. KEEP UNNECESSARY AND UNPROTECTED PERSONNEL FROM ENTERING THE AREA. USE APPROPRIATE SAFETY EQUIPMENT. FOR ADDITIONAL INFORMATION, REFER TO SECTION 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION. REFER TO SECTION 7, HANDLING, FOR ADDITIONAL PRECAUTIONARY MEASURES. PREVENT FROM ENTERING INTO SOIL, DITCHES, SEWERS, WATERWAYS AND/OR GROUNDWATER. SEE SECTION 12, ECOLOGICAL INFORMATION.

#### SECTION 7: HANDLING AND STORAGE

**SAFE HANDLING PROCEDURES:**  
PRODUCT SHIPPED/HANDLED HOT CAN CAUSE THERMAL BURNS. AVOID CONTACT WITH SKIN, EYES AND CLOTHING. WASH THOROUGHLY AFTER HANDLING.

**STORAGE REQUIREMENTS:**

KEEP CONTAINER TIGHTLY CLOSED. PROTECT FROM ATMOSPHERIC MOISTURE. PRODUCT MAY BECOME A SOLID AT TEMPERATURES BELOW 0C (32F) (CONCENTRATIONS ABOVE 36% CALCIUM CHLORIDE). DO NOT STORE IN METAL CONTAINERS WHICH PRODUCT WILL CORRODE. CHLORIDE FUMES MAY CORRODE BARE METAL OVER PERIOD OF TIME.

**INCOMPATIBLE MATERIALS:**

ZINC – (AS IN GALVANIZED IRON) – YIELDS HYDROGEN GAS WHICH MAY EXPLODE UNDER THESE CONDITIONS. WATER REACTIVE MATERIALS (SUCH AS SODIUM) – CAUSES AN EXOTHERMIS REACTION. AVOID BROMINE TRIFLOURIDE. AVOID MIXTURE OF BORON TRIOXIDE & CALCIUM OXIDE.

<b>SECTION 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION</b>
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**EXPOSURE LIMITS**

INGREDIENTS	OSHA PEL	OSHA PEL	
	TWA	PEL (CEILING)	STEL
PARTICLES NOT OTHERWISE REGULATED	TWA 15MG/M <sup>3</sup> (TOTAL) TWA 5 MG/M <sup>3</sup> (RESP)	----	----

SEE COMPOSITION/INFORMATION ON INGREDIENTS, SECTION 2.

**ENGINEERING CONTROLS:**

USE LOCAL EXHAUST VENTILATION, OR OTHER ENGINEERING CONTROLS TO MAINTAIN AIRBORNE LEVELS BELOW EXPOSURE LIMIT REQUIREMENTS OR GUIDELINES. IF THERE ARE NO APPLICABLE EXPOSURE LIMIT REQUIREMENTS OR GUIDELINES, GENERAL VENTILATION SHOULD BE SUFFICIENT FOR MOST OPERATIONS. LOCAL EXHAUST VENTILATION MAY BE NECESSARY FOR SOME OPERATIONS.

**GLOVES/TYPE:**

USE GLOVES CHEMICALLY RESISTANT TO THIS MATERIAL. IF HANDS ARE CUT OR SCRATCHED, USE GLOVES CHEMICALLY RESISTANT TO THIS MATERIAL EVEN FOR BRIEF EXPOSURES. EXAMPLES OF PREFERRED GLOVE BARRIER MATERIALS INCLUDE: NEOPRENE, POLYVINYL CHLORIDE (PVC OR VINYL), NITRILE/BUTADIENE RUBBER (NITRILE OR NBR). AVOID GLOVES MADE OF POLYVINYL ALCOHOL (PVA).

**RESPIRATORY/TYPE:**

RESPIRATORY PROTECTION SHOULD BE WORN WHEN THERE IS A POTENTIAL TO EXCEED THE EXPOSURE LIMIT REQUIREMENTS OR GUIDELINES. IF THERE ARE NO APPLICABLE EXPOSURE LIMIT REQUIREMENTS OR GUIDELINES, WEAR RESPIRATORY PROTECTION WHEN ADVERSE EFFECTS, SUCH AS RESPIRATORY IRRITATION OR DISCOMFORT HAVE BEEN EXPERIENCED, OR WHERE INDICATED BY YOUR RISK ASSESSMENT PROCESS. IN DUSTY OR MISTY ATMOSPHERES, USE AN APPROVED PARTICULATE RESPIRATOR.

**EYE/TYPE:**

WEAR CHEMICAL SAFETY GOGGLES OR FACE SHIELD.

**FOOTWEAR/TYPE:**

USE PROTECTIVE BOOTS CHEMICALLY RESISTANT TO THIS MATERIAL.

**CLOTHING/TYPE:**

USE PROTECTIVE CLOTHING CHEMICALLY RESISTANT TO THIS MATERIAL. SELECTION OF SPECIFIC ITEMS SUCH AS FACE SHIELD, BOOTS, APRON, OR FULLY BODY SUIT WILL DEPEND ON THE TASK. REMOVE CONTAMINATED CLOTHING IMMEDIATELY, WASH SKIN AREA WITH SOAP AND WATER, AND LAUNDRER CLOTHING BEFORE REUSE OR DISPOSE OF PROPERLY.

**OTHER/TYPE:**

USE GOOD PERSONAL HYGIENE. DO NOT CONSUME OR STORE FOOD IN THE WORK AREA. WASH HANDS BEFORE SMOKING AND EATING.

<b>SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES</b>
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<b>PHYSICAL STATE:</b>	LIQUID	<b>APPEARANCE:</b>	CLEAR
<b>ODOUR:</b>	ODOURLESS	<b>ODOUR THRESHOLD:</b>	ODOURLESS TO MILD ODOUR
<b>PH:</b>	9 ESTIMATED (UNDILUTED)	<b>BOILING POINT:</b>	110 – 122°C (230 – 252°F)
<b>SPECIFIC GRAVITY:</b>	1.275 – 1.439 (32% = 1.322) (35% = 1.35)	<b>MELTING/FREEZING POINT:</b>	N/AP.
<b>VAPOUR DENSITY (AIR=1):</b>	SAME AS WATER	<b>SOLUBILITY IN WATER:</b>	COMPLETELY MISCIBLE WITH WATER
		<b>VAPOUR PRESSURE (mmHg) @ 25°C:</b>	9 – 15mmHg
<b>MOLECULAR WEIGHT:</b>			
<b>MOLECULAR FORMULA:</b>	CaCl <sub>2</sub>		

<b>SECTION 10: REACTIVITY AND STABILITY DATA</b>
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**STABILITY AND REACTIVITY:**

STABLE UNDER NORMAL CONDITIONS.

**CONDITIONS TO AVOID:** NONE KNOWN. AVOID CONTACT WITH SULFURIC ACID. CORROSIVE TO METALS. AVOID CONTACT WITH METALS SUCH AS BRASS, FERROUS METALS AND MILD STEEL. FLAMMABLE HYDROGEN MAY BE GENERATED FROM CONTACT WITH METALS SUCH AS ZINC AND SODIUM. REACTION OF BROMIDE IMPURITY WITH OXIDIZING MATERIALS MAY GENERATE TRACE LEVELS OF IMPURITIES SUCH AS BROMATE.

**HAZARDOUS DECOMPOSITION PRODUCTS:**

DOES NOT DECOMPOSE. HAZARDOUS POLYMERIZATION WILL NOT OCCUR.

**SECTION 11: TOXICOLOGICAL INFORMATION**

**CHRONIC TOXICITY:** FOR THE MINOR COMPONENT(S): POTASSIUM CHLORIDE – IN ANIMALS, EFFECTS HAVE BEEN REPORTED ON THE FOLLOWING ORGANS AFTER INGESTION: GASTROINTESTINAL TRACT, HEART AND KIDNEY. DOSE LEVELS PRODUCING THESE EFFECTS WERE MANY TIMES HIGHER THAN ANY DOSE LEVELS EXPECTED FROM EXPOSURE DUE TO USE. MEDICAL EXPERIENCE WITH SODIUM CHLORIDE HAS SHOWN A STRONG ASSOCIATION BETWEEN ELEVATED BLOOD PRESSURE AND PROLONGED DIETARY OVERUSE. RELATED EFFECTS COULD OCCUR IN THE KIDNEYS.

**CARCINOGENIC STATUS:** THIS PRODUCT IS NOT CLASSIFIED AS A CARCINOGEN BY NTP, IARC OR OSHA.  
**MUTAGENICITY:** THE DATA PRESENTED ARE FOR THE FOLLOWING MATERIAL: CALCIUM CHLORIDE (CaCl<sub>2</sub>) – IN VITRO GENETIC TOXICITY STUDIES WERE NEGATIVE. THE DATA PRESENTED ARE FOR THE FOLLOWING MATERIALS: POTASSIUM CHLORIDE – IN VITRO GENETIC TOXICITY STUDIES WERE POSITIVE. HOWEVER, THE RELEVANCE OF THIS TO HUMANS IS UNKNOWN. FOR THE MINOR COMPONENT(S): SODIUM CHLORIDE – IN VITRO GENETIC TOXICITY STUDIES WERE PREDOMINANTLY NEGATIVE.

**SENSITIZATION TO MATERIAL:**

NO INFORMATION AVAILABLE.

**SYNERGISTIC MATERIALS:** NO INFORMATION AVAILABLE.

**MEDICAL CONDITIONS AGGRAVATED BY OVEREXPOSURE:**

NO INFORMATION AVAILABLE.

**ADDITIONAL HEALTH HAZARDS:**

FOR THE MAJOR COMPONENT(S): DID NOT CAUSE BIRTH DEFECTS OR ANY OTHER FETAL EFFECTS IN LABORATORY ANIMALS.

**SECTION 12: ECOLOGICAL INFORMATION**

**ENVIRONMENTAL EFFECTS:**

BIODEGRADATION IS NOT APPLICABLE.

**IMPORTANT ENVIRONMENTAL CHARACTERISTICS:**

NO BIOCONCENTRATION IS EXPECTED BECAUSE OF THE RELATIVELY HIGH WATER SOLUBILITY. POTENTIAL FOR MOBILITY IN SOIL IS VERY HIGH (KOC BETWEEN 0 AND 50). PARTITIONING FROM WATER TO N-OCTANOL IS NOT APPLICABLE.

**ECOTOXICOLOGICAL:**

MATERIAL IS PRACTICALLY NON-TOXIC TO AQUATIC ORGANISMS ON AN ACUTE BASIS.

LC50/EC50/EL50/LL50 > 100MG/L IN THE MOST SENSITIVE SPECIES TESTED.

**FRESHWATER FISH TOXICITY**

CALCIUM CHLORIDE: LC50, BLUEGILL (LEPOMIS MACROCHIRUS): 8350-10650MG/L

POTASSIUM CHLORIDE: LC50, RAINBOW TROUT (ONCORHYNCHUS MYKISS), 96H: 4236MG/L

SODIUM CHLORIDE: LC50, FATHEAD MINNOW (PIMEPHALES PROMELAS): 10610MG/L

**INVERTEBRATE TOXICITY**

CALCIUM CHLORIDE: LC50, WATER FLEA DAPHNIA MAGNA: 759-3005MG/L

POTASSIUM CHLORIDE: EC50, WATER FLEA DAPHNIA MAGNA, 24H, IMMOBILIZATION: 590MG/L

LC50, WATER FLEA CERIODAPHNIA DUBIA, 96H: 3470MG/L

SODIUM CHLORIDE: LC50, WATER FLEA DAPHNIA MAGNA: 4571MG/L

**MICROORGANISM TOXICITY**

SODIUM CHLORIDE: IC50, OECD 209 TEST; ACTIVATED SLUDGE, RESPIRATION INHIBITION: >1000MG/L

**SECTION 13: DISPOSAL CONSIDERATIONS**

**HANDLING FOR DISPOSAL:** REUSE OR RECYCLE IF POSSIBLE.

**METHOD OF DISPOSAL:** ALL DISPOSAL PRACTICES MUST BE IN COMPLIANCE WITH ALL FEDERAL, STATE/PROVINCIAL AND LOCAL LAWS AND REGULATIONS.

**SECTION 14: TRANSPORTATION INFORMATION**

**PROPER SHIPPING NAME:** CALCIUM CHLORIDE SOLUTION  
**TDG CLASSIFICATION:** NOT REGULATED.

**SECTION 15: REGULATORY INFORMATION**

WHMIS CLASSIFICATION: D2B

**SECTION 16: OTHER INFORMATION**

<b>LEGEND:</b>	CAS #	CHEMICAL ABSTRACTS SERVICE REGISTRY NUMBER
	IARC	INTERNATIONAL AGENCY FOR RESEARCH ON CANCER
	LC	LETHAL CONCENTRATION
	LD	LETHAL DOSE
	N/AP.	NOT APPLICABLE
	N/AV.	NOT AVAILABLE
	NIOSH	NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH
	NTP	NATIONAL TOXICOLOGICAL PROGRAM
	OSHA	OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION
	PEL	PERMISSIBLE EXPOSURE LIMIT
	TDG	TRANSPORTATION OF DANGEROUS GOODS ACT/REGULATIONS
	TWA	TIME WEIGHTED AVERAGE
	WHMIS	WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM

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