

Comet Chemical Company Ltd.

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Materials Safety Data - CALCIUM CHLORIDE (dihydrate)

Shipping Name	UN - not regulated for transport
Transport of Dangerous Goods Class	not regulated for transport
WHMIS Class	D 2B (borderline - see section 4)
Material Use	antifreeze, flocculant in waste water, ice melting

1. HAZARDOUS INGREDIENTS

	CAS NUMBER	%	TWAEV (ppm)	LD ₅₀ ORAL	(mg/kg) SKIN	LC ₅₀ ppm INHALATION
Calcium Chloride (dihydrate)	10035-04-8	77%*	none listed	1000	not known	not known

* The impurity is the water of hydration.

2.

PHYSICAL CHARACTERISTICS

Odour & Appearance	white flakes or pellets; strongly hygroscopic and deliquescent
Odour Threshold	none, odourless
Vapour Pressure	none
Vapour Density (air = 1)	water vapour forms at 200°C - no other vapour created
Boiling Point	1670°C
Melting Point	176°C - but loses water of hydration at 200°C; anhydrous CaCl ₂ melts at 772°C
Specific Gravity	1.85
Water Solubility	980 grams per litre (0°C) (dihydrate); 370 grams per litre (0°C) (anhydrous) Also soluble in acetone, ethanol and acetic acid
Hygroscopic	picks up 1g water per gram CaCl ₂ at 40% relative humidity (dihydrate)
pH	8.0 - 9.0 (35% solution) slightly alkaline,

3.

FLAMMABILITY & REACTIVITY

Flash Point	none – will not burn
Autoignition Temperature	none
Hazardous Combustion Products	none
Firefighting Precautions	as for flammable materials sustaining fire
Sensitivity to Static Discharge	not sensitive
Sensitivity to Mechanical Impact	not sensitive
Chemical Stability	stable; will not polymerize
Reactive With	boiling water – rapidly generates heat; vigorous reaction with B ₂ O ₃ , CaO, BrF ₃ , furan-2-peroxycarboxylic acid, vinyl methyl ether; reacts slowly with zinc (galvanized metals) yielding hydrogen gas; corrodes some stainless steels
Dangerous Decomposition Products	none

4.

TOXICOLOGY

EFFECTS OF ACUTE EXPOSURE

Skin Contact	little effect
Skin Absorption	slight, if any
Eye Contact	irritating, may damage eyes (<i>only reason for D 2B classification</i>)
Inhalation	dust irritating and osmotically dehydrating
Ingestion	low toxicity; << very bitter taste strongly discourages ingestion >>

(Calcium Chloride (dihydrate), cont'd)

EFFECTS OF CHRONIC EXPOSURE

General	prolonged exposure may cause irritation
Sensitising	no
Carcinogenic	no effects documented in humans
Reproductive Effect	in vitro mutagenic data equivocal; no effects documented in humans
Synergistic With	not known
Estimated LD ₅₀	1000 mg/kg (oral, rat), 1950mg/kg (oral, mouse)
Estimated LC ₅₀	no data

5. PROTECTIVE EQUIPMENT

Hands	not required
Eyes	chemical safety goggles
Respirator	not required
Clothing	not required

6. ENVIRONMENT

Leak Precaution	not required
Handling Spill	sweep and shovel before product absorbs moisture and dissolves making clean-up more difficult
Waste Disposal	do not flush to sewer without dilution to at least 50:1 ; not a hazardous waste; may be dumped in sanitary landfill, but consult local authorities first

7. STORAGE & HANDLING

Store and use in a dry environment. Avoid dust generation which may be astringent to breathe. Avoid prolonged contact with skin and wash work clothes frequently. An eye bath and safety shower should be available near the workplace. This product avidly absorbs moisture from the air, eventually dissolving in its own puddle. The solution is slippery and may become dangerous for this reason. **NOTE: This product generates considerable heat as it dissolves in water. Addition of this product to hot water may cause boiling!**

8. FIRST AID

SKIN:	Wash with plenty of water. Remove contaminated clothing and do not reuse until thoroughly laundered.
EYES:	Wash eyes with plenty of water, holding eyelids open. Seek medical assistance promptly if there is any irritation.
INHALATION:	Remove from contaminated area promptly. CAUTION: Rescuer must not endanger himself! If breathing stops, administer artificial respiration and seek medical aid promptly.
INGESTION:	Give plenty of water to dilute product. Do not induce vomiting (NOTE below). Keep victim quiet. If vomiting occurs, keep victim's head below hips to prevent inhalation of vomited material. Seek medical help promptly.

NOTE: Inadvertent inhalation of vomited material may seriously damage the lungs. The risk and danger of this is greater than the risk of poisoning through absorption of this product. The stomach should be emptied under medical supervision, after the installation of an airway to protect the lungs.

Emergency telephone numbers	- weekdays from 8:00 - 5:00	(705) 436-5580
	at all other times	(800) 567-7455 (Philip Environmental)

Prepared for Comet Chemical Co. Ltd., by Nicholas Morgan, September 2002; Revised August 2005

The information herein is given in good faith but no warranty, expressed or implied is made.

PLEASE ENSURE THAT THIS MSDS IS GIVEN TO AND EXPLAINED TO THE PERSON USING THIS PRODUCT.