Honeywell

Calcium Chloride

Product Stewardship Summary February 2012

$CaCl_2$ and $CaCl_2 \cdot 2H_2O$

Chemical Name:	Calcium chloride
Chemical Category (if applicable):	Inorganic salt
Synonyms:	Calcium chloride, anhydrous; Calcium dichloride; Calcium(II) chloride; Calcium (2+) chloride; Anhydrous calcium chloride; $CaCl_2$ Calcium chloride, dihydrate; Calcium dichloride, dihydrate; Calcium chloride-2-hydrate; $CaCl_2 \cdot 2H_2O$
CAS Number:	10043-52-4 (anhydrous) and 10035-04-8 (dihydrate)
CAS Name:	Calcium chloride, anhydrous and Calcium chloride, dihydrate
EC (EINECS) Number:	233-140-8
Other identifier (Please specify):	GPS0052

- Calcium chloride, anhydrous and calcium chloride, dihydrate are odorless white solids. Commercial calcium chloride products are supplied as flakes, pellets, powders. Calcium chloride is used to form brine in refrigeration plants and to control ice and dust on roads. It is also used as a desiccant, a sequestrant and firming agent in the food industry, an intravenous injection therapy for treatment of hypocalcemia in medicine, an additive to concrete mixes to help speed up initial setting, a pH buffer to adjust pH and calcium hardness in swimming pool water, an additive in plastics and fire extinguishers, a drainage aid in wastewater treatment, an additive in blast furnaces to control scaffolding (clumping and adhesion of materials that prevent the furnace charge from descending), and a thinner in fabric softeners. In the oil industry, calcium chloride is used to increase the density of solids free brines and to provide inhibition of swelling clays in the water phase of invert emulsion drilling fluids.

- The primary risks of worker exposure to calcium chloride are dermal contact and/or inhaling its dust during its production, processing, storage and use. The risk is considered minimal because exposures to calcium chloride dust are controlled with process enclosures, local exhaust ventilation, general dilution ventilation, and use of personal protective equipment. Although there are no occupational exposure limits established specifically for calcium chloride, OSHA's PEL for nuisance dusts (particulates not otherwise classified) have been established in worksite safety programs. Please refer to the MSDS for additional information. Although low levels of exposure to calcium chloride by the general public and consumers are common via ingestion of foods and medication containing calcium chloride or by skin contact and inhalation of dusts from calcium chloride products used to deice and stabilize roadways, the risk of detrimental effects is considered negligible.

- Calcium chloride, anhydrous and calcium chloride, dihydrate are both odorless solids in the form of white pellets, flakes or powders. Calcium chloride is hygroscopic and will pick up

moisture from the air and go into solution if exposed in open containers. Dust generation, excess heat, and exposure to moist air or water should be avoided. Calcium chloride is incompatible with water, methyl vinyl ether, zinc, bromine trifluoride, mixtures of lime and boric acid, barium chloride, and 2-furan percarboxylic acid. Metals will slowly corrode in aqueous calcium chloride solutions. Aluminum (and alloys) and yellow brass will be attacked by calcium chloride.

- Exposure to calcium chloride dust can irritate the skin, nose, throat and lungs. It will cause severe eye irritation. The potential for calcium chloride to cause acute and chronic (repeated or prolonged) toxic effects by the oral, dermal or inhalation routes is low.

- Calcium chloride is not considered carcinogenic to humans and it will not cause reproductive or developmental effects.

- When released into the environment, the physico-chemical properties of calcium chloride indicate it will be distributed into the water compartment in the form of calcium and chloride ions. It is considered practically nontoxic to aquatic organisms (e.g., fish, invertebrates and algae). There is some potential for calcium chloride to harm roadside terrestrial plants when excess amounts are used for deicing and stabilizing roadways.

- Please contact us for more information. Additional information may also be found at the following links:

  OECD SIAP - Calcium Chloride

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