

## Calcium Chloride *Market Reviews*

### Industrial Uses

## 1 Review of Applications

Calcium chloride offers a unique combination of properties that makes it a valuable in many uses. The following list indicates the range of applications that it is used in.

Market	Use
Agriculture	<ul style="list-style-type: none"> <li>▪ Inexpensive source of soluble calcium in animal feed additives</li> <li>▪ Prevents drying out of fertilizers</li> </ul>
Air and gases	<ul style="list-style-type: none"> <li>▪ Drying compound</li> </ul>
Building maintenance	<ul style="list-style-type: none"> <li>▪ Controls snow and ice</li> </ul>
Cement	<ul style="list-style-type: none"> <li>▪ Additive to kiln feed or fuel to volatilize alkalis in Portland cement, eliminating alkali-silica reactions in finished concrete</li> </ul>
Ceramics	<ul style="list-style-type: none"> <li>▪ Glazing ingredient</li> <li>▪ Reduces porosity</li> </ul>
Chemical manufacture	<ul style="list-style-type: none"> <li>▪ Inexpensive source of calcium for calcium salts and alloys</li> <li>▪ Phosphorous manufacture</li> <li>▪ Lowers molten bath temperature in sodium and magnesium production</li> <li>▪ Precipitating agent in glycerol manufacture</li> <li>▪ Lithium, barium and ammonium chloride</li> <li>▪ Production of many calcium compounds, e.g., calcium soaps and calcium cyanide, arsenate, fluoride, peroxide, phosphate, stearate, tungstate and tetraborate</li> <li>▪ Precipitating agent and de-aerator for dyes</li> </ul>
Construction	<ul style="list-style-type: none"> <li>▪ Concrete additive to accelerate set in cold weather</li> <li>▪ Solidifies loose, sandy soils when injected with sodium silicate</li> <li>▪ Improves compaction of soil during construction</li> <li>▪ Improves traction by increasing tire weight</li> </ul>
Dehumidification	<ul style="list-style-type: none"> <li>▪ Drying of air in stores, plants and other facilities</li> </ul>
Dehydration	<ul style="list-style-type: none"> <li>▪ Drying of industrial gases and natural gas for pipeline transmission</li> </ul>
Detergent	<ul style="list-style-type: none"> <li>▪ Controls density in fabric softener concentrates</li> </ul>
Electronics	<ul style="list-style-type: none"> <li>▪ Reacts with phosphors to form a white coating inside fluorescent bulbs and TV screens</li> </ul>
Energy	<ul style="list-style-type: none"> <li>▪ Heat storage compound</li> </ul>
Fertilizers	<ul style="list-style-type: none"> <li>▪ Removes fluorides in processing phosphate rock</li> </ul>
Fire protection	<ul style="list-style-type: none"> <li>▪ Antifreeze solution in fire pails, fire extinguishers and sprinkler systems</li> </ul>
Food processing	<ul style="list-style-type: none"> <li>▪ Firming agent in pickling and canning fresh fruits and vegetables</li> <li>▪ Adjusts water hardness in beverage production</li> <li>▪ Precipitates milk and hastens curdling in cheese production</li> <li>▪ Calcium replacement in cheese</li> <li>▪ Humectant and gel depressant</li> </ul>
Forest products	<ul style="list-style-type: none"> <li>▪ Dust control for haul roads</li> </ul>

Glass and ceramics	<ul style="list-style-type: none"> <li>Fluoride removal</li> </ul>
Heat treating	<ul style="list-style-type: none"> <li>Salt used in heat treating</li> </ul>
Metals	<ul style="list-style-type: none"> <li>Furnace additive in steel and iron manufacture to eliminate the alkalis that attack refractory and form alkali scale and scaffolding</li> <li>Removes fluorides in finishing and electroplating</li> <li>Removes fluorides in steel manufacture</li> <li>Recovers tungsten from scrap</li> <li>Refine tungsten-bearing ores</li> <li>Leach copper ores by chloride roasting</li> <li>A heat-treating salt for hardening specialty steels</li> </ul>
Medical	<ul style="list-style-type: none"> <li>Freeze-point depressant in cold pack dressings</li> <li>Provides heat in hot pack compresses through its heat of solution</li> </ul>
Mining	<ul style="list-style-type: none"> <li>Freezeproofing and thawing agent for coal, ore, coke, gravel and sand piles</li> <li>Adds flame resistance to brattice cloth used in mine ventilation</li> <li>Controls dust for haul roads</li> <li>Controls dust in handling of coal and ores</li> </ul>
Paper manufacture	<ul style="list-style-type: none"> <li>Provides artificial water hardness to improve the web strength of corrugating board.</li> <li>Source of calcium ions in de-inking recycled paper</li> <li>Improves drainage</li> </ul>
Petroleum	<ul style="list-style-type: none"> <li>Increases density of oil well completion and workover fluids</li> <li>Accelerates set of concrete used to finish oil wells</li> <li>Drilling mud additive to reduce shale hydration and increase mud density</li> <li>Absorbs water from petroleum distillates</li> </ul>
Plastics	<ul style="list-style-type: none"> <li>Suspending agent in suspension polymerization of various plastics</li> <li>Controls size of polymer particles</li> </ul>
Railroad maintenance	<ul style="list-style-type: none"> <li>Prevents weed killer from drying out and becoming flammable</li> </ul>
Refrigeration	<ul style="list-style-type: none"> <li>Lowers the freezing point of brine</li> </ul>
Road and highway	<ul style="list-style-type: none"> <li>Controls dust on unpaved roads, parking lots and driveways</li> <li>Stabilizes unpaved roads and shoulders by retaining moisture to limit loss of fines, which helps retain aggregate</li> <li>Stabilizes shoulders and bases</li> <li>Controls snow and ice</li> <li>Stabilizes base for full-depth reclamation</li> <li>Filling for crash barriers</li> </ul>
Rubber	<ul style="list-style-type: none"> <li>Coagulant for latex</li> </ul>
Soil solidification	<ul style="list-style-type: none"> <li>Used with sodium silicate to solidify loose, sandy soils</li> </ul>
Solar heating	<ul style="list-style-type: none"> <li>Heat storage medium in solution</li> </ul>
Tire weighting	<ul style="list-style-type: none"> <li>Improves traction in off-road tires</li> </ul>
Wastewater treatment	<ul style="list-style-type: none"> <li>Removes fluorides by precipitation</li> <li>Breaks emulsions in oily wastes</li> <li>Densifies floc to remove silicates</li> <li>Removes fluorides and phosphorous</li> </ul>
Water treatment (potable)	<ul style="list-style-type: none"> <li>Re-mineralizes calcium-poor water</li> <li>Aids coagulation</li> <li>Removes excess alkalinity</li> </ul>

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