# CMA

**Questions & Answers**

**Why was CMA developed?** There has long been a concern for damage to the environment and to structures like bridges and parking garages caused by the sue of chloride de-icers. In the 1970's, the Federal Highway Administration (FHWA) identified calcium magnesium acetate as the only low-corrosion chemical alternative to road salt that also protected the environments. Years of research and field applications have proven CMA is no more corrosive than tap water and does not harm vegetation or receiving waters.

**Does CMA affect the environment?** When absorbed into the soil, CMA's calcium and magnesium components benefit the soil structure; just as liming a garden improves permeability. The acetate portion of CMA biodegrades naturally.

**Does CMA cause corrosion on roads, bridges, parking garages, etc?** No significant corrosion of steel, aluminium, or concrete has been found in repeated tests with CMA sponsored by the FHWA, states, and private researchers.

**Is there government awareness of CMA?** In 1991, Congress passed the Intermodal Surface Transportation Efficiency Act (ISTEA) providing states with 80% reimbursement for use of CMA on bridges, overpasses and approaches.

| Environmental Impact | CMA | Chloride Ice Melters |
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| Soils | Biodegradable in soil. No adverse effect on soil compaction and strength. Increases soil permeability. | Chloride may accumulate in soil. Breaks down soil structure, increases erosion. Causes soil compaction, which decreases permeability. |
| Vegetation | Little or no adverse effect. May stimulate plant growth. Acetate ion is the most abundant organic acid metabolite found in nature. | Osmotic stress and soil compaction harm root systems. Spray causes foliage dehydration damage. Many plant species are salt sensitive. |
| Groundwater | Poor mobility in soil, unlikely to reach groundwater. Ca, Mg increases water hardness. | Mobile Na and Cl ions readily reach groundwater. Increases Na and Cl concentrations in well water along with alkalinity and hardness. |
| Surface Water | Potential for oxygen depletion through biological oxygen demand (BOD) at concentrations greater then 100 ppm in closed systems. Decomposes in 5 days at 20 C, 10 days at 10 C, 100 days at 2 C. Will not stimulate algae growth. | Causes density stratification in ponds and lakes, which can prevent reoxygenation. Increases runoff of heavy metals and nutrients through increased erosion. |