

# DUST CONTROL

& Road Base Stabilization

**CALCIUM CHLORIDE...  
SAFE ROADS IN ALL SEASONS**



TETRA

# Better Roads...

## Last Longer & Cost Less

Country roads conjure up memories of a pleasant time when life was simpler and moved at a slower pace. Progress, though, demands that our unpaved country roads begin to handle increased traffic, or, budget permitting, be upgraded to pavement. Unfortunately, with progress also comes performance problems and higher costs, associated with increased maintenance and new construction.

Excessive dust from secondary roads is a symptom of a disappearing road. As the road loses its riding surface it becomes more hazardous; it loses its functionality. It is a road being blown away, a road that has to be rebuilt. There is a simple solution.

First used on secondary roads over one hundred years ago, calcium chloride is one of the most effective tools available to road maintenance crews to enhance road safety and performance, while at the same time reducing labor and costs.

### Why Calcium Chloride?

Calcium chloride has unique properties that make it ideal for maintaining unpaved roads and fortifying road bases for new construction. It is both **hygroscopic** (draws moisture from the air) and **deliquescent** (resists evaporation and stays in solution).

It is calcium chloride's ability to regulate moisture on road surfaces that is the key to building roads that last.

### Surface Treatment For Unpaved Roads

The bottom line is... *you want that dust! Right where it is...* as an integral part of your unpaved road. Road dust, or fines, are vital to maintaining the surface of a



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secondary road. Fines are the 'glue' that holds a road surface together.

Studies show that a single car driving one mile once a day will create a swirling wind that vacuums one ton of dust from the road over the course of a year! Multiplied by 25 or 50, this dust can become a real problem.

Dust control, or surface stabilization, offers a number of important benefits.

### Safe Driving, Fewer Complaints

When dust gets free, it becomes a visibility hazard for drivers. It's also a health hazard to nearby residents and an environmental hazard when it coats the leaves of sensitive crops.

Calcium chloride keeps roads moist, day-in and day out, keeping nuisance dust down. Reduced pot-holing and rutting made possible by calcium chloride surface stabilization makes roads safer year round.

### Reduced Aggregate Loss

As fines are lost to the air, voids are created between larger sized surface particles, and unpaved roads begin to loosen. As the road begins to degrade, expensive aggregate is pushed to the side of the road by daily traffic. This road will require continual re-grading or replacement of the aggregate to stay in good condition.

Stabilized calcium chloride roads can reduce aggregate loss by up to 75%. In addition, they significantly reduce the frequency and costs associated with periodic grading.

### Reduced Workover Expense

As unpaved roads begin to break down, the modified A-shaped crown flattens, causing drainage problems. Fixing the road will often require repeated blading to restore it to top condition.

Studies show that calcium chloride roads require only one-third to one-fifth the amount of blading that untreated roads need. By using calcium chloride in spring, summer and fall, you can dramatically reduce your maintenance costs and put your road maintenance team to work on other tasks.

Quality streets and highways begin with upgrading the engineering properties of soils used in pavement construction. The same qualities that make calcium chloride ideal for surface stabilization on unpaved roads, build quality into road bases, helping them maintain their integrity for decades.



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### An Intermediate Step Before Paving

Unpaved roads that have had their surfaces stabilized by calcium chloride for dust control have the added advantage of requiring less work prior to upgrading. That's because the effects of calcium chloride are additive over time — fines

stay in place, aggregate is more tightly bound and density is improved.

Calcium chloride helps maintain the road's crown or "roof" of the road. Roads that will be asphalt-paved in the near-term receive two benefits from calcium chloride treatment — dust control and base stabilization.

### Enhanced Compaction

The maintenance of optimal moisture levels during surface preparation of road bases is the most important factor in achieving maximum density and surface

during the compaction process. This accelerates the interlocking of aggregate particles and the road base can be finished with fewer rollings. The use of calcium chloride in road base construction will reduce the overall costs of construction, easing grade-out while increasing the load bearing capacity and firmness of the road base.

Calcium chloride's moisture regulating qualities are particularly important for road base construction during summer months, when maintaining proper moisture levels is difficult due to rapid evaporation.

Calcium chloride's resistance to evaporation makes it the ideal alternative to water in hot weather application.

### Protection Against Frost Heaving

Uniform compaction and residual calcium chloride helps protect road bases from winter freezing and related frost heaving. Long known as an effective ice melter, calcium chloride lowers the freezing point of moisture in road bases to nearly 60 degrees below zero.

### Long Term Protection

Calcium chloride protection of unpaved roads and road bases is cumulative and long-lasting. The migration of calcium chloride from road bases is minimal. Studies have shown that calcium chloride is still present and providing stabilization in road sub-bases nearly 30 years after initial construction.

uniformity necessary to prevent base failures.

Studies have shown that a moisture variation of only 1% from optimum may reduce density by over two pounds per cubic foot, and increase voids by as much as 8%.

Properly applied, calcium chloride can maintain moisture levels between 7-8%

