



# LIQUIDOW Liquid Calcium Chloride

**Compare dust control materials by all measures, and nothing measures up to LIQUIDOW calcium chloride**

No matter what you compare to LIQUIDOW® liquid calcium chloride, or how you compare them, LIQUIDOW is clearly the superior choice in dust control agents.

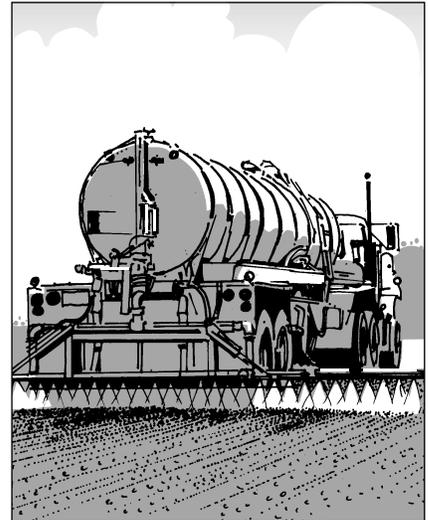
Calcium chloride is hygroscopic, meaning it attracts moisture from the air and its surroundings. This keeps unpaved surfaces damp and dust down. It also resists evaporation so a single application lasts a long time.

Calcium chloride also exhibits a strong moisture film, high surface tension, and low vapor pressure. These characteristics and calcium chloride's thirst for moisture help bind aggregate particles together. Unpaved surfaces become and remain compacted. Over time, the chemical penetrates the surface several inches, adding a

stabilizing effect to reduce frost damage and overall wear. Maintenance costs for a calcium chloride-treated road are much less than untreated roads.

Finally, and very important, when calcium chloride is applied properly, it poses no environmental concerns. After all, LIQUIDOW is a naturally-occurring brine found underground that is rigorously processed to remove impurities.

No other material offers all these performance advantages. So no other material delivers such a high level of cost-efficiency. The table on the back side of this data sheet summarizes why no other material measures up to the performance of LIQUIDOW liquid calcium chloride.



## Base stabilization with LIQUIDOW calcium chloride for better quality roads costing less to build and maintain

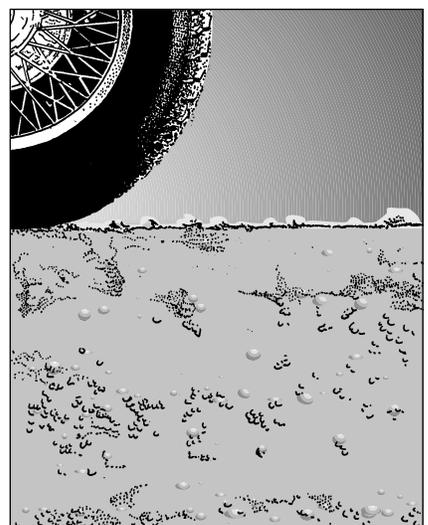
Perhaps the best indication of the superior ability of LIQUIDOW liquid calcium chloride to provide higher quality, lower cost unpaved road surfaces is its long history as the only dust control material used to enhance road base stability.

Whether building new roads or rehabilitating old roads (by conventional methods or the full-depth reclamation technique), calcium chloride's contributions are the same.

- Achieve greater density with less compactive effort, resulting in labor, equipment, and equipment maintenance savings.
- Achieve and maintain optimum moisture content to avoid delays waiting for bases to dry out or for water to be added.

- Calcium chloride extends and controls the curing period which enhances stability.
- Promotes a better bond between the road base and the surface course.
- Provides greater surface uniformity and reduced maintenance during stage construction.
- As little as one half of one percent calcium chloride virtually eliminates frost damage.

For information on both dust control and base stabilization application guidelines, as well as professional references in your area, call our Customer Information Center at 1-800-447-4369.



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### Comparing Dust Control Materials

Material description/comments	Dust Control Performance	Typical Application Frequency	Stabilizing Effects	Consistency of Product Quality/ Performance	Environmental Concerns	Estimated Annual Cost <sup>1</sup> Per Square Foot (U.S. Dollars)	Overall Value Rank
LIQUIDOW liquid calcium chloride: a quality controlled high strength solution of calcium chloride in water, this material offers the properties of hygroscopicity, strong moisture films and high surface tension. It constantly draws moisture to itself to provide long-lasting dust control while contributing to base stabilization.	Excellent	Every 3-6 months	Excellent	Excellent	Low	\$0.02	1
Magnesium chloride: a material produced by solar evaporation, magnesium chloride also attracts moisture and resists evaporation, but only in conditions of moderate temperature (71°F or less) and relatively high humidity (> 31%). A product of solar evaporation, concentrations of magnesium chloride are not strictly controlled and may vary widely from shipment to shipment.	Good to poor depending on chemical concentration	Every 3-6 months	Fair	Varies	Low	Not studied, but application rate typically ~20% greater than calcium chloride	2
Oil emulsions: these products are simply oil in water and may cost several times more than other dust control agents. They are also sticky and messy, and may choke roadside vegetation. Emulsions create a brittle crust on road surfaces that can fragment and allow potholes and ruts to develop, creating excessive repair costs.	Good	Every 2-3 months	Poor	Good	High	\$0.07-0.26	3
Lignosulphonate: a gummy substance generated as a byproduct of paper mills, lignin sulfonate exhibits an offensive odor, and can cause surfaces to become slippery when wet. This material makes no contribution to long-term stability or overall surface or base quality.	Poor	4-6 times per year	None	Varies	High	Varies by geography	5
Surfactants: these soap-like substances have generally proven ineffective because they do not resist evaporation. Bureau of Mines testing has concluded surfactants are ineffective.	Poor	As needed	None	Varies	Low	Not studied	6
Water: water is generally considered a very short-term solution that is extremely expensive and provides no contribution to road quality.	Poor	As needed	None	Excellent	Low	Not studied, but generally considered more expensive than other materials	7
Unprocessed brines: these materials are moderately effective, only if they contain significant percentages of calcium chloride or magnesium chloride. Typically, however, concentrations of effective materials are low, thereby requiring more frequent application and higher total costs.	Fair to poor	6-8 times per year	Poor	Varies	Varies	Not studied	4

<sup>1</sup>Alaska Department of Transportation and Public Facilities, 1994.

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