

Product Evaluation

RE: Formula 35 Premium Dust Control

PRODUCT

Tiger Calcium's Formula 35 Premium Dust Control is a liquid calcium chloride formula. It is manufactured by and distributed in Alberta by Tiger Calcium located in Nisku, Alberta. Website: <https://www.tigercalcium.com/>

VENDOR CLAIMS AND INFORMATION

CLAIMS

Containing the industry-leading standard of 35% active chlorides, Formula 35 Premium Dust Control is a highly effective dust abatement and soil stabilization solution that also helps protect road bases from freezing and frost heaving. Dust from gravel roads can restrict visibility for drivers presenting a safety hazard, reducing air quality, and contaminating surrounding vegetation. This leads to increased road maintenance costs due to more frequent grading, the loss of aggregate material and frost heaving. Thanks to its hygroscopic properties, Formula 35 reduces dust and stabilizes soil by keeping the surface damp longer, binding the fine particles of dust together and contributing to better compaction of the road material. Roads treated with Formula 35 are more stable and have a decreased rate of deterioration resulting in a reduction in the costs associated with maintenance and the reapplication of aggregate.

DESCRIPTION

Tiger Calcium's proprietary process produces a true 35% active chloride solution by removing most of the sodium chloride, potassium chloride, iron and other contaminants that can be harmful to the environment. Active chlorides are important in dust control and base stabilization products as they are the component that reacts to inhibit evaporation, increase roadbed moisture, and keep fine particles compact. Other chlorides (sodium, potassium) are unable to independently extract moisture from the environment, as they require such a significantly high level of humidity to attract moisture that road dust would not be an issue under such conditions. Brines containing high concentrations of sodium and/or potassium chloride are not used for effective dust control because once water evaporates the sodium chloride remains in a solid state, adding to the dust rather than reducing it. Typical Composition: Calcium (Ca²⁺) 11.9% ± 1.1, Magnesium (Mg²⁺) 1.0% ± 0.3, Potassium Chloride (KCl) 1.3% ± 0.4, Sodium (Na⁺) 0.5% ± 0.1, Potassium 0.7% ± 0.2, Calcium Chloride (CaCl₂) 33.0% ± 3.0, Magnesium Chloride (MgCl₂) 4.0% ± 1.0, Sodium Chloride (NaCl) 1.3% ± 0.4

POTENTIAL USAGE

Formula 35 can be used for dust control and base stabilization.

STANDARDS

Biomonitoring Report for Tiger Calcium, Analytical Labs, Boise ID, Aug 2018

ALBERTA TRANSPORTATION COMMENTS

EXPERIENCE

Alberta Transportation has some experience with the use of Liquid Calcium Chloride (brine)

APPLICABLE STANDARDS

Specification 52.6 Calcium Chloride Treated Sand
Specification 53.31 Supply and Apply Dust Abatement

RECOMMENDATIONS

Formula 35 Premium Dust Control be listed as a Proven Product under Alberta Transportation Products List, Dust Abatement – Proprietary, based on the information provided and the field performance.

RESTRICTIONS ON USE

Caveat: Not to be used over the bridge decks.

TRIAL PROJECTS

Formula 35 Premium Dust Control has been used on HWY 58:10:12:14, at the application rate of 1 litres per square meters using supplier's truck. From the experience in this project, it is suggested that any grading should be done when it is damp/wet or it loses effectiveness. In order to prevent leaching to the ditch, it was only applied on the travel portion of the road (i.e. not right to the edge but approximately 5m on a 7m wide road).

Rishi Adhikari

cc New Products Evaluation Group – Roger Skirrow,