



# DM 35

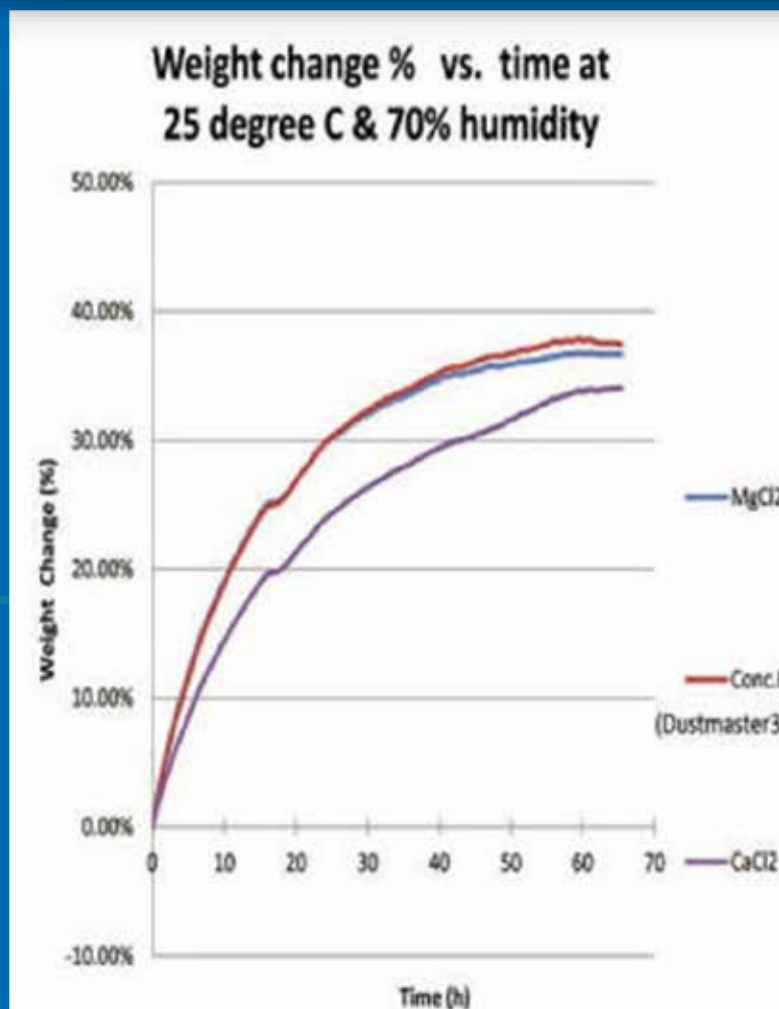
**Calcium Chloride supplemented with Magnesium Chloride as a proprietary liquid blend for Snow & Ice Management as well as Dust & Sedimentation Control**



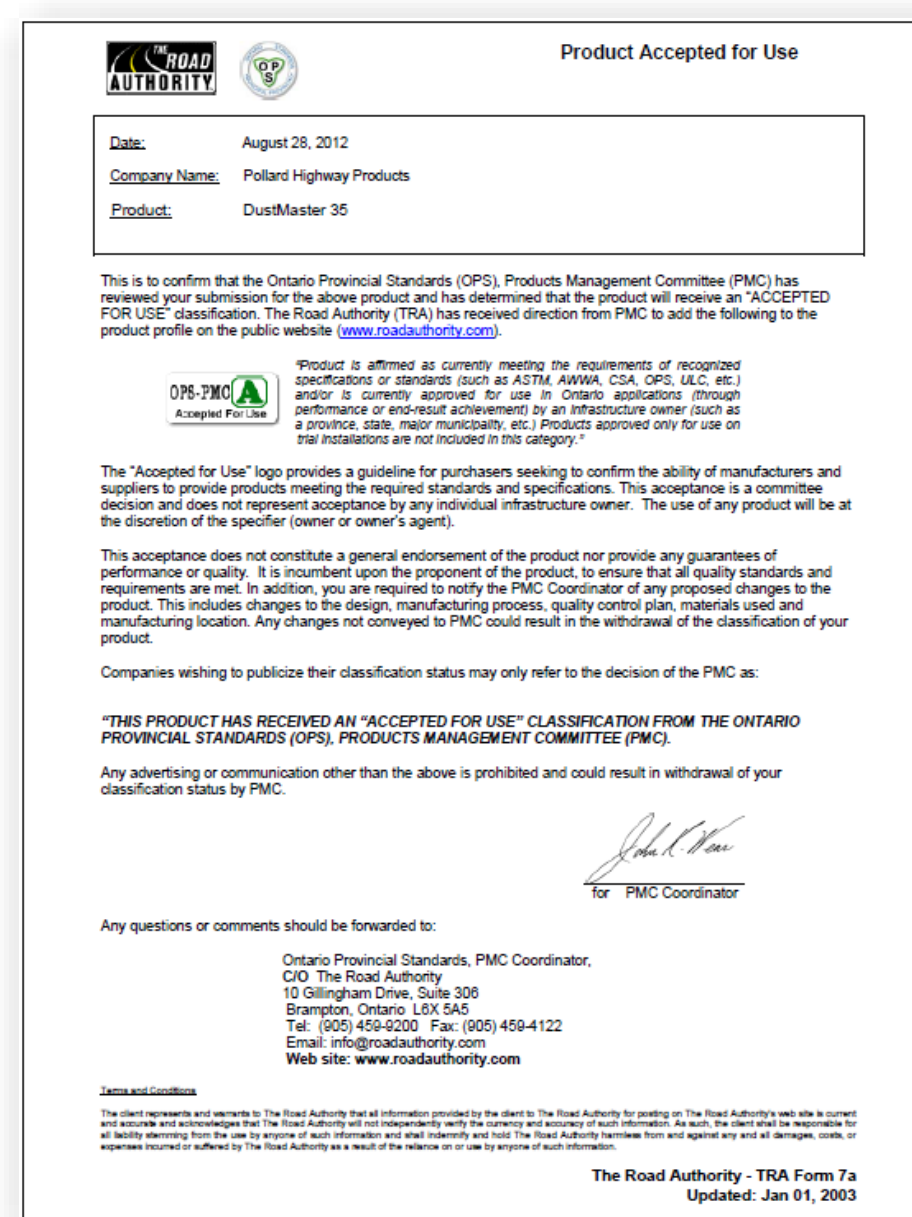
The formulation strategy for DM 35 focused on optimizing field performance across a range of conditions and applications bringing to bear the beneficial characteristics (exothermic, hygroscopic, diverse molecular size) of two exceptional chlorides in a single solution.

Studies comparing the moisture uptake of DM 35 with 30% Magnesium Chloride and 35% Calcium Chloride have established that DM 35 exhibits a very similar ability to absorb and retain water, while achieving the greatest uptake in weight (moisture) in certain conditions compared to the more basic solutions.

Synonymous with other refined chloride solutions, DM 35 is adjusted to an appropriate concentration for low temperature storage and snow and ice applications. This prevents the solubility issues brought forth by the high concentrations of chloride while ultimately achieving a freeze point below -35 degrees F.



The graph is from a study conducted by the University of Windsor "Properties of Mixed Calcium and Magnesium-Chloride Brines for Dust Control and Road Stabilization" April 10, 2012, Keith Taylor, PhD, Wei Feng, M.Eng



| TABLE 1<br>Calcium Chloride Properties |                           |   |                   |
|--|---------------------------|---|-------------------|
| Material/Property                      | Calcium Chloride Solution |   | Test Procedure    |
|  | Dust Suppressant          | De-Icing  |                   |
| Total Settleable Solids                | -                         | <1% (Note 1)                                    | PNS Test Method C |
| Corrosion Inhibitor                    | -                         | Minimum 70% less corrosive than Sodium Chloride | PNS Test Method B |
| pH (Note 2)                            | 6 to 9                    | 6 to 9  | ASTM D 1293       |

Notes:  
1. 99% of the solids passing through a 2.00 mm sieve after being stored for 168 hours at -29 ± 1 °C.  
2. Dilute 1 part product to 4 parts distilled water before attempting a reading.

| TABLE 2<br>Calcium Magnesium Chloride Blend Properties     |  |   |                   |
|--|--|---|-------------------|
| Material/Property  | Calcium-Magnesium Chloride Blend                             |   | Test Procedure    |
|  | Dust Suppressant   | De-Icing  |                   |
| Calcium Chloride (CaCl <sub>2</sub> ), % minimum by mass   | 27.0   | 22.0  | ASTM E 449        |
| Magnesium Chloride (MgCl <sub>2</sub> ), % minimum by mass | As required for total CaCl <sub>2</sub> equivalence (Note 1) |   | ASTM E 449        |
| Total CaCl <sub>2</sub> equivalence, % minimum by mass     | 35.0   | 29.0  | (Note 1)          |
| Other Alkali Chlorides: NaCl, KCl, % maximum by mass       | 2.0  | 1.75  | ASTM E 449        |
| pH (Note 2)  | 6 to 9   | 6 to 9  | ASTM D 1293       |
| Corrosion Inhibitor  | -  | Minimum 70% less corrosive than Sodium Chloride | PNS Test Method B |

Notes:  
1. Total CaCl<sub>2</sub> equivalence = % CaCl<sub>2</sub> + (% MgCl<sub>2</sub> x 1.166).  
2. Dilute 1 part of product to 4 parts distilled water prior to attempting a reading.

While new to the US Market, DM 35 has proven performance in tough environments and comes with the credentials to prove it.