

Maintenance Advisory

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Liquid Deicing Chemical Purchase Guidance

The use of liquid chemicals for winter operations in Michigan has increased over the past few years. Using liquid chemicals for anti-icing and pre-wetting can make a winter operations program more effective and efficient. There are many de-icing chemicals available in Michigan and choosing a chemical that is effective, environmentally friendly and economical can be challenging. The following criteria have been created to assist contract agencies in selecting liquid chemicals for winter operations.

Any anti-icing/de-icing liquids used on MDOT Trunkline must meet one of the following three criteria.

1. Must be the Calcium Chloride and Agricultural Bi-Product (ABP) under contract with MDOT. Current Vendor, Great Lakes Chloride, Inc. – P.O. # 071B7200181.
OR
2. Product is listed on Pacific Northwest Snowfighters (PNS) Approved Product List, (Categories 1 – 3) and is competitively priced with product listed in item #1.
OR
3. Any other chloride based product that meets the requirements below and is competitively priced with product listed in item #1.

Criteria 3 products must be tested in accordance with the methods referred to in the current contract with Michigan DMB for ABP (Agricultural Bi-product). Test results from an independent laboratory shall be submitted. No products will be accepted that contain hazardous constituents in excess of the following established total concentration limits as listed in Table 1,

Table 1

Hazardous Constituent	*(ppm)	Hazardous Constituent	*(ppm)
Arsenic	5.00	Cyanide	0.20
Barium	10.0	Lead	1.00
Cadmium	0.20	Mercury	0.05
Chromium	0.50	Total Phosphorus	50.0
Copper	3.00	Selenium	5.00
Cyanide	0.20	Zinc	15.0

*Maximum Concentration Limit, parts per million (ppm)

Additionally, the pH of liquid chemical products shall be within the range of 6 to 9.

The product shall not contain greater than 1.0% (V/V) Total Settleable Solids and shall have ninety-nine percent (99.0%) of the Solids Passing through a Number 10 sieve after being stored at 0° F +/- 2° F for 168 hours. The product shall have a minimum storage life of one year, without degradation or addition of stabilizers or inhibitors. The product must not freeze at the lowest anticipated service temperature for the Region (i.e. to the Standard Specifications for Construction, subsection 906.07).