

Chemicals and Materials Mn/DOT Uses:

❄️ **Sodium Chloride** – Principle de-icing material. Most cost-effective and can work at lower temperatures by pre-treating or pre-wetting with other chemicals.

❄️ **Sand** – Has no melting capacity but provides momentary traction at lower speeds.



❄️ **Liquid Corn Salt** – A locally grown and produced product. When added to salt brine, allows it to be effective down to temperatures of -15°F.

❄️ **Salt Brine** – A mixture of 23% salt to 77% water. Can be applied as a pre-wetting agent to salt or directly sprayed onto roadways to prevent ice from forming/bonding to the pavement.

❄️ **Caliber (M-1000)** – A mixed de-icer material derived from corn containing 30% magnesium chloride. Works down to -25°F and when applied as a stream can penetrate snow pack and break the bond between ice and pavement.

❄️ **Magnesium Chloride** – A liquid used for anti-icing and pre-wetting. Works down to temperatures of -10°F.

❄️ **Potassium Acetate** – A non-corrosive, biodegradable liquid. Due to high cost it is primarily used in stationary bridge anti-icing systems or small areas to minimize salt applications.

Work Zones.
Pay Attention
or pay the price.

What Can You Do To Help?

- Reduce your speed and drive appropriately for winter conditions.
- Expect the appropriate level of service for roadways. Residential areas do not require the same snow removal or chemical usage as high speed roadways.
- Do not use excessive amounts of salt on your driveways, parking lots and sidewalks.

Additional Information can be found:

www.dot.state.mn.us

Minnesota Department of Transportation

www.dot.state.mn.us/maint/research.html

Office of Maintenance Research

www.rwis.dot.state.mn.us

Road & Weather Information System

www.mnltap.umn.edu/About/Programs/CTAP

Circuit Training and Assistance Program

www.mnltap.umn.edu

Local Technical Assistance Program

www.lrrb.org

Minnesota Local Road Research Board

www.fhwa.dot.gov

Federal Highway Administration

www.freshwater.org

Fresh Water Society

For questions or further information please contact us via e-mail at:

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Finding a Balance

WINTER OPERATIONS PROGRAM



STAYBACK STAYALIVE



Why We Perform Winter Maintenance?

- **Safety** – Motorists need to be able to drive safely on our roadways.
- **Mobility** – People, goods and services still need to move efficiently on our roadways. Excessive travel time and congestion costs people and businesses revenue.



Performance Goals

Our winter maintenance activities are an investment of your funds. As such, Mn/DOT is committed to apply resources effectively and efficiently to return each roadway to a safe level of service within a desirable time frame after each snow/ice event has ended.



Mn/DOT's Proactive Measures to Meet Safety Mobility Goals, Reduce Salt Usage, Manage Resources and Protect the Environment

- Calibrate Equipment
- Train Operators
- Apply Advanced Mechanical Snow Removal Techniques
- Apply Anti-Icing/De-Icing Products
- Apply Pre-Wetting Products
- Use Road Weather Information Systems
- Research and Use Alternative Chemicals
- Research and Use New Equipment and New Technologies
- Use Performance Measures and Data to Manage and Improve Operations

Who is Responsible For Which Roads?

Mn/DOT is responsible for:



Interstates



US Highways



Trunk Highways

Local Agencies are responsible for:



City Roads



County Roads



County Highways



Township Roads

Impacts on the Environment

Sodium Chloride can have the following impacts on our environment

- **Water** – Excessive levels can build up in waterbodies and adversely affect aquatic systems.
- **Plants and Trees** – Excessive levels can damage or kill plants and trees.
- **Infrastructure and Cars** – Excessive levels can deteriorate concrete, corrode metal bridge components, adversely affect other infrastructures and automobiles.

