



SUSTAINABLE ROAD SALTING PRACTICES

BRINE

Brine is a 23.3% salt-water mixture that is used to treat pavements before (anti-icing) and/or after storms (de-icing).

BENEFITS

- Can reduce road salt use by up to 70% saving a significant amount of money in salt.
- Anti-icing makes removing snow easier by preventing the bond between snow and ice and the pavement.

CONSIDERATIONS

- While set up costs can be significant, costs savings in salt saved can make up for investment costs in a short time.
- A 23.3% salt-water solution is used because that is the concentration of salt and water at which the lowest possible freezing point of water is reached.
- If a more concentrated solution is made, the salt will fall out of solution. If a less concentrated solution is made, freeze up can occur on the surfaces to which that concentration is applied.

CHALLENGES

- May be costly to purchase a brine-making system or pre-made brine plus storage and distribution equipment (e.g., tanks, hoses, nozzles, fittings).
- There is a misunderstanding among the public that brine is more corrosive than dry rock salt. In fact, it is no different. Dry rock salt put on pavements must form a brine with water on the pavement to work. Using brine directly is more efficient, uses less salt, and poses no greater threat to cars.

COSTS

Costs vary widely. Brine making systems can range from \$5,000 to \$100,000 or more, depending on features such as automation, speed, and capacity. In addition, there are costs for storage containers and specialized equipment required on each truck that is used to deliver the brine to the pavement.

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<https://www.uvm.edu/seagrant/road-salt-water-quality-salt-savvy-champlain>

COMPANIES

Companies that market brine making systems and brine storage and distribution supplies include:

- [Camion](#) (e.g., [Brine Master®](#))
- [Deicing Depot](#) (e.g., [1250 gallon brine maker](#))
- [GVM](#) (e.g., [EZ Brine Systems](#))
- [Henderson](#) (e.g., [BrineXtreme Infinity](#))
- [Hilltip](#) (e.g., [BrineMixx™ Brine Maker](#))
- [RoadBrine.com](#) (e.g., [Mobile Brine Maker 300 Gallon](#))
- [Varitech](#) (e.g., [Brine Boss](#))

*Companies listed may offer additional products not included here. In addition, other companies not included in the table may carry similar products. Listing does not constitute endorsement on the part of the University of Vermont, Lake Champlain Sea Grant, or NOAA. Information is provided for educational purposes only.

LOCATIONS

The following communities in the Lake Champlain Basin are using all liquids for snow and ice management:

- Hague, NY
- Peru, NY
- Winooski, VT (sidewalks only)

Does your community or business use only brine and operate within the Lake Champlain Basin of New York or in Vermont? Let us know and we can list your community or business here too!

LEARN

This [video from YouTube](#) shares one success story of a company that switched to all liquids and reduced salt use by 70%. You can also see how [Hyde Park, VT, makes brine in this video](#) (though they use it to pre-wet dry rock salt rather than directly on the road).

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