

## Description

Agricultural deicer products include those from various organic co- and by-products including beets, apple pulp, grapes, dandelions, sugar beets, foliage of these, and many others. These products are generally used as a deicer additive, allowing for a deicer to work at colder temperatures, remain on the pavement for longer periods of time, and provide varying levels of corrosion protection. The choice of ag products may vary based on local product availability.

### Pros



- Improved effectiveness of deicer products
- Reduces salt application rates (when used for pre-wet)
- Reduced corrosion

### Cons



- Generally used as additive to deicers (not necessarily chloride-free)

### Effective temperature °F



### Application Rate

Generally used as an additive. Allow products to work at colder temperatures, but this will vary by product and concentration added. Note that these products help reduce the eutectic temperature, but do not necessarily improve ice melting ability.

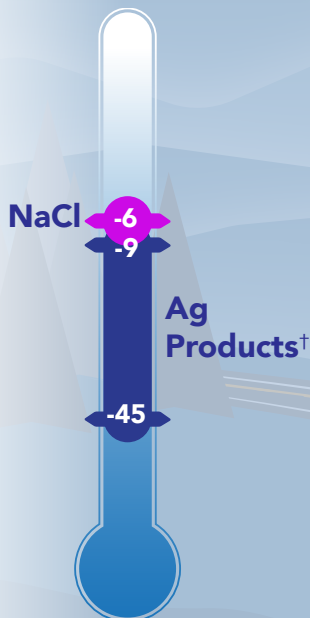
#### Ag products (anti-icing):

- Blended at 10 - 35 percent with salt brine and other chlorides.
- Apply at similar rates to other liquids.

#### Ag products (pre-wet):

- 5 - 15 gallons/ton.




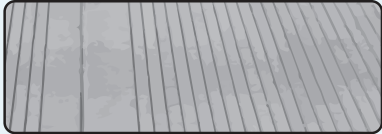
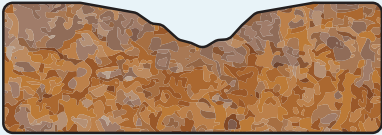
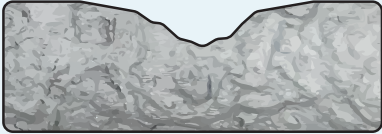
### Eutectic temperature °F



### Cost

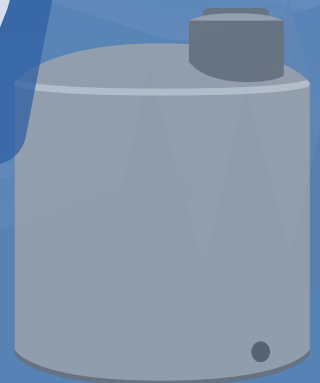


† The reduction in eutectic temperature from the addition of ag products can vary greatly depending on the product and concentration (Muthumani et al., 2015; Nazari et al., 2019).

	Impacts	NaCl*	Ag Products
	<b>BOD COD</b>	Low	Low to Moderate
	<b>Ecological Toxicity</b>	Low to Moderate	Limited data available
	<b>Asphalt Pavements</b>	Low to Moderate	Limited data available
	<b>Concrete Pavements</b>	High	Limited data available
	<b>Mild Steel Corrosion</b>	High	Limited data available
	<b>Galvanized Steel Corrosion</b>	High	Limited data available

## Storage and Handling

- Most Ag products are stable during storage for all seasons.
- Periodic recirculation of material in storage tanks may be suggested by the vendor.
- Store in a cool, dark location.
- Check periodically for biological growth, manage as is needed.
- All liquids should be stored with secondary containment.
- All solids should be stored on non-permeable surfaces and covered from the elements.



\* **NaCl** is included as a reference for comparison to the non-chloride deicers in this data sheet.