

Tools Available for Snow and Ice Control

The table below outlines the various ice control compounds that are available for use. They are grouped by their common usage: Roadways, Airport/Runways, and Agricultural Byproducts.

The columns are defined as follows:

- **Status - City of Edmonton Usage:** if the City of Edmonton is currently using this product, and a brief description of how it is used
- **Effective Temperature:** the lower bounds of the ambient (air) temperature that the solution is most effective in real-world applications.
- **Cost:** the relative cost of the product when compared to the other products in the table.

Range: \$ \$ \$ \$ \$ \$
 (lowest cost) (moderate cost) (highest cost)

- **Effectiveness:** the relative effectiveness of the product when compared to the others.

Range: ● ● ● ● ● ●
 (least effective) (moderately effective) (most effective)

- **Overall Impact:** the relative negative environmental and infrastructure impact of the product when compared to the others.

Range: △ △ △ △ △ △
 (lowest impact) (moderate impact) (highest impact)

Product	Status - City of Edmonton Usage	Effective Temperature	Cost	Effectiveness	Overall Impact
Roadway Products					
Sodium Chloride (NaCl - Rock Salt)	Currently in use - primary tool	-7°C	\$	● ●	△ △
Calcium Chloride (CaCl ² brine)	Currently in use - bike lanes and prewetting only	-32°C	\$	● ●	△ △
Sodium Chloride (solution)	Not in use	-11°C	\$	● ●	△ △ △
Magnesium Chloride (MgCl ²)	Not in use	-20°C	\$	●	△ △ △
Potassium Chloride	Not in use	-9°C	\$	● ●	△ △
Urea (Synthetic Material)	Not in use	-4°C	\$	●	△ △ △
Ammonium Nitrate (Synthetic Material)	Not in use	-9°C	\$	● ●	△ △ △
Ammonium Sulfate (Synthetic Material)	Not in use	-9°C	\$	● ●	△ △ △
Airport/Runway Products					
Calcium Magnesium Acetate	Not in use	-18°C	\$ \$	● ● ●	△
Potassium Acetate (solution - KAc)	Not in use	-32°C	\$ \$	● ● ●	△
Sodium Acetate (solid)	Not in use	-18°C	\$ \$	● ● ●	△

Attachment 6

Potassium Formate	Not in use	-40°C	\$ \$ \$	● ● ●	△ △ △
Glycol (80% Glycol + 20% NaCl)	Not in use	-23°C	\$ \$ \$	● ● ●	△ △ △
Agricultural Byproducts					
Pickle Brine	Not in use	-21°C	These products have the same properties as pure sodium chloride brine but have a substantial impact on water and aquatic life. Outside of regions where these are waste products, these become cost-prohibitive to import.		
Cheese Brine	Not in use	-29°C			
Whey	Not in use	-11°C			
Beer brewing by-product	Not in use	-15°C	These products increase the effectiveness of salt and reduce runoff; they have a substantial impact on water and aquatic life. Products cannot be used on their own; they must be mixed with salt.		
Sugar Beet Juice	Not in use	-9°C			