

WINTER MAINTENANCE: DE-ICING

On average, the equivalent of 137 pounds of salt per person is used to melt ice each winter in the U.S. Unfortunately, excess de-icing material ends up in our rivers and streams, where it can harm aquatic life and kill trees and other plants. Once chloride is in the water it cannot be removed. Therefore, prevention is the only way to keep our water clean. Thankfully, there are options that are less harmful to our waterways. This factsheet describes tips you can use on your sidewalks, driveways, and parking lots to keep them free from dangerous ice while also reducing the amount of harmful chemicals in the environment.



Excess rock salt on the road, as shown above, will get washed into nearby waterways if not cleaned up.



Shoveling your sidewalk or driveway before considering the use of deicer is better for the environment and your wallet.

Choosing Deicer Wisely



Check the ingredients on the label.

Magnesium chloride (MgCl_2), calcium chloride (CaCl_2), and potassium acetate work better in colder temperatures. Blends usually contain a lot of sodium chloride (NaCl) because it is cheap, but less effective the colder it gets. Urea is marketed as pet or plant friendly, but is much less effective at melting ice. Beet juice, sugarcane molasses, and cheese brine are some of the alternative deicers being explored.



The temperature listed on the bag may not be 100% accurate. Use the table on the right instead.

Keep in Mind



Remove snow first. Always remember to shovel, snow blow, and/or plow first to remove snow and ice as it builds up. Then, apply a deicer only if needed, and in as little an amount of necessary.



Use deicer sparingly. More than necessary will not be more effective. Use less than four pounds of salt per 1,000 square feet (average parking space is 150 square feet). One pound of salt equals a 12-ounce coffee cup.



Choose sand for low temps.

Typical deicers won't melt snow and ice effectively when it's 15°F or colder out, so use some sand for traction instead.



Don't be wasteful. Salt and sand on dry pavement isn't working and will eventually get washed into a nearby waterway. Before that happens, sweep it up and save it for use later.

Deicing chemical	Lowest effective pavement temp.
Sodium chloride (NaCl)	15 degrees F
Magnesium chloride (MgCl_2)	10 degrees F
Calcium chloride (CaCl_2)	- 20 degrees F
Calcium magnesium acetate (CMA)	20 degrees F
Potassium acetate (KAc)	- 15 degrees F
Urea (carbonyl diamide)	20 degrees F
Blends	Varies