



# FACT SHEET

## Melting Ice Safely

Fact Sheet 707

Each winter, people apply tons of ice melting materials to sidewalks, driveways, and steps, often without regard to proper application procedures or to what the deicing substance contains. Careless use of deicing products can damage both the home and the environment:

- Overuse of some deicers can accelerate the freeze-and-thaw cycles that damage concrete, taking years off the life of a sidewalk or driveway.
- Some deicers corrode metal, causing damage to cars and aluminum siding.
- Chemicals in many deicers can damage plants and shrubs near where the deicer is used if it is applied in large quantities.

To prevent damage to your home and the environment, choose a deicer carefully. See TABLE 1 for many of the ice-melting products currently found on the market, along with

### How Deicing Affects the Bay

The runoff carrying deicing product from one small sidewalk may not cause much harm but the combination of deicers used on all the sidewalks, roads, and parking lots in the region helps create harmful levels of salts and nutrients that enter storm sewers and eventually empty into the Chesapeake Bay. You can reduce pollution of local streams and the Bay by selecting the proper materials and methods for removing ice and snow.

information concerning their effectiveness and safety.

### Do not use fertilizer to melt ice and snow—the nitrogen and phosphorus in fertilizer can harm your local streams and the Bay.

Any of the ice removers listed in the table can be used with minimal damage to steel, concrete, and plants, if applied correctly.

- Ice melting products are most effective when spread thinly and evenly over the pavement prior to ice formation. It is much easier to prevent ice than to try to melt a thick layer of ice.
- Follow the manufacturer's directions when applying a deicer. If possible, use even less than is recommended, but make sure the surface is covered thinly and evenly.
- To melt thick ice in very cold weather, add a small amount of water to the deicer to help initiate melting. To further aid melting and provide sure footing, mix the deicer with wet sand and/or ashes.
- Buy deicers early in the season to ensure that you have an ample supply. Store the deicer and sand in separate heavy plastic garbage cans to keep them dry. If the sand becomes moist, mix a small amount of deicer with the sand to prevent freezing, or store the sand in a heated area.

**TABLE 1**

Product	Minimum Working Temp. (°F)	Speed	Damages Concrete and Metal?	Harms Plants?
Magnesium Chloride	-13	Very Fast	No	Moderately
Calcium Chloride	5	Fast	Yes*	Yes
Sodium Chloride (salt)	18	Moderate	Yes*	Yes
Potassium Chloride	25	Slow	OK on old concrete	Moderately
Calcium Magnesium Acetate (CMA)	25	Slow	No	No

\*Sodium and calcium chloride are particularly damaging to newly poured concrete. Also, these chemicals should not be applied to brick or stone surfaces.

## Salt Damage to Plants

Plant damage caused by deicers can often be treated. Salt damage symptoms include:

- poor or stunted growth in the spring (commonly occurs with grass next to walks, driveways, and streets);
- dieback on evergreens; and
- marginal leaf browning or leaf scorch on deciduous trees and shrubs.

Most salt problems can be treated by soaking the affected area with 1 inch applications of water three to four times in the spring. Gypsum may be added to the soil to reduce high sodium levels caused by excessive amounts of rock salt. Soil replacement may be an option for small planting beds.

If you want to confirm suspected salt damage, you can have your soil analyzed by the Soil Testing Laboratory at the University of Maryland. Follow the instructions on the soil test form and select the soluble salts test option in addition to the regular soil test. Call the Home and Garden Information Center for a soil test kit.

**Have a question about deicers or other home and garden topics? Call the Home and Garden Information Center at 1-800-342-2507.**

## Removing Ice Without Deicer

Several steps can be taken to remove thin layers of ice on small areas such as the house steps:

- Apply warm water mixed with table salt, water conditioner salt, or the brine backwash from a water conditioner.
- Use sand, ashes, or kitty litter to improve traction on icy areas.
- Once a dry route to the house has been established, block off slippery areas to prevent personal injury.
- If an ice storm is predicted, cover small areas with heavy plastic or other waterproof material.



Originally prepared by Herbert L. Brodie,  
Water and Waste Systems Specialist,  
Biological Resources Engineering Department,  
University of Maryland at College Park,  
and David L. Clement,  
Regional Extension Specialist.

Revised by Peter Ricciuti,  
Kevin Williams, and Leslie May,  
Faculty Extension Assistants,  
Home and Garden Information Center.

Chart adapted with permission  
from work of John Buckreis,  
Merrifield Gardens Nursery, Annandale, VA.

Reviewed by Gary K. Felton, Water Quality Specialist,  
Biological Resources Engineering Department,  
University of Maryland at College Park.