

Ice Melter Comparisons



ROGER S. BOLGER
HORTICULTURALIST
 WWW.ROGERBOLGER.COM

Ice melting chemicals can be a problem if they are applied incorrectly. Almost all ice melters are salts, which have side effects including potential damage to plants, soils, concrete and metals. This damage can occur through direct contact with the salt-water mixture or as an airborne mist, especially near roadways. Most damage can be minimized by using ice melters in moderation. Remove snow and ice mechanically when possible. Abrasive substances such as sand, ash, and cinders can increase the effectiveness of ice melters by improving traction and absorbing heat from the sun.

If plants come into contact with salt spray, rinse them with water, and put up a barrier to catch the spray if possible. Ice melters in the soil can be leached out by repeated watering, but clay soils resist this. Gypsum (CaSO_4) applied at a rate of 100 to 200 pounds per thousand square feet can help leach salts out of clay, and it can also be used as a preventative before winter to help salts pass through the soil.

Name	Formula	Min. Temp.	Rate	Plant Safety	Concrete	Notes
Sodium chloride, rock salt	NaCl	22° F	50 lbs / 1000 ft ²	worst	corrodes metal & rebar	absorbs heat, dries pavement, cheap, leaves residue
Calcium chloride	CaCl ₂	-25° F	15-25 lbs / 1000 ft ²	moderate	corrodes metal & rebar	generates heat, lasts longer, attracts moisture, leaves residue
Potassium chloride	KCl	12° F	50 lbs / 1000 ft ²	mild	corrodes metal & rebar	absorbs heat, fertilizes plants, leaves residue
Magnesium chloride	MgCl ₂	5° F	30-50 lbs / 1000 ft ²	bad	corrodes metal & rebar, slow chemical attack	generates heat, lasts longer, attracts moisture, leaves residue
Urea	NH ₂ CONH ₂	15° F	50 lbs / 1000 ft ²	can burn	chemically damages	absorbs heat, doesn't form brine, fertilizes plants
Ammonium sulfate	(NH ₄) ₂ SO ₄	20° F		can burn	chemically damages	absorbs heat, doesn't form brine, fertilizes plants
Sodium acetate (NAAC)		0° F	5-10 lbs / 1000 ft ²	moderate	non-corrosive	prevents ice better than it melts ice
Potassium acetate	CH ₃ COOK	15° F		mild	corrodes metal & rebar	biodegradable
Calcium magnesium acetate (CMA)	CaCO ₃ + MgCO ₃ + CH ₃ COOH	5° F		mild	non-corrosive	safest for concrete & plants, prevents ice better than it melts, expensive