

Category	Type	Lowest Practical Melting Pavement Temperature	Potential for corrosion impairment ³			Environmental Impact			
			Atmospheric Corrosion to Metals	Concrete Matrix	Concrete Reinforcing	Water Quality/Aquatic Life	Air Quality	Soils	Vegetation
Chloride Based Deicers	Sodium Chloride	15°F	High; will initiate and accelerate corrosion	Low/moderate; Will exacerbate scaling; low risk of paste attack	High: Will initiate corrosion of rebar	Moderate: Excessive chloride loading/metals contaminants; ferrocyanide additives	Low: Leads to reduced abrasives use	Moderate/High: Sodium accumulation breaks down soil structure and decreases permeability and soil stability; potential for metals to mobilize	High: Spray causes foliage damage; osmotic stress harms roots, chloride toxicosis
Chloride Based Deicers	Calcium Chloride	-20°F	High; Will initiate and accelerate corrosion; higher potential for corrosion related to hygroscopic properties	Low/moderate; Will exacerbate scaling; low risk of paste attack	High: Will initiate corrosion of rebar	Moderate: Excessive chloride loading; heavy metal contamination	Low: Leads to reduced abrasives use	Low/Moderate: Improves soil structure; increases permeability; potential for metals to mobilize	High: Spray causes foliage damage; osmotic stress harms roots, chloride toxicosis
Chloride Based Deicers	Magnesium Chloride	-10°F	High; Will initiate and accelerate corrosion; higher potential for corrosion related to hygroscopic properties	Moderate/high: Will exacerbate scaling; risk of paste deterioration from magnesium	High: Will initiate corrosion of rebar, evidence suggest MgCl ₂ has the highest potential for corrosion of chloride produces	Moderate: Excessive chloride loading; heavy metal contamination	Low: Leads to reduced abrasives	Low/Moderate: Improves soil structure; increases permeability; potential for metals to mobilize	High: Spray causes foliage damage; osmotic stress harms roots, chloride toxicosis
Carbohydrates	Beet Juice	NA	Low; Potential to initiate and accelerate corrosion due to elevated conductivity claims of mitigation of corrosion require further evaluation	Low; Probably little or no effect	Low; Probably little or no effect; claims of mitigation of corrosion require further evaluation	High Organic matter leading to oxygen demand; nutrient enrichment by phosphorus and nitrogen; heavy metals	Low: Leads to reduced abrasive use	Low: Probably little or no effect; limited information available	Low: Probably little or no effect
Carbohydrates	Molasses	NA							
Carbohydrates	Corn Syrup	NA							
Acetate Based Deicers	Calcium Magnesium Acetate	20°F [1]	Low/moderate; Potential to initiate and accelerate corrosion due to elevated conductivity	Moderate/high: Will exacerbate scaling; risk of paste deterioration from magnesium reactions	Low; probably little or no effect	High: Organic content leading to oxygen demand	Low: Leads to reduced abrasives use	Low/Moderate: Improves soil structure; increases permeability; potential for metals to mobilize	Low: Little or no adverse effect; osmotic stress at high levels
Acetate Based Deicers	Potassium Acetate	-26°F [2]	Low/moderate; Potential to initiate and accelerate corrosion due to elevated conductivity	[3]	Low; probably little or no effect [4]	High: Organic content leading to oxygen demand	Low: Leads to reduced abrasives use		
Acetate Based Deicers	Sodium Acetate	0°F [5]				Relative aquatic toxicity: high			