

Firm serves sweet brew for de-icing roads

By Kathleen Burge and Peter DeMarco, Globe Staff and Globe Correspondent | December 2004



Brendan Cronin showed handfuls of regular road salt (left) and Magic Salt, made with byproducts from alcohol distilleries. (Globe Staff Photo / John Bohn)

It was discovered by an Eastern European scientist at a vodka factory. Deep into a Hungarian winter, the chemist noticed a startling sight: The pond behind the distillery -- where the sugary, leftover swill from the factory had collected -- never froze.

The chemist figured out how to turn the mash into a potent syrup that could be poured over rock salt to thaw icy roads, and Magic Salt was born. This winter, at least 25 towns in Massachusetts, as well as some colleges and hospitals, are spreading their roads with Magic Salt, concocted in upstate New York from the leftover mash of alcohol distilleries.

Gordon College in Wenham began spraying its campus roads with Magic Salt last year. Although the college spent about the same amount of money as it did on regular rock salt, the roads were less slippery, said Paul Helgesen, director of physical plant operations.

"Overall, most people told us it was a safer campus," he said. "And safety rules."

Officials at Innovative Municipal United States, the company that makes Magic Salt, say that the sweet brown syrup is so environmentally safe that it is edible before it is sprayed on rock salt. The sticky coating makes treated salt adhere to the road better than ordinary salt, which means that highway officials can use less, they say. And unlike untreated rock salt, Magic Salt works when the temperature dips below 18 degrees Fahrenheit.

"Basically, it's rock salt on steroids," said Brendan Cronin, the Eastern Massachusetts distributor for Magic Salt.

Innovative Municipal does not say where it gets the alcohol residues. Daren Crawford, a sales associate, would only say that the residues arrive on barges from international ports. The company has tried to

produce Magic Salt from condensed leftovers of more than 500 distilleries worldwide, but only three of the mixtures work well, he said.

While some public works officials cannot say enough about Magic Salt, others have complained about the molasses odor.

"For some people, the odor seems to be the stickler," Crawford said, adding that the company now sells a more expensive, less pungent Magic Salt. "It smells like something you would smell in a barn."

People whose jobs are to keep roads safe have long searched for ways to fight ice and snow. First came sand, which adds traction to roads. Then came rock salt, which melts ice, but loses its zap when the temperature falls below 18 degrees Fahrenheit. Liquid calcium chloride, sprayed directly on the roads or on rock salt, is more powerful, but it corrodes bridges and vehicles and pollutes streams, lakes, and rivers.

Magic Salt is not the first attempt to produce rock salt treated with mash left over from distilling alcohol such as vodka, rum, and beer. Some earlier versions, produced after Hungarian chemist Jenő Toth applied for a patent in 1986, faltered when the syrupy substance clogged sprayers and could not be spread easily over the salt, said Ruth Stidger, editor-in-chief of Better Roads, a highway industry magazine.

Other snow removal specialists are dubious about Magic Salt's boasts. They say they have seen other products fade into history after their producers promised they would miraculously melt.

Charles Satterfield, an emeritus professor of chemical engineering at MIT, said he is wary of some of the statements made by Magic Salt's producers, particularly that it can prevent wet roads from freezing when the temperature dips as low as 35 degrees below zero.

Satterfield was less skeptical about some of the company's other statements, saying that "my guess is that the goop would help hold the salt onto the ice better."

Some towns have brushed aside any concerns about Magic Salt's effectiveness in their annual wintertime battle. An increase in the price of road salt of up to 50-percent has local officials looking for ways to save money. In Boston, public works officials became more interested in Magic Salt after they learned that road salt would cost significantly more this year, said Joseph F. Casazza, Boston public works commissioner.

"We haven't used it yet, [but] we're excited about the potential," said John Haines, highway surveyor for East Bridgewater, who began looking for ways to reduce rock salt use after prices skyrocketed this fall.

Magic Salt is more expensive than regular salt, which has prevented some communities from switching. An untreated ton of rock salt costs roughly \$40, but a ton of rock salt treated with the Magic Salt solution costs about \$20 more.

Innovative Municipal said a ton of its salt covers a 30 to 40 percent greater area and stays on the road longer than a ton of untreated rock salt. The result is an overall savings, according to the company.

In Binghamton, N.Y., public works officials switched to Magic Salt about three years ago. Since then, they have cut rock salt use in half, on average, from 400 tons to 200 tons per year.

"We like it very much," said Greg Precopio, deputy commissioner of public works for Binghamton. "It helps keep the salt in the center line, so it doesn't bounce to the gutter."

Local public safety officials may soon be echoing Precopio's praise. But the winter's worst weather and Magic Salt's biggest test is still to come.