

ACCUBRINE®
AUTOMATED BRINE MAKER



Automation Improves Brine Production Process

St. Cloud Chooses AccuBrine® Automated Brine Maker to Battle Minnesota's Harsh Winter Road Conditions.

Travel just 60 miles northwest of the Twin Cities and you'll discover the center of one of Minnesota's fastest growing metropolitan areas. St. Cloud, located on the banks of the beautiful Mississippi River, offers a wide array of commercial, education, recreation and arts opportunities to the more than 64,000 Minnesotans that call the city home.

St. Cloud serves as a commercial hub for in excess of 250,000 people in and around the city. During the winter months, when the average annual snowfall is 45 inches, these people rely upon the Street Division of the St. Cloud Public Works Department to clear snow and ice from municipal streets, alleys, parking lots and sidewalks so daily life can continue during even the harshest Minnesota winter.

In recent years, the city has partnered with the Minnesota Department of Transportation (Mn/DOT) to adopt new pre-wetting and anti-icing practices using a brine solution to combat snow and ice issues on area roadways.

Initially, the two agencies pooled resources to develop a homemade brine maker that was housed at the MnDOT facility on the north end of the city. Another homemade brine maker was built later and housed at the city facility on the other end of town, which enabled trucks from both agencies to refill their tanks at either end of town.

Although the brine maker resulted in an unquestionable improvement in their ability to be more proactive rather than reactive when dealing with winter road conditions, there were problems in the quality of the brine the homemade brine maker produced.

"The salt is supposed to be at a 23.3% mixture but with our system you never really knew what the salinity was. It could have been 26%. It could have been 20%. You never really knew," says Joe Imholte, maintenance supervisor for the City of St. Cloud. "The consequence is if you don't have the 23.3% salinity your tanks can freeze or you're absolutely wasting your time putting it out because it's not doing the job it's supposed to."

Just in time for the 2005/2006 winter driving season, the City of St. Cloud learned about a new product from Cargill Deicing Technology. The AccuBrine® automated brine maker would give them all the benefits of brine use faster, cleaner and more accurately than their homemade system.

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The AccuBrine® automated brine maker produces large volumes of brine per hour automatically using a state-of-the-art Programmable Logic Controller (PLC). The PLC initiates the dilution process while a second sensor re-checks concentration and accepts or rejects the batch. Smart sensors monitor valve function. The PLC tracks daily and seasonal data including production volume; water, salt and additives usage; and operator hours. Self-diagnostics identify problems, notify the operator of failures and provide corrective measures.

The City of St. Cloud purchased the AccuBrine® automated brine maker and went online with it November 23, 2005. And, although it was a warmer winter that produced less severe conditions than normal, the preliminary results are good.

According to Imholte, the city was initially concerned about the accuracy of the AccuBrine® automated brine maker due to the city's experiences with its homemade brine making systems. After testing the salinity of the brine from the AccuBrine® automated brine maker on several occasions, the city found that the results were either right at the ideal salt concentration of 23.3% or within a fraction of a percent of that concentration.

Another significant advantage to the AccuBrine® automated brine maker is its ability to quickly produce significant volumes of brine at the touch of a button.

"We have an 1,800-gallon tank that would take us 3 hours and 20 minutes to fill with our homemade system. With the AccuBrine® automated brine maker we fill that same tank in 18 minutes," says Imholte. "And filling our 100-gallon tanks on the trucks takes less than a minute."

With the recent delivery of several additional storage tanks, St. Cloud plans to also use the AccuBrine® automated brine maker to quickly and easily blend additives such as Liquid Corn Salt into their brine mixture to further enhance its ability as a pre-treatment in the coming year.

"The quality of brine produced by the AccuBrine® automated brine maker is superior to anything we've used in the past because of the consistent results," says Imholte. "I'd recommend the AccuBrine® automated brine maker to anyone. As a matter of fact I know that since we've purchased ours several other agencies in the state have already purchased the system and several others are looking into it."

The AccuBrine® automated brine maker is an investment that produces valuable returns in the safety of roads and the overall reduction in operational costs and headaches.

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