

## Craft breweries enhance product quality and find peace of mind with DOWFROST™ fluid

For craft brewers, selecting a process heat transfer fluid may seem less important than combining the right ingredients and brewing method to achieve distinctive flavor, color, and body. But as production volumes increase, and product lines become more diverse, craft brewers are discovering that using DOWFROST™ inhibited propylene glycol-based heat transfer fluid can provide an important safeguard to ensure that product quality and safety are protected.

### Choosing a Fluid with an Excellent Toxicity Profile

Like other food and beverage product manufacturers, craft brewers must take process safety very seriously. Heat transfer fluids that don't pose a toxicity threat in the event of minor undetected leaks in vessel jackets, immersion coils, or heat exchangers are important. Even minor external leaks from pump seals or valves can represent

regulatory reporting headaches if the heat transfer fluid has toxicity or industrial handling safety issues.

At Mount Pleasant Brewing Company, a small craft brewery in Mount Pleasant, Michigan, owner Jim Holton says heat transfer fluid safety has always been important. Says Mr. Holton, "We started 15 years ago as a small brewpub operation. From the word go, I wanted to be sure we were using all food-grade materials, and that was a key reason for us to specify DOWFROST™ Inhibited Propylene Glycol as our heat transfer fluid. When we expanded our operation and built our brewery three years ago, there was no question that we'd continue to use the DOWFROST™ Fluid. One of our considerations was the extra stress higher-volume processing can put on equipment like the heat exchangers in wort chillers. We get a lot of peace of mind with a non-toxic fluid."

The same is true at larger craft operations like Deschutes Brewery in Bend, Oregon, the fifth largest craft brewery in the United States. Says Tim Alexander, Deschutes' Utilities Manager, "We're totally committed to using a food grade heat transfer fluid for controlling temperature in our fermenters, bright tanks, and flash pasteurizers. We have 35 different fermenters of different capacities plus a lot of other equipment, and we want an extra margin of safety in the event of a leak."

This trust in the low toxicity of DOWFROST™ Inhibited Propylene Glycol has made it the leading brand of heat transfer fluid in the national brewing industry for over 50 years. In fact, the base stock for DOWFROST™ Inhibited Propylene Glycol is DOW PuraGuard™ Propylene Glycol (PG) USP/EP, a pharmaceutical grade of monopropylene glycol with a specified purity 99.8 or greater.

### Providing Temperature Control that's Critical to Beer Flavor and Quality

Craft brewers are as sensitive to temperature control as larger breweries; perhaps even more so, because batch sizes are much smaller and may tend to magnify the effects of temperature inconsistencies within individual vessels. Moreover, many craft brewers produce more individual brands than major brewers, frequently featuring a mix of top- and bottom-fermenting recipes that call for distinctly different temperature control profiles. Non-dedicated equipment used to produce more than one style of beer may require different temperature profiles throughout the year. Those are a few of the reasons craft brewers rely on a heat transfer fluid like DOWFROST™ Inhibited Propylene Glycol that allows very precise control of temperature in wort coolers, primary fermenters, secondary fermenters, and other equipment. Used at 25 to 45% in aqueous solutions, this fluid provides dependable temperature control across an operating range from -50°F to 250°F (-46°C to 121°C).



*At Mount Pleasant Brewing, DOWFROST™ Inhibited Propylene Glycol provides excellent corrosion protection for the brewery's nine fermenters, five bright beer tanks, pumps, piping, and associated equipment.*

Mount Pleasant's Jim Holton asserts that temperature control is vital to maintaining the quality and consistency of the regional brewer's beers. Much of Mount Pleasant's volume is ales, along with smaller amounts of lagers and wheat beers. Says Mr. Holton, "With our ales, it's very important that we keep temperatures very close to 70 degrees. Too much above that, and we could have trouble with off-flavors from wild yeast strains. We're very pleased with the temperature control we get with the DOWFROST™ Fluid, and we plan to continue to use it as we grow our operation." Currently, Mount Pleasant Brewing operates with nine fermenters and five bright tanks, with temperature control provided by a 7-1/2 hp compression cooler driving 200 gallons of DOWFROST™ Inhibited Propylene Glycol in the secondary loop.

The Deschutes Brewery is a much larger operation, producing 225,000 barrels annually. A 200 hp primary chiller services 35 fermentation tanks, 15 bright beer tanks, and a flash pasteurizer. Deschutes produces twenty different beers in a wide range of styles, including porters, pale ales, IPAs, stouts, and many seasonal recipes. Deschutes also prides itself on its innovative "bold, small batch experiments".

All of these recipes have unique temperature requirements, says Deschutes' Tim Alexander. "We're always looking for temperature



*Mount Pleasant Brewing Company's chilling system relies on 200 gallons of DOWFROST™ Inhibited Propylene Glycol to maintain accurate temperature control in fermenters and bright tanks.*

control that's as accurate as we can get it. Most of our production is top-fermenting ales between 60 and 65 degrees F, but we also brew lagers at 50 to 55 degrees. With some of our special Belgian beers, we ferment as high as 75 degrees. We rely a lot on the heat transfer fluid to provide consistent results from batch to batch. That's one of the reasons we've been using DOWFROST™ Fluid for as long as I can remember."

### **Corrosion Protection that Helps Avoid Leaks and Maintains High Process Efficiency**

While fluid safety and temperature control are the key considerations for these two craft breweries, both have an appreciation for the corrosion protection provided by

DOWFROST™ Inhibited Propylene Glycol. Both the Deschutes Brewery and the original brewpub at the Mount Pleasant Brewing Company have used DOWFROST™ Fluid for 15 years without any corrosion trouble.

### **Maintaining Peak Fluid Performance**

Deschutes Brewery also appreciates the technical support provided by Dow. Says Tim Alexander, "Dow regularly tests our fluid to make sure it is still in spec. If needed, Dow will send us additives that get our glycol fluid back in top working condition. This is one of the main reasons we stick with DOWFROST™ Fluid; even though it's a little more expensive up front, in the long run we save money and increase production time because we haven't had to completely drain and refill our plant."

### **Confident Today and in the Future**

Overall, both craft breweries report excellent experiences with DOWFROST™ Inhibited Propylene Glycol. At Mount Pleasant Brewing, Mr. Holton says "The DOWFROST™ Fluid is tried, tested and true for us. It has the track record that will keep us using it as our business expands. I'd recommend it to anyone."

In Bend, Deschutes' Tim Alexander expresses similar confidence. "Right now", he says, "we're in the middle of a major expansion program that will take us up to 350,000 barrels a year, and we plan to keep using the DOWFROST™ Fluid as we grow."

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