

# Freshline® continuous sauce chiller



## High volume sauce chilling in a small package



### Benefits of Freshline continuous sauce chiller

- Continuous cooling for cycle time reduction or throughput increase
- Compact unit with high volume throughput
- Lower capital cost compared to competitive technologies such as batch kettle cooling and scraped surface heat exchangers (SSHE)
- Efficient use of liquid nitrogen
- Easy-to-clean—fully compatible with clean-in-place (CIP) systems



The unique Freshline continuous sauce chiller uses the extraordinary power of liquid nitrogen to instantly cool a variety of flowable food products.

Products such as sauces, gravies, marinades, custards, purees and almost anything you are able to pump can be chilled in-process instead of cooling in the cooking vessel in a time-consuming batch process.

The Freshline continuous sauce chiller brings the benefits of a liquid nitrogen tunnel freezer to sauces and other “flowable” products. No longer reserved for IQF shrimp and chicken breasts, liquid nitrogen can now be used to cool just about anything you can pump. Whether cooling sauces, gravies, marinades, custards, purees, toppings, or condiments before packaging or cooling these products *in-process*, the Freshline continuous sauce chiller provides an almost instantaneous cooling of a hot or warm sauce due to the extreme cold of liquid nitrogen and the intimate contact it makes with the sauce. You can halt the cooking at precisely the right moment, resulting in red sauces that stay redder, aromatic sauces that retain their aroma, and gravies and au jus that keep their luster.

Until now, liquid food cooling has been completed using large, expensive, and troublesome scraped surface heat exchangers (continuous) or in-kettle cooling (batch). A compact and high-powered liquid cooling system, such as the Freshline continuous sauce chiller, beats these alternatives hands down. A single Freshline unit can cool liquids from almost boiling to packaging temperatures in seconds at rates of up to 5,000 pounds per hour. High power and small size means that the savings are abundant: more volume can be produced, maintenance is reduced (dramatically), and cleanup is easy.

## Customized Solutions

While the Freshline continuous sauce chiller is a high-powered, low-cost, and small liquid cooling unit, its flow-through continuous style isn't appropriate for every sauce cooling need in food processing. In these instances, a customized solution can be designed. We have been able to successfully install systems that directly inject liquid nitrogen into our customers' existing liquid food processes, allowing processors to benefit from all that liquid nitrogen cooling brings to flowable foods without any disruption to the current process flow. This option can allow for cooling that takes a few minutes in your existing kettles instead of the dozens of minutes you've come to expect. As a result, you'll be on to making your next batch before even finishing the cooling cycle with your old system—all without drastically changing the way your employees produce your product.

For more information, please contact us at:

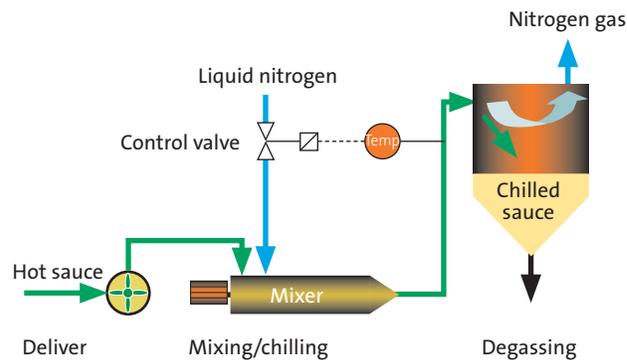
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## General Specifications

|                    |  |
|--------------------|--|
| Overall depth      | 2.5 ft   |
| Overall width      | 6.3 ft   |
| Overall height     | 6.2 ft   |
| Production volumes | up to 6600 lbs/hr, dependent on type of sauce, starting and final temperatures |
| Viscosity range    | 1 to 200,000 cps   |
| Entrained solids   | Particulates up to approx. 3/8"  |
| Electrical supply  | 460V, 30 amp max   |

Figure 1: Freshline Continuous Sauce Chiller Flow Diagram



## Ask Air Products . . . and expect more

In addition to the equipment, we supply the training and safety systems necessary for a quality installation and expert technical support before, during, and after installation. Whether your packaging, cooling, chilling or freezing applications include bakery goods, fruit and vegetables, poultry, meats, ready meals or anything in between, Air Products' Freshline solutions offer you the high-

purity gases and equipment, the international supply capability, and—most important—the unmatched industry experience and technical support to help you succeed just about anywhere in the world. We can help you improve your productivity, lower your costs, maximize your returns, and, as a result, help make you more competitive in a very competitive market.



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