



Danisco chooses Zitrec F

ARTECO
A Joint Venture Company

Our Customer

Danisco is one of the world's biggest producers of food ingredients such as sugar, industrial bioproducts, emulsifiers and stabilizers. At Danisco Grindsted (DK), production runs 7 days on 7, 24h a day. With about 620 employees on the site, Danisco produces a variety of products: emulsifiers, enzymes, food safety products (antioxidants), pharmaceutical base products...



The Application

In 2003, Danisco started an R22 conversion project of a production facility that produces emulsifiers and stabilizers base products. This used to be a direct expansion system, but would be reconverted to an indirect system. By August 2006, the complete reconversion project was finished with success.

In several plants in this facility, a spray cooling tower installation is in place, cooling down incoming air by use of a stainless steel metal coil. This removes the humidity out of the air. The use of stainless steel is absolutely necessary for the simple reason that the incoming air has to be clean without any particles from corrosion if other materials were used in the cooling coils.

The individual cooling towers are fed with Zitrec F at a 30% concentration at -7°C, which originates from a central 3MW cooling plant with NH₃ primary expansion system.

Choosing for safety and flexible control

For the new plant, safety is an absolute priority. Mr Henning Tøstesen, one of the key responsables for this project, told us:

"... We must consider any incident in operating these systems. Amongst various other things, we looked at a possible coil break and the consequent release of heat transfer fluid into the spray drying tower. Even a small leakage would be disastrous. Therefore we needed a safe product with highly performant corrosion inhibitors."

On the use of indirect system, he argues:

"We chose for an indirect system because it offered us the necessary flexibility and ease of control of the coil temperatures – which is important since it influences product quality quite directly."

Coming to the reason why Zitrec F was chosen, Mr Tøstesen continues to say: “... *FDA approved ingredients, the NSF registration, all were important elements favouring Zitrec F as a solution. Further, the environmental responsibility of Danisco lead us to construct the installation such that the impact on environment is minimised. This also means the choice of the heat transfer fluid is secondly determined by its thermophysical properties, to reduce energy consumption. All this together soon lead us to choose for Zitrec F as a heat transfer fluid.*”

Customer Satisfaction

Dansico uses a diluted version of Zitrec FC, mixed by Brenntag Nordic and supplied just-in-time at the filling site. This solution, apart from being economically interesting, proved to deliver the necessary flexibility.

Mr Tøstesen comments: “... *I am very pleased with the service and technical support provided by Arteco and Brenntag Nordic, and of the products’ performance. The cooperation between us proved to be flexible and reliable and I am very pleased with my choice!*”.

Looking back over the last year of use of Zitrec F, no problems caused by corrosion were found.



To the left, Mr Tøstesen of Danisco and to the right, Jens Brandt of Brenntag Nordic - DK

After sales support

As after sales support, Arteco has recently examined a sample of Zitrec F, and found that it was as good as new – no metal-ion contamination caused by corrosion of materials was found.

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