

Caravan Ingredients Uses Artisan Evaporator/Stripper™ to Improve Monoglyceride Production

Caravan Ingredients (formerly American Ingredients), a leading supplier of food emulsifiers, was using vertical wiped-film evaporators to recover monoglyceride. The process required recycle during startup to achieve product purity, yield was marginal, and frequent shutdown for mechanical repair was raising operating costs.

So they turned to Artisan Industries to strip glycerol from the feed. Artisan's engineers designed a multi-stage falling-film evaporator/stripper that vacuum strips virtually all of the glycerine from the product. This stream is then directed to a molecular still for monoglyceride separation, and the high-purity glycerol is recycled.

Speaking for Caravan Ingredients, Process Engineer Jason Dana says, "We chose Artisan because they were knowledgeable and because they had a pilot plant that could prove the process before we scaled up to production."

"Artisan engineered the unit from top to bottom. We gave them our performance specs, and they met them. They came up with a solution that combined stripping with distillation and used no moving parts."

Artisan's Evaporator/Stripper combines evaporation and stripping into a single operation, dramatically simplifying the stripping process. Short residence time, superior mass transfer and extremely low pressure-drop make it far more economical than vertical wiped-film evaporators for stripping applications requiring high-vacuum operation.

"Startup was trouble free due to Artisan's extensive pilot plant testing," Dana continues. "Our monoglyceride has a higher purity because of the improved glycerol stripping."

Not only is monoglyceride purity substantially improved, but the Evaporator/Stripper also yields a significantly higher purity glycerol than other technologies. That glycerol is then reused in the plant.

“We designed the Evaporator/Stripper system to allow for varying feed composition including virtually 100% glycerol during start-up”, explains Perry Alasti, Vice President and Technical Director for Artisan. “The Evaporator/Stripper has been successfully used in numerous food, oleochemical and chemical industry applications. We’re pleased that Caravan Ingredients chose it for this process.”

Applications of Artisan’s Evaporator/Stripper include deodorizing glycerin, stripping fatty acids, recovering monoglycerides, deodorizing vegetable oils and animal fats, desolventizing vegetable oils and plant extracts, aroma recovery and post reaction stripping of high molecular weight esters.

Artisan has over seventy years of experience in the design and manufacture of thin film process equipment for thermal separations.

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