Alfa Laval Unique Sampling Valves ensure hygienic quality of rennet sampling

Chr. Hansen, Graasten, Denmark **Case story**

Alfa Laval Unique Sampling Valves provide representative samples from Chr. Hansen's rennet storage tanks, eliminating product loss and boosting production.

To improve the quality of its enzyme production and eliminate contamination issues associated with plant sampling valves, world-leading natural food ingredients company Chr. Hansen replaced existing sampling valves on two of its liquid rennet storage tanks with Alfa Laval Unique Sampling Valves. Designed for demanding hygienic applications, the Alfa Laval Unique Sampling Valves enabled the Chr. Hansen quality control team to collect consistent and representative samples from the weekly production batches, ensuring product compliance and total peace of mind.

High quality product extraction

Chr. Hansen produces high quality rennet, a natural complex of enzymes used for the production of cheese and dairy products. Rennet quality has a direct influence on the cost, quality and yield of the final product. To ensure the high quality of its rennet, Chr. Hansen collects weekly samples from its storage tanks. When contamination appeared in samples from two tanks, the plant maintenance manager undertook extensive investigations to determine the root cause of the problem.

To identify the source of contamination, Torben Jørgensen, maintenance manager at the Chr. Hansen's rennet production facility in Graasten, Denmark, systematically inspected all components in the production line and determined the existing sampling valves to be among the potential sources.

According to Jørgensen, identifying the source of contamination can be expensive. Costs to conduct a thorough investigation, including examining the storage tank for any evidence of stress cracks and evaluating agitator function, can add up to EUR 10,000. The laboratory must also test additional samples, and the storage tank then must be sterilized and refilled.

"Because the availability of quality rennet is critical to our customers, remedying the problem was a top priority," says Jørgensen. "After discussing the situation with our Alfa Laval representative, we decided to conduct a test using single-seat Alfa Laval Unique Sampling Valves mounted onto the sides of the two rennet storage tanks. This immediately solved the problem."

Hygienic design, exceptional reproducibility
Alfa Laval Unique Sampling Valves contribute to providing optimal hygiene conditions for tank sampling. These valves are certified according to European Hygienic Engineering & Design Group (EHEDG) guidelines and meet the requirements of the 3-A Sanitary Standards. Made of a single piece of stainless steel, the valve body has smooth, crevice-free surfaces and is manufactured without any welds. This eliminates the risk of pore formation, weld cracking and bacterial build-up, all of which can contribute to contamination problems.

“The Alfa Laval Unique Sampling Valves provide us with representative samples every time, which is essential to our business,” Jørgensen affirms. “This boosts the level of confidence we have in the samples taken and therefore enables us to reduce the sampling frequency without posing any risk of product non-compliance.”

Due to high reliability, sampling accuracy and excellent reproducibility, the Alfa Laval Unique Sampling Valves reduce production errors as well as product loss. In addition, the single-seat version is capable of being sterilized before and after sampling using dry steam at temperatures up to 121°C and pressures up to 2 bar.

“It is crucial that we can trust the sampling results. The Alfa Laval Unique Sampling Valves enable us to make the right decisions about each rennet batch based on the samples taken,” Jørgensen goes on to say. “With proper decision-making, we are able to fulfil obligations to customers regarding delivery time and product quality.”

Easier to use, easier to maintain
The Alfa Laval Unique Sampling Valves also make it easier to take the rennet samples compared to other manufacturers’ sampling valves, according to Jørgensen. The ergonomically designed handle provides exceptional control during sampling.

Replacing the membrane seal is straightforward, which makes maintenance, when required, easy. Moreover, because the Alfa Laval Unique Sampling Valves are integrated into the tanks, the risk of contamination resulting from corrosion is minimized. This extends the lifetime of the valves.

Replacing existing sampling valves with Alfa Laval Unique Sampling Valves reduced product loss and increased the level of confidence in the samples taken at Chr. Hansen's rennet production facility.

Ensuring sampling excellence throughout the plant
Based on the positive results from the trial, Chr. Hansen is considering replacing the other sampling valves in the rennet production facility with Alfa Laval Unique Sampling Valves.

“The Chr. Hansen brand is synonymous with high quality natural rennet,” says Jørgensen. “With the Alfa Laval Unique Sampling Valves in place, we now trust the sampling that we do. By gradually upgrading installations with these valves in the future, we will ensure highly accurate, reproducible and representative samples that will boost to the plant's overall productivity.”

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