

CASE STUDY

SALOMIX® Horizontal Agitators for High Viscosity Syrups

Amilina is a Lithuanian manufacturing company that processes more than 1,000 tons of wheat per day. It mainly produces very high purity native wheat starch and supplies it primarily to the paper and food industries. Since the starch production was started in 2006, most of the pumps and agitators installed on site have been delivered by Sulzer and have ensured trouble-free operation. In 2014, Amilina decided to start producing also wheat glucose syrup for the food and biotech industries. Looking for top-class equipment for the new line, the client asked Sulzer for additional pumps and agitators.



SALOMIX® SLF-80.18DG side-mounted horizontal agitator on wheat glucose syrup storage tank

“ *Our relation with Sulzer is a close partnership. They provide strong support until the equipment runs successfully. The versatile SALOMIX® agitators perfectly match real working conditions.* ”

Raimundas Kazlauskas, Head Maintenance

The Sulzer difference

Sulzer has extensive experience in the starch and sugar markets with thousands of references worldwide. Deep understanding of the main processes and close cooperation with the clients always precede the delivery of top-quality pumps and agitators, highly efficient and reliable. By installing SALOMIX® agitators in the most challenging applications, the client will get:

- Strong support and service before, during and after the order
- An ideal technical solution for real working conditions
- Optimal mixing performance with minimum power consumption
- Trouble-free operation

The challenge

In the process, wheat starch is first liquified and hydrolyzed to get glucose. After filtration and evaporation the wheat glucose syrup with a high dry substance content (74-81%) is pumped into storage bins. Each storage tank, heated and well insulated, is equipped with a side-mounted agitator to maintain the same syrup temperature throughout the whole volume and to prevent sedimentation in the bottom zone. The syrup temperature must be kept low (30-40°C max.) to avoid the formation of brown color during the storage. The viscosity of glucose syrup is therefore quite high, which makes the agitation particularly difficult.

The solution

For the storage tanks, Sulzer delivered SALOMIX® SLF-80 horizontal agitators. These gear-driven SALOMIX® agitators are provided with high efficiency cast propellers that have four blades with an adjustable angle. Prior to delivering the equipment, Sulzer carefully defined the best agitator positioning together with the client and the tank builder (spacing from the tank wall and bottom). Once the agitators were installed and running, the actual maximum viscosity of the glucose syrup was stated to be higher than initially expected, up to 20,000 cP. Thanks to the versatile SALOMIX® concept, some quick modifications could be done. The electric motors were replaced by the next size and the propeller blade angles re-adjusted. After re-starting, the agitation process was optimal.



SALOMIX® SLF-80 propeller with four blades with adjustable angle

Customer benefit

By choosing to work with a long-term partner, the customer made sure to get the right agitators and pumps even for the most difficult applications. The first SALOMIX® agitators that have been running in the Amilina plant since 2006 have proven to be extremely reliable. The new agitators installed in 2014 have also turned out to be highly flexible and they contribute to the successful operation of the new glucose syrup line. All SALOMIX® agitators ensure optimal mixing performance with minimum power consumption. Furthermore, the technical expertise, tailor-made solution and fast and permanent service from Sulzer allow the client an immeasurable peace of mind.

Product data

For the new glucose syrup line, Sulzer provided totally 30 AHLSTAR pumps and 17 SALOMIX® agitators (11 horizontal and 6 vertical). The horizontal SALOMIX® agitators are of the type SLF-80 with various motor sizes.

SALOMIX® horizontal agitators SLF-80.18 DG (on storage tanks)

Tank volume	120 m ³
Tank diameter	4.2 m
Tank height	8.9 m
Tank content	Glucose syrup (20,000 cP max.)
Motor power and speed	18.5 kW – 1,500 rpm
Propeller (4 bladed MX4) diameter and speed	800 mm – 290 rpm
Blade angle	10 degrees

Contact

ilari.pakkala@sulzer.com

Applicable markets

Pulp and paper industry, food industry, chemical process industry, water and wastewater

Applicable products

SALOMIX® agitators