

AHLSTAR A pump solves handling of strong sulfuric acid liquid

The phosphoric acid manufacturing process requires the addition of concentrated sulfuric acid to phosphate rock material in the reaction phase. This is a critical part of the process that affects the quality of the final product.



AHLSTAR A23-40 pump

The Sulzer difference

A troublesome application with low reliability was transformed with the new arrangement. The pump now requires minimal maintenance and the installation is stable and problem-free. The customer was very satisfied.

The challenge

In this challenging phosphoric fertilizer industry application, the existing pumps were fitted with a gland packing seal without flush water supply. Seal flushing was not permitted in order to prevent dilution of the sulfuric acid in the process. Furthermore, corrosion rates were increasing, causing a reduced pump lifetime.

The solution

- The solution was an AHLSTAR A process pump in duplex 41 material with an unflushed single mechanical seal.
- Also fitted to the pump was a bottom drainage arrangement with corrosion resistant pipework and valve.

Customer benefit

- The reliability of the installation improved considerably, and the operating lifetime of the gland seal increased to acceptable levels.
- The installation was further optimized by reducing vibration levels by strengthening the concrete foundation and pump realignment.

Product data

Pump	AHLSTAR A23-40
Material	41, JC-T10T (PTFEg/CER)
Capacity	25 m ³ /h
Head	32 m
Speed	1'450 rpm
Motor	15 kW, 1'500 rpm

Process data

Sulfuric acid	92-98%
Temperature	40°C max
No solids	

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