

H₂SO₄ Dilution

Ways to improve operations and profitability

CASE STUDY

December 2014

PRIMIX static mixers offer an excellent and robust solution to dilute Sulphuric Acid and control the temperature rise due to the exothermic reaction heat.

THE RESULT

- Controlled process
- Low investment
- Downstream piping protected

PRIMIXTM
PERFORMANCE BY DESIGN

Background

In many chemical processes concentrated Sulphuric acid is diluted with water to the required concentration. Applications can be found in the chemical industry but also in the in-situ extraction process of minerals.

The Challenge

Diluting Sulphuric acid is an exothermic reaction. Local hot spots can damage the piping material, especially at the injection point. Chemical resistant materials as Hastelloy® C276 are expensive solutions. Could a combination of PTFE lined pipe components and Primix' knowledge of static mixers be combined and offer an excellent mixing solution for this application?

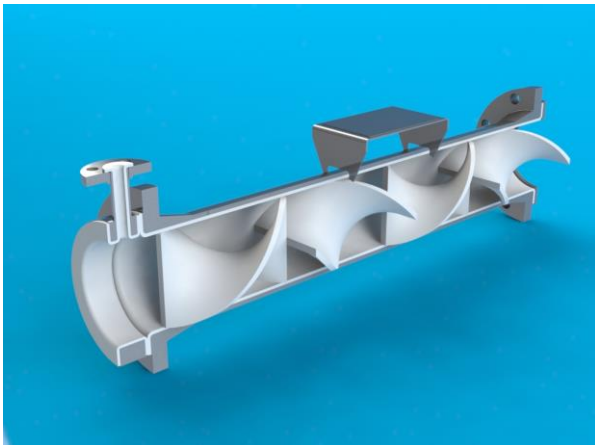
Design

Primix uses PTFE lined CS or SS pipes as mixer housing. Combined with solid PTFE mixing elements, it results in a rigid design that lasts for many years in a severe environment. The mixing elements are retained by a PTFE retaining ring at the outlet of the mixer.

The Sulphuric acid is injected by a PFA lined CS or SS Tee. Where required an injection valve can be installed in the injection Tee. The injection valve itself is made of solid PTFE with a Hastelloy® spring.

Solution

PRIMIX offers complete static mixer assemblies for the dilution of Sulphuric acid. The mixers are designed dedicated to your application and offer a typical pressure drop below 0.5bar. The design has a proven track record with several hundred units installed world wide.



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