

## SIMONA® PP-DWU AlphaPlus® Twin-Wall Sheets: storage tanks for acid solutions



*In the production of aprotinin, tanks made of SIMONA® PP-DWU AlphaPlus® Twin-Wall Sheets replace steel tanks – which are susceptible to corrosion – for storing acid chromatography buffer solutions.*

**When it came to designing chemically resistant tanks, Angenstein AG, a Swiss company, opted for an innovative technical solution: SIMONA® PP-DWU AlphaPlus® Twin-Wall Sheets are used by customer DSM Nutritional Products Ltd Branch Pentapharm as media-resistant, FDA-compliant tanks for acid chromatography buffer solutions in the purification of proteins.**

### The project at a glance

#### Project

Use of chemically resistant buffer tanks made of SIMONA® PP-DWU AlphaPlus® Twin-Wall Sheets for the purification of proteins in the GMP sector

#### Size of the tanks

- Two tanks per unit (volume 2 x 600 l and 4 x 300 l)

#### Requirements

- No corrosion despite constant contact with acids and alkalis
- Light weight for transporting with a hand pallet truck
- Chemical resistance and FDA compliance
- Suitability for sterilisation with clean steam (30 min. at 121 °C)
- High rigidity and strength

#### Client

DSM Nutritional Products Ltd Branch Pentapharm, Basle, Switzerland

#### Manufacturer

Angenstein AG, Aesch, Switzerland

#### Technical support

Technical Service Center  
SIMONA AG, Kirn

#### Products used

- SIMONA® PP-DWU AlphaPlus® Twin-Wall Sheets (PP-HKP)

#### Time of project

3rd quarter of 2008



From left to right: Butt weld at a corner, lid of a tank, bottom of a tank.

## Light, robust and extremely durable: SIMONA® PP-DWU AlphaPlus® Twin-Wall Sheets (PP-HKP)

### Initial situation

DSM Nutritional Products Ltd Branch Pentapharm, a manufacturer of active ingredients for the cosmetics industry, had so far been using steel buffer tanks (2 x 750 l and 4 x 300 l) for aprotinin production. In a chromatography system various buffer solutions are made up in a mixing tank, filtered and forced into buffer tanks with compressed air. However, the steel tanks were always in contact with acids and alkalis. Thus, they were subject to corrosion and traces of metal were detected in the media.

### Task

Pentapharm awarded Angenstein AG, Aesch, Switzerland, a contract to make new FDA-compliant buffer tanks (2 x 600 l and 4 x 300 l) for aprotinin production in accordance with the following requirements:

- Chemically resistant to acids and alkalis
- Rectangular shape due to space available on site
- Light weight for transporting with a hand pallet truck, e.g. to the washing station
- Suitable for cleaning above a manhole using WPE and sterilisation with clean steam (30 min. at 121°C)

### Solution

Angenstein AG opted for SIMONA® PP-DWU AlphaPlus® Twin-Wall Sheets (PP-HKP). PP-HKP sheets combine excellent chemical resistance with light weight, high rigidity and robustness. The flexural strength of a PP-HKP sheet (19 webs/8 mm outer skin) is equivalent to that of a SIMONA® PP-DWU AlphaPlus® solid sheet 40 mm thick, but the sheet only has half the specific weight, which facilitates transport. The material used – PP – has a high level of resistance to microorganisms, so the tanks have no nutrient surfaces before they are cleaned with steam. The SIMONA Technical Service Centre analysed the rectangular tanks with a method of calculation specially developed for Twin-Wall Sheets. The proven welding and processing parameters applied to PP-DWU AlphaPlus® were used for processing the PP-HKP.

### SIMONA® Twin-Wall Sheets (PP-HKP)

#### Properties

- Light weight
- Excellent chemical resistance
- Excellent fabrication capability
- High rigidity and strength
- High fracture resistance
- Many different fields of application

#### Range of products

- Sheets made of PE, PP, PPs or PP-C in various formats with variable web spacing and different sheet thicknesses
- Corner elements

### Further information

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