

# Specialty Chemicals Manufacturer Increases Plant Availability with Dynamic Gain Optimization

## RESULTS

- Increased plant availability and plant revenue
- Minimized product waste
- Reduced capital risk

## APPLICATION

Foam layer control in a chemical mixing and reactor unit

**Application Characteristic:** Styrene and air foam layer over water interface with changing density.

## CUSTOMER

Specialty chemicals manufacturer

## CHALLENGE

This specialty chemicals producer manufactures base resins for the plastics industry. Its chemical mixing and reacting unit was overflowing water into the styrene process vessel. It is critical that water is not pulled off with it.

Variations in specific gravity due to temperature and changing composition of the chemicals had a significant impact on the interface measurement. A sparger was used to create a thick foam layer of styrene, which was pulled off and sent for further processing. Changing density in both layers caused the previously installed differential pressure level transmitters to measure interface incorrectly and caused water to overflow.

Inadequate interface measurement in this mixing and reactor unit had a negative business impact for this manufacturer. Each time this unit had an overflow, there was product waste and the plant had to shutdown. Also, when styrene was not processed adequately, downstream equipment was exposed to corrosive materials.

## SOLUTION

The Rosemount 3302 Guided Wave Radar was installed because it is not susceptible to changes in density. The Rosemount 3302 uses the Dynamic Gain Optimization™ feature to automatically adjust the gain and maximize the signal-to-noise ratio. This ensured that the water didn't overflow due to the dynamic conditions in this application. An additional benefit was the ability to monitor the efficiency of the process by measuring the thickness of the foam layer.



*The patented design of the Rosemount 3302 ensured that the mixing and reactor unit didn't overflow again.*



*The Rosemount 3300 Guided Wave Radar with Flexible Twin Lead Probe*

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The Rosemount 3302 offered the best core technology, which solved the challenges with this application. With reliable interface and level measurement, this customer eliminated water overflow, resulting in increased plant availability, minimized product waste, and reduced capital risk.

### RESOURCES

#### Rosemount 3300 Series

<http://www.emersonprocess.com/rosemount/products/level/m3300.html>

#### Rosemount 3300 Series Product Data Sheet

<http://www.emersonprocess.com/rosemount/document/pds/4811b00n.pdf>

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