



Brown Stock Defoamer Reduces Costs and Silicone Carryover at Southern Softwood Pulp Mill

Advantage™ BN3397 Brownstock Defoamer

Customer Overview:

- Segment: Pulp & Recovery
- Product(s): Unbleached Packaging
- Location: Southern United States

Application Overview:

- Type: Brown Stock Defoamer
- Equipment: 3 Stage Vacuum Drum Washer
- Capacity: 1100 TPD Southern Softwood
- Cook: Conventional Kraft Batch Cook
- Kappa: 83 to 87
- Incumbent: Low Solids Silicone Emulsion

Problem Summary:

This mill was evaporator limited and needed to reduce black liquor volume. Attempts to enhance drainage and reduce shower water on the washer with a defoamer resulted in increased silicone carryover (as measured by PDMS), causing defoamer-related defects in the paper mill.

Customer Objectives:

- Reduce shower water on the brown stock washers to debottleneck the evaporators
- Reduce silicone carryover to the paper machine from defoamer use on the washers

Solenis Solution:

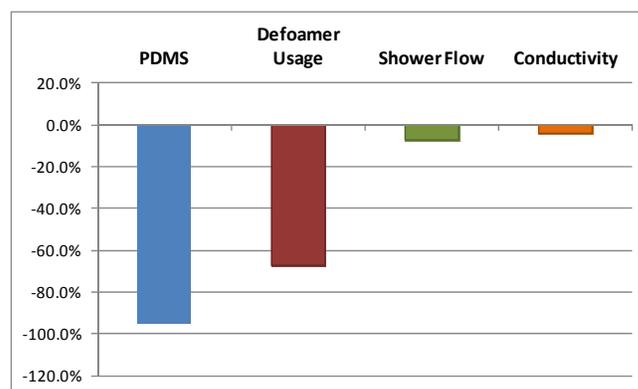
Solenis introduced its BN series of brownstock defoamers to help enhance washing efficiency and improve drainage. These new defoamers are based on unique silicone compounds that improve washing with minimal silicone carryover from the pulp mill to the paper mill. The products also provide superior foam control and drainage on the washers.

Solenis proposed a trial using Advantage BN3397 brownstock defoamer. Feed points were selected to improve washing efficiency, reduce silicone carryover and reduce shower water flows while maintaining conductivity.

By reducing the shower water flow it was possible to reduce the black liquor volumes from the pulp mill, which were contributing to the bottleneck in the evaporators. The enhanced foam control and drainage of the Advantage BN3397 brownstock defoamer also assisted in reducing the overall defoamer feed.

Customer Benefits:

- Reduced silicone in the washed pulp from 40 ppm to <5 ppm
- Reduced shower water use by 7% and washed pulp conductivity by 100 μ s
- Reduced defoamer feed from 1.70 lb/ton to 0.56 lb/ton
- Reduced defoamer spend by \$256,000 per year (does not include savings from reduced steam use in the evaporators and increased machine runnability due to reduced pitch)



Conclusion:

Advantage BN3397 brownstock defoamer is an economical option for pulp mills that want to improve their washing efficiency, reduce their shower water use or reduce silicone carryover to the paper mill. It can be part of an overall program to improve evaporator operations and stability by reducing black liquor volume while maintaining total solids to the boiler. The improved process flexibility and dramatic cost reduction demonstrates the value of this technology.