

## Increase Run Time of an AN Heads Column using SUPERFLUX® Trays

**Customer:** Acrylonitrile Producer

**Location:** North America

**Tower Name:** Heads Column

**Mass Transfer Equipment:** SUPERFLUX Trays

**Problem:** The Acrylonitrile Heads Column was plugging, requiring a four to five day shutdown and cleanout every two to four months.

**History:** Both the Heads and the Absorber tower in this plant were revamped with structured packing. This resulted in improved capacity, however, the Heads tower began plugging, causing repeated shutdowns every 2-4 months.

To clean the tower, the packing was removed, invariably damaging some of the structured packing, which would then have to be replaced on an emergency basis. The packing was cleaned, repacked into the tower, and then started up. Often, it would take another few days before the system was running smoothly again. The loss of production capacity from the downtime nearly negated the capacity increase of the structured packing.

**Solution:** The packing was replaced with anti-fouling SUPERFLUX trays with a guarantee that the run time would be at least doubled from four months to eight months. The anti-fouling trays were installed within the same time frame as any standard tray with minimum modifications to the tower. During the revamp, Koch-Glitsch sequenced the entire operation so that the whole unit did not have to be shut down. Instead, feed was bypassed during the installation, and a

two-thirds production level was maintained. The feed was then re-routed into the newly trayed tower upon completion.

**Results:** As a prudent approach, the customer opted to revamp this column in three steps. The anti-fouling trays worked so well that within one year after the first installation of the SUPERFLUX trays, Koch-Glitsch carried out all three steps of the revamp and replaced all of the structured packing with the SUPERFLUX trays.

During each revamp, the anti-fouling trays previously installed showed no signs of further fouling. Records for run time have been met and broken, capacity has been maintained, and the customer reports that the unit's purity levels have been significantly improved.