





A leading manufacturer of petrochemicals in India reduced their LAB slippage to less than 5% and improved its Acid Color Index, which measures the quality of the LAB, to desired levels using Munters' mass transfer equipment and service.

### Process overview

LAB (Linear Alkyl Benzene) is the reaction product of n-paraffin and benzene. The LAB plant consists of a PACOL unit (reactor) and recovery unit (paraffin column, re-run column and recovery column).

The output from the reactor consists of un-reacted paraffin, LAB and HAB (Heavy Alkyl Benzene), which forms the feed to the paraffin column. The paraffin column separates the un-reacted paraffin from the product and by-product: LAB and HAB.

The re-run column in the loop then separates LAB and HAB. Further in the recovery column LAB, which has slipped along with bottoms of re-run column, is separated out. The LAB extracted from the re-run and recovery column need to be of high purity and have the desired Acid Color Index (ACI).

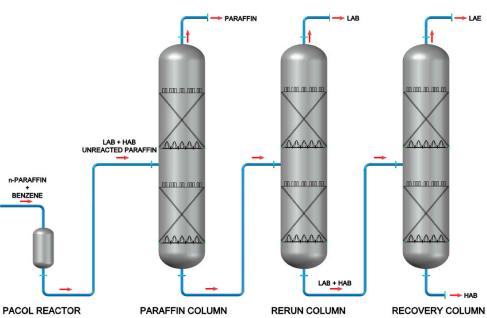
#### Case study

India petrochemical manutacturer LAB plant revamp.

### Quick facts:

- Customer: Petrochemical industry
- Location: Western Indic
- Tower Name: Parattin recovery unit
- Tower Diameter: 1200 mm to 4500 mm
- Mass Transfer Equipment: Random packing (Medal-Pak®) and tower interpals





# Customer requirements

- Maximize recovery of LAB thereby limiting the slippage to < 5%
- Improve Acid Color Index to a range of 20-25

Acid Color Index is the measurement of LAB purity. LAB is mixed with 98% sulphuric acid ( $H_2SO_4$ ) and the color index of the LAB sulfonate is measured. Good quality sulfonate (water like color) must have a color index of 20-25.

# Problem analysis

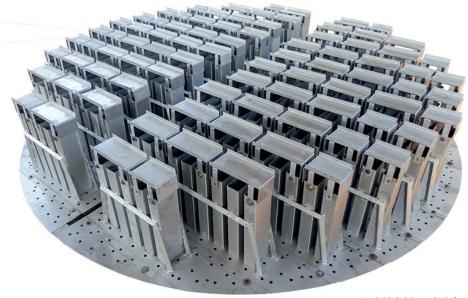
Munters studied the existing system; the slippage of LAB in the recovery column was found to be more than 15% and the Acid Color Index was 30-35, sometimes even reaching 60.

## It was concluded that:

- The existing pall rings had performance limitations
- The existing distributor and redistributors were found to be inadequate for proper distribution quality







Medal Pak & Riser deck distributor

# Solution provided:

The LAB plant was hydraulically rated using Medal-Pak® and high-performance distributors. The LAB slippage was found to be within 5-7%.

## Recommendations to the customer:

- Replacement of existing Pall Ring with high-performance Medal-Pak® tower packings
- Replacement to high-performance distributors and re-distributors to improve distribution quality

The tower internals and tower packings were manufactured, supplied and installed accordingly.

## Results achieved

Plant capacity was increased by 20%. LAB slippage was reduced to less than 5% and the ACI also improved to the desired level.

Would you like to find out if Munters has a solution for your company too? If so, please visit our website, www.munters.com

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