

## **Summary Process Intensification Quick Scan of the Liquid Epoxy Resin plant of Hexion at Rotterdam**

Hexion operates several plants at its production facilities in Rotterdam. The PI Quick Scan focused on the Liquid Epoxy Resin plant. It has an output of 100 kton/a of viscous epoxy resin materials in various grades. The age of the process ranges from 15 to 50 years. Main starting materials are Bisphenol-Acetone, ECH, NaOH and water.

In the reaction section the above described reactants produce the desired epoxy resin. Several steps in the reaction can be discriminated. Mass transfer of reactants and intermediates plays an important role in the overall reaction rate. A thorough understanding of the chemical and transport phenomena taking place in the reactor section would lead to an alternative choice of reactor geometry/design resulting in a higher output/improved reaction rate.

The overall potency of the Liquid Epoxy Resin process for Process Intensification has been judged as: Average for the short/medium term and High for the long term.