

Ethoxylation of Fatty Amines

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Introduction

Ethoxylated fatty amines are a class of non-ionic surfactants, obtained from natural sources (tallow, coco, soya). They are broadly used in several applications e.g. in soaps, textiles, paints, dyes and plastics. The production volume of 5000 million t/a is carried out in long time established semi-batch reactors. We aim to intensify this reaction, while working safely with an explosive, flammable, toxic gas and an exothermic, autocatalytic reaction system.

Project summary

We aim to intensify the reaction through carrying it out in a pressurized one-liquid phase and applying different reactor systems. After gaining a feasible kinetic information in the project focusses now on continuous systems.

A flexible flow set-up was built for propylene- and butylene oxide, Different reactor types or catalyst are tested.

In parallel an automated set-up is used to gain kinetic information of ethylene oxide reactions with amines.



PU-foam



RPBEAD
Reactor



Spinning Disc
Reactor



Project goals

- Collecting kinetic information of the ethoxylation of amines in the automated set-up
- Flow process intensification
- Model Flow and industrial reaction system behavior

Contact information

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