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Technology and Costs

TECH Report 2018: Linear Alkylbenzene (LAB) and Sulfonation Technologies

"Linear Alkylbenzene (LAB) and Sulfonation Technologies" is one in a series of reports published as part of Nexant's 2018 Technoeconomics – Energy & Chemicals (TECH) program.

Background

In the past five decades, linear alkylbenzene (LAB) and linear alkylbenzene sulfonate (LAS) have become two of the most widely used materials in the detergents value chain. LAB is the main feedstock for producing LAS, a commodity surfactant used in biodegradable detergents and other cleaning products.

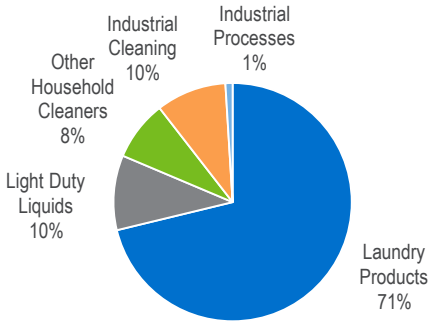
The markets for both of these materials are mature; with developing markets like those in Asia Pacific growing the fastest; global demand in these materials will approximately grow in line with GDP. Capacity growth is expected to be focused on regions with either high demand or low production costs.

Report Overview

This report provides an overview of technological, economic and market aspects of LAB and sulfonation technologies. The following issues are addressed in the report:

- What are the major technologies used for in the production of LAB and LAS?
- How do different sulfonation technologies differ?
- How do the process economics compare across different regions?
- What strategic issues do new entrants face?
- What is the current market environment for these two products?

LAS Demand by End-Use, 2018



Commercial and Emerging Technologies

There is only one freely licensed and commercialized process for the production of LAB, and LAS has several licensors. This report presents the chemistry and process descriptions for these processes

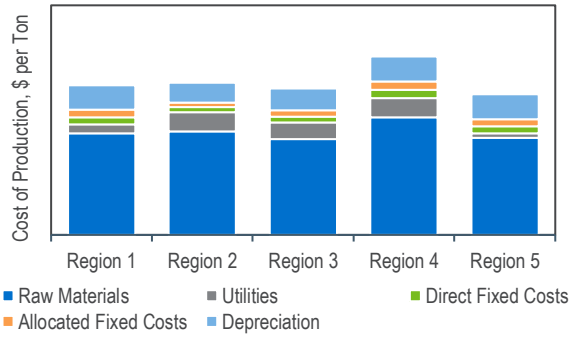
- *n*-Paraffin dehydrogenation from kerosene (UOP)
- LAB production via benzene alkylation (UOP)
- LAS production via the sulfonation of LAB (Desmet Ballestra, Chemithon)

Although these are mature technologies, new aspects of these processes are being developed. Nexant has carried out a high level review of emerging trends in the development of LAB and LAS processes.

Economic Analysis

Detailed cost of production estimates are presented for all the major processes in major production centers. As part of the study, the sensitivity of cost of production to key variables is also examined.

LAB Cost of Production, 2018



Global Market Analysis

This report provides an overview of the supply and demand of LAB and LAS a global basis, with commentary on major trends in major markets. The report highlights the key drivers of demand and major changes in supply to 2022.

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Subscribe to TECH

The TECH program (formerly known as PERP) is globally recognized as the industry standard source of process evaluations of existing, new and emerging of interest to the energy and chemical industries.

TECH's comprehensive studies include detailed technology analyses, process economics, as well as commercial overviews and industry trends. Reports typically cover:

- Trends in chemical technology
- Strategic/business overviews
- Process Technology:
  - Chemistry
  - Process flow diagrams and descriptions of established/conventional, new and emerging processes
- Process economics – comparative costs of production estimates for different technologies across various geographic regions
- Overview of product applications and markets for new as well as established products
- Regional supply and demand balances for product, including capacity tables of plants in each region
- Regulatory and environmental issues where relevant

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- Cost of production tables in spreadsheet format
- Consultation time with the project team

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Technology and Costs comprises the Technoeconomics – Energy & Chemicals (TECH) program (formerly known as PERP), the Biorenewable Insights program (BI), the Sector Technology Analysis, and the new Cost Curve Analysis. These programs provide comparative economics of different process routes and technologies in various geographic regions.

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