



Specialty Styrenics is one in a series of reports published as part of Nexant's 2018 Technoeconomics – Energy & Chemicals (TECH) program.

Overview

Specialty Styrenics are considered engineering plastics because of their broad, controllable property profile and diversity of processing methods that permit the manufacture of durable, high quality components suitable for technically sophisticated applications. The styrenics copolymers or specialty styrenics covered in this report include acrylonitrile styrenic acrylate (ASA), Methyl Butadiene Styrene (MBS), Methyl Acrylate Butadiene Styrene (MABS), Styrene Methyl Methacrylate (SMMA). The main fields of application for styrenic copolymers and their blends are automotive, electrical/electronics, medical and leisure items.

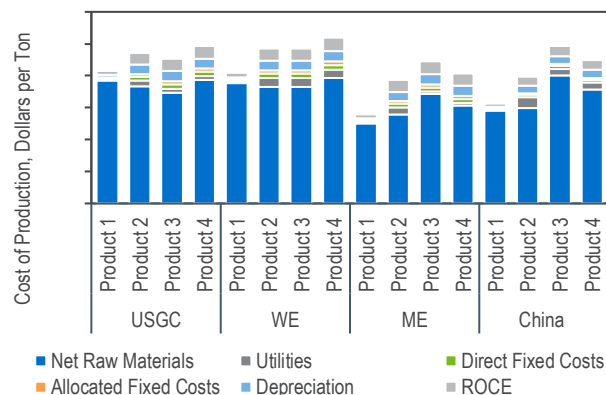
This TECH report provides an updated overview of the technological, economic, and market aspects of the four specialty styrenics (i.e. ASA, MBS, MABS, SMMA). The following issues are addressed in this report:

- What technologies are used in the production of specialty styrenics? Are the technologies available for license?
- How do the process economics compare across different products and across regions?
- How big is the market for specialty styrenics? What are the major market applications and growth drivers?
- What property advantages do the specialty products offer over commodity styrenics?

Commercial Technologies

Specialty styrenic products can be produced in the commodity styrenics manufacturing units, with modifications in the raw material consumption and operating conditions. For example, SMMA can be produced in modified PS or PMMA plants. Similarly, MABS and ASA in modified ABS plants, and MBS in modified HIPS plants. These technologies are analyzed and discussed in this TECH report.

Regional Cost of Production Comparison for ASA, MBS, MABS, SMMA



Process Economics

Detailed cost of production estimates for technologies for manufacturing ASA, MBS, MABS and SMMA are presented for USGC, Western Europe, China, and Middle East locations. Also, sensitivity of the process economics as a function of feed price and economy of scale are analyzed for USGC.

Commercial Overview

Global specialty styrenics consumption was about 775 000 tons in 2017, with ASA being the largest market followed by MBS. A key driver for demand is the application in building & construction (ASA), as well as in medical (for MBS, MABS, SMMA) segments.

The supply side is dominated by few companies, mostly integrated into styrenic monomers production. INEOS and LG Chemical are the biggest players, manufacturing the entire slate of products. This TECH report provides an overview of the demand at global and regional (North America, Western Europe, China, and Other Asia) level. A global list of specialty styrenics producers is also provided, including capacity information where available.



TECH Report 2018-5: Specialty Styrenics

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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.

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- Strategic/business overviews
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 - 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
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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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