

Subscribe to NexantThinking™



PERP 2016S2: Phthalic Anhydride

“Phthalic Anhydride” is one in a series of reports published as part of the 2016 Process Evaluation/Research Planning (PERP) Program.

Report Overview

Global phthalic anhydride (PAN) demand was estimated at 4.5 million tons in 2016. Although PAN remains mostly manufactured from ortho-xylene, high ortho-xylene prices in recent years compared with naphthalene prices encouraged a few producers to build naphthalene-based PAN plants or convert their existing lines to consume naphthalene.

This PERP report reviews the commercial PAN production processes as well as details the separation of ortho-xylene from mixed xylenes and the naphthalene distillation from coal tar.

The report also examines the motivations behind the recent capacity additions and closures and provides a high-level analysis of the business and strategic considerations, as well as technology availability, from the perspective of a company entering or expanding into the PAN market.

This analysis is underpinned by a review of end-use sector consumption as well as regional market dynamics.

The following issues are addressed in the report:

- What are the main PAN technologies and how do they differ?
- Is the naphthalene route more cost competitive than the ortho-xylene route? Will it regain importance?
- Is it essential to be back or forward integrated?
- Who owns and what is the capacity of the ortho-xylene, naphthalene and PAN plants in operation today?
- How have environmental concerns related to phthalate plasticizers impacted PAN demand? How have producers adapted their businesses?

Commercial and Developing Technologies

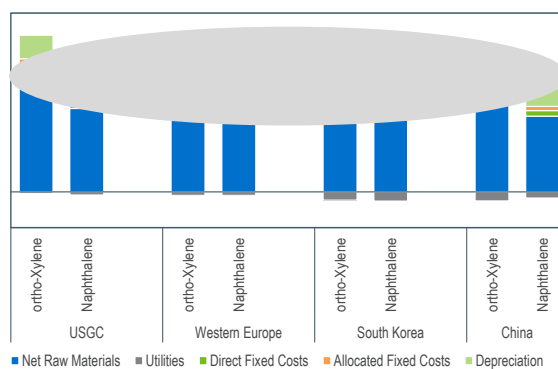
BASF, Technobell, ExxonMobil, Arkema and Conser technologies have been detailed in this PERP. The key differences between commercial processes are highlighted in the report, as well as the availability of these technologies via licensing or joint venture.

Alternative routes to PAN are being researched using either *n*-pentane or maleic anhydride and furan. The report summarizes the latest developments and indicates whether these alternatives are likely to threaten existing producers.

Process Economics

The PAN cost of production via the ortho-xylene and the naphthalene routes for plants located in the United States, Western Europe, South Korea, and China has been estimated for the first quarter of 2016.

PHTHALIC ANHYDRIDE PRODUCTION COST VIA THE ORTHO-XYLENE AND NAPHTHALENE ROUTES IN KEY REGIONS



Commercial Market Review

Phthalic anhydride is mainly used to make plasticizers such as dioctyl phthalate (DOP or DEHP) or disononyl phthalate (DINP) which are mainly consumed in the construction, electrical goods and automotive industries. Unsaturated polyester resins are the second main application and are used in the manufacture of reinforced laminates, and in specialized applications such as surface coatings. The third use for PAN is in alkyd resins, most of which are used in solvent-based paints.

This PERP report reviews the historical (2013-2015) and projected (2016-2021) PAN supply, demand, and trade on a global and regional basis (North America, Western Europe, Asia Pacific and the Rest of the World). A regional capacity listing is also provided for ortho-xylene, naphthalene and PAN. Their main end uses are also detailed.

PERP Subscription Options

PERP Reports can be purchased as an annual subscription to the full program or on an individual basis, including reports from earlier program years. For a complete list of PERP Reports, please visit us at thinking.nexant.com.

NexantThinking™

NexantThinking reports and subscription programs provide clients with comprehensive analytics, forecasts and insights for the chemicals, polymers, energy and cleantech industries. Using a combination of business and technical expertise, with deep and broad understanding of markets, technologies and economics, NexantThinking provides solutions that our clients have relied upon for over 50 years.

Global in scope, Nexant serves its clients from over 30 offices located throughout the Americas, Europe, the Middle East, Africa and Asia.

Subscribe to our thought leadership today and explore our products and services at:

thinking.nexant.com

Corporate Headquarters

Tel: +1 415 369 1000
101 2nd St Suite 1000
San Francisco
CA 94105-3651
USA

Americas

Tel: +1 914 609 0300
44 S Broadway, 4th Floor
White Plains
NY 10601-4425
USA

Europe, Middle East & Africa

Tel: +44 20 7950 1600
1 King's Arms Yard
London EC2R 7AF
United Kingdom

Asia Pacific

Tel: +662 793 4600
22nd Floor, Rasa Tower I
555 Phahonyothin Road
Kwaeng Chatuchak
Khet Chatuchak
Bangkok 10900
Thailand

