Report Overview

The mixed C\textsubscript{5} stream contained in the pyrolysis gas (pygas) from steam cracking is a rich source of diolefins. The normal fate for these C\textsubscript{5} diolefins within most steam cracker complexes is in the gasoline pool or in recycle co-cracking. However, some steam crackers depentanize the pygas, opening up several options to add chemical value to the C\textsubscript{5} stream in applications such as hydrocarbon resins, elastomers of various kinds, and even fine chemicals. The major C\textsubscript{5} components which are currently extracted or synthesized for chemical uses include isoprene, dicyclopentadiene (DCPD), and piperylene.

A first impression of the C\textsubscript{5} chemicals industry could be one of relatively healthy profit margins, set against a background of reliable supply sources from established steam crackers, coupled with firm demand fundamentals for C\textsubscript{5} components in growing end-use markets. However, there has been limited recent investment activity in this sector due to various reasons such as uncertainties in oil price, low natural rubber price and poor economic environment. The C\textsubscript{5} chemicals sector evidently presents not only various potential business opportunities, but also a host of investment hurdles and strategic considerations. The objective of this study is therefore to examine the current and developing situation in the global C\textsubscript{5} chemicals industry today.

Subjects Addressed

This report aims to provide a comprehensive business analysis, including commercial, technical, economic, and strategic considerations, addressing the following key issues facing the C\textsubscript{5} chemicals sector:

- C\textsubscript{5} availability and supply potential amidst evolving developments in the ethylene industry
- Criteria for extracting unsaturated C\textsubscript{5} streams from by-product streams of steam crackers

Some Key Questions Answered

Market factors:

- What are the implications for crude C\textsubscript{5} supply, based on projected feedstock preferences and investment patterns in the ethylene sector?
- What are the key features and development trends in end-use markets, and how will these impact the outlook for C\textsubscript{5} chemicals and derivatives demand?
- What are the major threats for market growth for each of the C\textsubscript{5} chemicals?

Strategic considerations:

- Are there opportunities in the merchant market, or will investments heavily rely on forward integration?
- Is the demand and price of the C\textsubscript{5} chemicals attractive enough to make installing of extraction units economical?
- What are the main entry barriers for entering each of the individual C\textsubscript{5} chemicals business?
- Should producers be looking into on-purpose production processes (especially for isoprene) for reliable supply of feedstock?

Who Should Buy Oil Price and the Cost Competitiveness of Petrochemicals?

This report has been designed to be of benefit to both existing players and new entrants within the entire C\textsubscript{5} chemicals value chain. For the steam cracker operators, the report aims to evaluate the opportunities that could potentially increase their competitiveness within the industry. For new entrants, the report aims to provide guidance on business considerations for entering the industry from both the supply to demand sides.

For information regarding the report, C\textsubscript{5} Chemicals: Unlocking Hidden Opportunities in Steam Crackers?, please contact STMC@nexant.com.

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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

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