

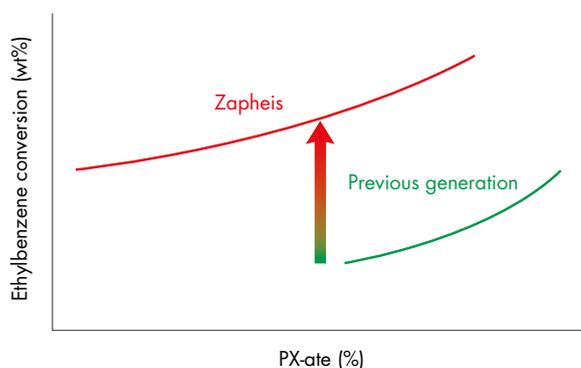
Zapheis: A new solution for xylene isomerisation catalysis

High performance from a low-density catalyst system

Zapheis catalyst is the high-performance, next-generation xylene isomerisation catalyst from Zeolyst International. This state-of-the-art formulation offers significant benefits: higher ethylbenzene activity, lower gas production and lower hydrogen consumption.

Key features of Zapheis

- **High ethylbenzene activity** reduces ethylbenzene production and increases paraxylene concentration in the xylene loop.
- **Superior ethylbenzene conversion** enables processing of low-grade feeds that are high in ethylbenzene, e.g., pyrolysis gas C8, while maintaining performance in ethylbenzene activity and catalyst life (more than four years).
- **Low gas production** translates into a higher liquid yield and potentially less flaring.
- **Low hydrogen consumption**
- **Balanced PX/OX approach to equilibrium** at a high weight hourly space velocity (WHSV)

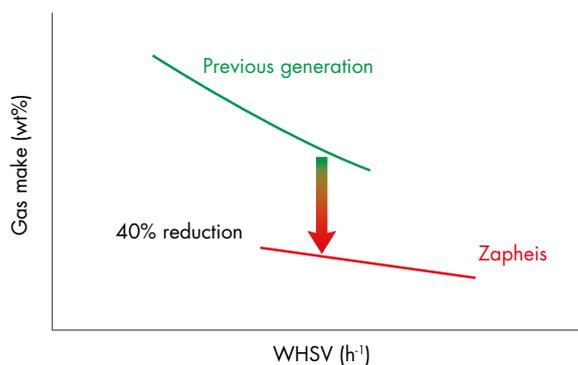


Zapheis provides a significantly higher ethylbenzene activity than the previous generation at the same paraxylene conversion level

Zapheis has one of the highest ethylbenzene activity ratings in the market, which, combined with features such as low gas production and low hydrogen consumption, makes it one of the most feed-efficient catalysts on the market.

Applications

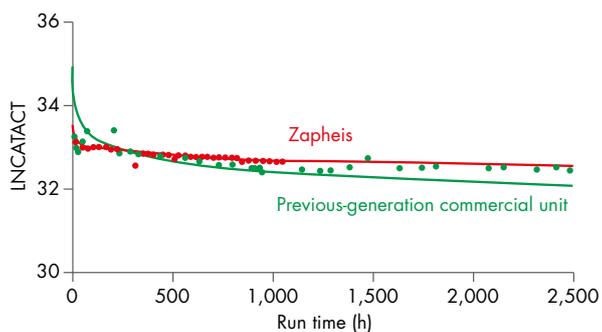
Zapheis is designed for use in aromatics complexes where the conversion of ethylbenzene to xylenes is required in combination with the isomerisation of xylenes into the equilibrium composition. It is particularly useful for applications designed to maximise orthoxylene production. The high activity and selectivity of Zapheis catalyst provide the opportunity for catalyst replacement to debottleneck operations and the ability to minimise benzene production.



Compared with the previous generation, Zapheis offers a 40% reduction in C1–C5 gas production

Advantages of Zapheis

Conventional, high-density catalyst products require significant customer investment in catalyst volume and the associated platinum costs. In contrast, Zapheis is a low-density product that offers premium performance at a much lower cost.



Long-term catalyst activity testing shows that Zapheis has an ageing rate equivalent to a commercial previous-generation catalyst

In addition, plant operators can utilise Zapheis to achieve higher ethylbenzene conversion at the same WHSV per catalyst load. Substantial cost savings can be achieved on catalyst and platinum utilisation (up to 50% compared with conventional catalyst systems). Selecting Zapheis provides the opportunity to install smaller reactors for grassroots projects.

The low rate of gas production associated with Zapheis reduces process hydrogen consumption by up to 40%. This benefit has the potential to significantly lower hydrogen supply costs.

Plant operators that focus on maximising the production of orthoxylene can achieve their process goal with the higher orthoxylene rate provided by Zapheis (up to 20%).

For more information on how Zeolyst International, Criterion Catalysts & Technologies and Shell Global Solutions can contribute to your operations, please contact your nearest Criterion sales representative or visit our website at www.zeolyst.com.

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