



# State-of-the-art toluene disproportionation

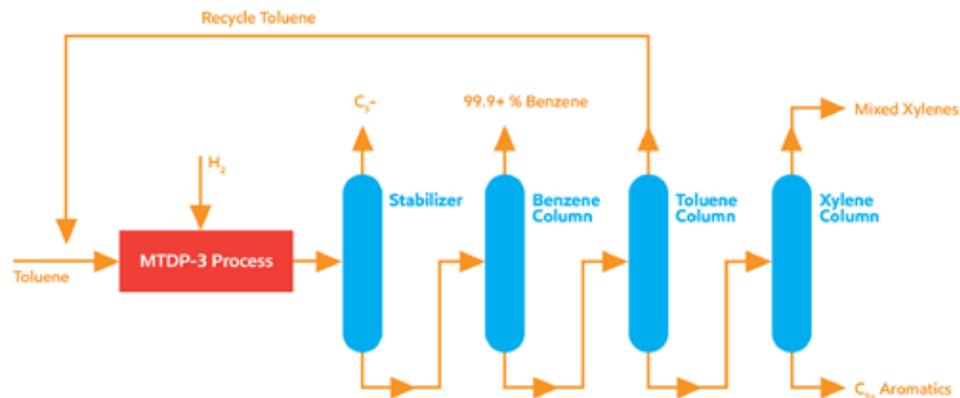
## MTDP-3 technology upgrades toluene to high-value products

Energy lives here

MTDP-3 is designed to process toluene and limited amounts of C<sub>9</sub> aromatics and can allow for inexpensive debottlenecking of existing toluene disproportionation (TDP) facilities. The process is ideal for toluene upgrade to more valuable chemicals without investing in paraxylene separation facilities.

### MTDP-3 process

Based on a proprietary zeolite catalyst, MTDP-3 toluene-conversion technology allows for robust production of high-value mixed xylenes and high-purity benzene at minimal cost. Highly selective and stable, MTDP-3 is a simple fixed-bed process with first cycle lengths typically exceeding seven years with stable product yields across the cycle.



### Key benefits

- High product yields**
  - High benzene and mixed xylene yields
  - Excellent xylene/benzene ratio
- Low operating cost**
  - Low catalyst costs
  - Very low H<sub>2</sub> consumption
- High product quality**
  - Benzene product exceeds 99.9% purity

## Legacy of leadership and support

ExxonMobil has led the development and application of technologies for xylenes and benzene production since the discovery of ZSM-5 in the late 1960s. As part of our license, we provide full support from initial consultation through technology transfer and ongoing improvements to ensure operators achieve full value.

## Performance advantages

The MTDP-3 toluene-conversion process offers significant benefits to operators, including:

- Very high toluene conversion per pass
- High benzene product and mixed xylenes product yields
- High weight hourly space velocity
- Excellent xylenes/benzene ratio
- Benzene product with greater than 99.9% purity
- Very low H<sub>2</sub> consumption
- Low catalyst cost
- Low operating cost
- Long catalyst cycles
- Low costs and inexpensive debottlenecks
- Easy retrofits

## About us

ExxonMobil helps refiners and petrochemical manufacturers increase capacity, lower costs, improve margins, reduce emissions and operate safe, reliable and efficient facilities. Along with a commitment to helping to implement best practices and to achieve better results, we provide cutting-edge proprietary catalysts and license advantaged process technologies for refining, gas and chemical needs.

Commercial experience at multiple sites  
over the past 20+ years.

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