



KBR Catalytic Olefins Technology (K-COT™)

KBR Catalytic Olefins Technology (K-COT™) is a commercially proven technology for converting low-value olefinic, paraffinic or mixed streams into high value propylene and ethylene. K-COT builds on KBR's experience in developing catalytic olefins technology for various feed types, and combines the know-how into one technology offering. This technology can be implemented as a standard-alone olefin production unit or be readily integrated into a refinery or petrochemical complex to enhance profitability, operational flexibility and to meet market-driven product demand.

KBR, combines Orthoflow™ fluidized catalytic cracking reactor system with proprietary catalyst which selectively converts olefinic, paraffinic or mixed feeds to large quantities of FCC propylene and ethylene. The K-COT reactor system includes the Orthoflow configuration, closed cyclones, third stage separator, patented catalyst well for continuous fuel firing, and patented catalyst removal system.

Values and Benefits

An alternative to steam cracking

When implemented in place of a standard steam cracker unit for paraffinic feeds (ex: naphtha), K-COT delivers higher propylene-to-ethylene ratio and higher olefins yield. K-COT delivers 1:1 propylene-to-ethylene ratio, compared to 1:2 ratio delivered by steam crackers. In addition, K-COT delivers 10-25% more total olefins than steam cracking.

K-COT operates at milder temperatures than cracking furnaces, produces very little coke and uses commonly available straight-run naphtha feed.

K-COT offers a lower TIC and a production cost per metric ton of ethylene up to \$70 less than thermal cracking.

Upgrade low value streams

K-COT can also be used to produce propylene from a variety of C4-C10 feeds.

The technology effectively upgrades a variety of processes and feeds, including olefin-rich streams such as:

- Mixed C4s from refineries and conventional steam crackers
- Amylenes, TAME raffinate and mixed C5s
- Cracked naphtha from FCCs, steam crackers, cokers and visbreakers
- Oxygenates, such as methanol and ethanol
- Other low-value olefinic streams

Technology Advantages

- Flexibility to design for olefin-rich feed streams, straight-run naphtha or any combination thereof
- Orthoflow reactor configuration reduces height and plot space

- Dual Risers provide flexibility and increases capacity when appropriate
- Proprietary Closed Cyclones maximizes yield
- Proprietary Third Stage Separator reduces emissions from petrochemical production
- Lower cost reactor and recovery section designs improves petrochemical production economics
- Energy efficient recovery section reduces operating costs, increases profitability
- Economy of scale with potential of 1,500 kta ethylene + propylene from a single reactor

For more information on K-COT™ Technology, please visit our KBR [Petrochemicals publications](#).