

# This on-purpose butadiene process takes a step closer to commercialization

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Last month, The Linde Group (Pullach, Germany) and BASF announced plans to cooperate in developing and licensing processes for the on-purpose production of linear butenes and butadiene. BASF has developed process technology and catalysts as well as the extraction technologies, while Linde is providing its expertise for the integration, optimization and commercialization of the process.

Butadiene is a monomer used for the production of polymers, paper coating and synthetic rubber mainly for tire production. Butenes are building blocks that are used in the chemical and petroleum-refining sectors. Currently, the industry relies mainly on butadiene as a co-product from naphtha-cracking to ethylene. The shift to lighter cracker feedstock (results in reduced volumes of co-products (C3 and C4 hydrocarbons). Therefore the on-purpose production of higher olefins is gaining more and more importance.

The new process will deliver an on-purpose route from butane to butadiene via butenes. For the synthesis of butenes from butane, BASF developed a novel monolithic catalyst that is said to utilize the precious-metal component much more efficiently than conventional technology, while achieving a high yield of butenes. Linear butenes are oxydehydrogenated into butadiene using a mixed metal-oxide catalyst, which has a high activity and selectivity, says BASF. Butadiene is extracted from the C4 stream using a butadiene-selective solvent, and then purified by distillation. The BASF extraction technology has been proven for butadiene, and will be used for the purification in both process steps.

"The new BASF technology is currently being developed by mini-plant (kilogram scale) and pilot-plant (500 kg/h) operation in Ludwigshafen," says Heinrich-Josef Blankertz, senior vice president Global Technology, of BASF's Petrochemicals division. "We are optimistic that we can offer a new best-in-class technology for the manufacturing of on-purpose butadiene to help producers meet the increasing global demand."

*SOURCE Engineering Plastics*