

# Chemical profile: US butadiene

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## USES

About 75% of the butadiene (BD) produced in the US is used for the production of synthetic rubber, including styrene butadiene rubber (SBR), which is used in varying degrees to make tyres.

About 80% of the SBR market is for replacement tyres, a market segment that affects both SBR and BD up through the supply chain. Demand for SBR and BD has been significantly reduced because of weak macroeconomics in Europe and Asia and an only slightly better consumer market in the US.

Most of the rest of US BD production goes toward making acrylonitrile-butadiene-styrene (ABS), which is used to make plastics for the automotive industry.

Another large ABS market is appliances and electronics, which is mostly driven by the housing market. A small portion is used for plastic piping in housing.

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## SUPPLY/DEMAND

Overall US BD supply is expected to remain balanced-to-tight in 2017. Although there are four new crackers scheduled to come online this year, the three world-scale units are scheduled in the second half. Players do not expect a significant impact on supply of ethylene – and in turn, co-products such as BD – until about Q4.

There are two or three BD extraction units that are scheduled to undergo turnarounds in 2017, and unexpected production issues could constrain supply. Currently, one producer is said to be on allocation.

Any excess volumes are likely to be fixed for exports as long as Asia prices remain firm. Asia values have been high for much of 2016 and into the beginning of 2017. This has resulted in a wide arbitrage window with other regions.

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Demand in the US market is expected to continue to grow at a slow but steady rate. In the synthetic rubber market, several factors – including lower miles driven, technological advances, as well as social and lifestyle changes – have led to longer replacement cycles of when consumers change their tyres.

The Rubber Manufacturers Association (RMA) forecasts that tyre shipments in 2016 will show a slight 0.3% gain year on year, and this trend could continue in 2017.

There are a number of new tyre plants that are starting up in 2016 and 2017, which means higher consumption of rubber, as well as BD. While some BD players are hoping to see 50% of consumption from the new tyre plants for domestically made product, others are sceptical the US market will see much, if any, significant increase in demand.

BD consumption levels should also see some boost from other derivatives such as ABS and nylon 6,6, particularly amid strong demand for engineering plastics in cars. The market could also see some increased demand from the downstream synthetic butadiene latex (SBL) market.

## PRICES

US January BD contracts fully settled at individual increases of 10 cents/lb for three producers and 21 cents/lb for one producer. The settlement puts US BD contract prices at their highest level since June 2014.

Players had been expecting a large jump in January contracts because of the relentless price surge in Asia, but sources had pegged various increases of 6-10 cents/lb before Asia values surpassed the \$2,000/tonne mark.

For now, spot pricing remains unclear as domestic consumers and traders looking to export are wide apart on buying ideas. With excess volumes scarce, sources said it is difficult to determine where spot pricing is.

Sentiment remained bullish as sources acknowledged that any near-term spot trades were likely to be done for export. There was also belief that US prices should remain aligned with values in other regions in order to keep volumes in the domestic market.

## TECHNOLOGY

BD is produced as a byproduct of the same steam cracking process used to produce ethylene and other olefins.

Traditionally, BD has been made from heavier feedstocks such as naphtha as it results in a greater yield. But with the abundance of lighter feedstocks in North America, more BD is now made from ethane, despite the lower yield.

TPC, the largest producer of BD in the US, has announced plans to build a plant that makes BD by dehydrogenating normal butane. TPC continues to develop the technology, but said the need for the plant in the US has been delayed due to slower growth in the BD market.

There are also efforts under way to produce BD from biomass, but they are still in the experimental phase.

Source *Icis News*