

# ***Petroleum and Petrochemicals Economics Program: Petrochemical Market Dynamics***

## ***Butadiene Derivatives 2013***

Butadiene Derivatives 2013 is one in a series of reports published annually as part of the Petroleum and Petrochemical Economics program.

This Market Dynamics report provides an in-depth analysis and forecast of key petrochemical products including butadiene, styrene butadiene rubber, butadiene rubber, acrylonitrile butadiene styrene and other butadiene derivatives.

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# Abstract

Butadiene – a key raw material for production of synthetic rubber used in tyres and other vehicle applications, as well as general rubber goods, other polymers and latex – is closely tied to production of vehicles and replacement tyres. As a result, butadiene demand is driven by GDP, new vehicle sales and by cyclical sales of replacement tyres.

Global butadiene demand increased between 2009 and 2011, as the global rubber and plastics industry recovered following the recession. However, the recovery lost momentum in 2012 and consumption declined by 0.5% in 2012 to just under 10.5 million tons. Butadiene consumption declined in North America, Western Europe, and South America, and was flat or low elsewhere; demand for tyres remained stable, leading to no demand growth for butadiene rubber and styrene butadiene rubber.

Butadiene rubber (BR) was the largest end-use of butadiene in 2012, accounting for nearly 30% of total demand, followed by styrene butadiene rubber (SBR), styrene butadiene latex (SBL) and acrylonitrile butadiene styrene (ABS). The balance of around 25% includes hexamethylenediamine (HMDA) and various other products.

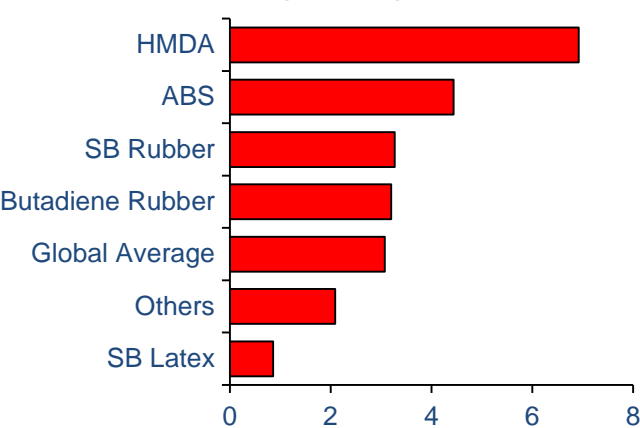
Approximately two-thirds of BR is consumed in tyre production. BR is generally consumed in the side-walls of tyres due to its low susceptibility to flex-cracking and high weather resistance. Most BR for tyre is the high cis product, which is easy to process and exhibits good wear properties.

In an effort to reduce fuel consumption, there is a trend toward smaller cars and the implementation of “green tyres”, actually high performance tyres, with lower rolling resistance decreasing fuel consumption when compared to general purpose tyres. They are produced with high-cis BR (e.g. neodymium catalysed or Nd-BR) in the tyre sidewall.

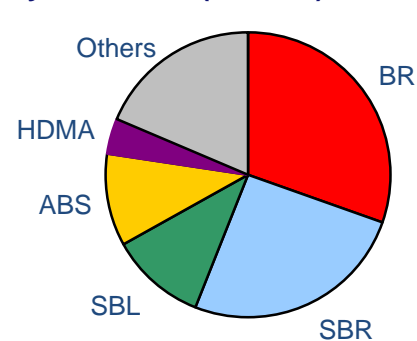
Global butadiene production between 2010 and 2012 was hit by high naphtha prices, the shortage of mixed C4, and the recovery of the tyre and automotive industry. Concurrently, global butadiene capacity during this period increased by over 650 000 tons, largely in Asia.

From 2012 to 2015, Asian butadiene capacity will grow by more than 2.4 million tons per year, with significant new butylene dehydrogenation capacity in China, which, while high cost, will reduce butadiene price volatility.

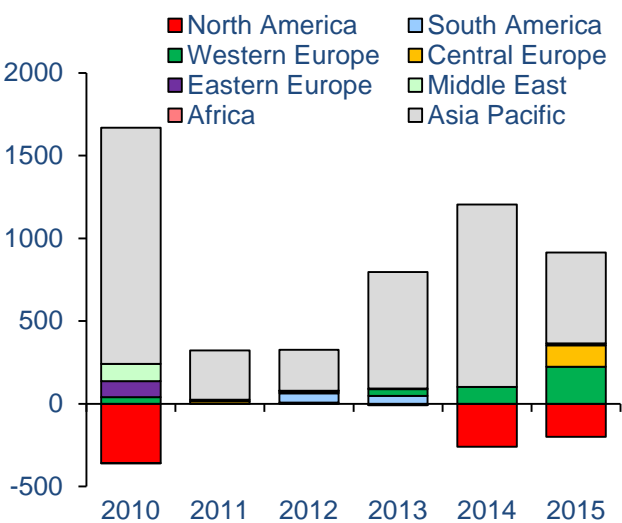
Global Butadiene Consumption Growth (Volume), 2012-2020



Global Butadiene Consumption by Derivative (Volume), 2013-e



Butadiene Capacity Additions/Closures (Volume, 000 tons)



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Including styrene butadiene latex and hexamethylene diamine (HMDA)

Each regional analysis is segmented into three main sections:

- Consumption: Assesses historic and forecast consumption; forecasts are based on projections of end-use and economic activity.
- Supply: Includes a list of all producers, their production capacity, location, etc., and discussion of the status of new projects.
- Supply, Demand and Trade: Provides historical analysis and forecasts to 2030 of consumption, production, imports/exports, inventory build-up/decline, capacity and capacity utilisation.

This analysis will identify the issues shaping the industry, as well as provide an independent appraisal of the market.

### Appendix

- A. Methodology
- B. The Butadiene Derivatives Industry - Technology

## Subscribing to Butadiene Derivatives 2013

Global subscriptions are available. Customised subscriptions are available by geography or product. The report is segmented by region with additional geographic segmentation included within the ChemSystems database.

Subscription to Butadiene Derivatives 2013 includes:

- One hard copy of the report
- 12 month access via the ChemSystems website, [www.chemsystems.com](http://www.chemsystems.com), to:
  - Unlimited downloads of soft copies
  - Interactive charts with downloadable data in excel covering 38 geographic segments, including China, United States, Saudi Arabia, etc
- Consultation time with the project team



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