# Argus report sample

**Butadiene Analytics** 

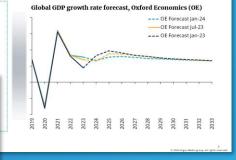
**July 2024** 

### **Global: Economy**

Central banks appear to have tamed inflation for now. The global GDP forecast continues to be revised lower for longer as China's growth lags.

#### andemic Central banks are likely to keep inflation rates down slowly.

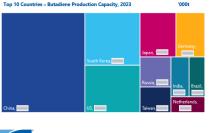
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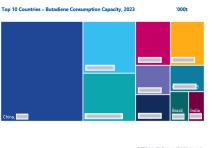


#### World butadiene industry overview, 2019-2033

Asia-Pacific will remain the production and demand center.

- · China remains the leader for both BD production and consumption. Its ability to lift domestic consumption, find derivative export outlets and gain market share will sway global demand.
- Europe is in a delicate place as the industry undergoes strategic business reviews of assets.
- · The US is on the cusp of becoming more balanced as imports slide during the last half of the forecast period.





### **About this report**

Argus Butadiene is a data-driven evaluation of supply-demand fundamentals forecasts for butadiene markets, published twice a year.

The service includes a 10-year forecast and five-year history covering balances and capacities, organized by country and region.

In this sample, we share an overview of the global Butadiene industry as well as insights from North America.

Subscribers receive a PowerPoint PDF written by our experts plus the accompanying Excel data files.

To find out more, <u>click here to get in touch</u>.





# **Key features**



10-year forecast and a five-year history
Features capacities, supply and demand
and trade for leading derivatives, by
country and region, published twice a
year.



Detailed report
In an easy-to-read PowerPoint format
focusing on new plant capacities, growth
rates in relevant markets, and global trade
flow.



Regional insight
Covering capacities and operating rates
based on global trade and economics.



Downloadable datasets
With data on supply, demand, capacities,
operating rates and trade balances, by
country and region.



Access to specialists
Speak to the experts behind Argus' longterm analytics forecast services.



### **Associated Data**

### Butadiene Analytics Balance 2023; global supply, demand and trade by country

Subscription includes detailed Excel downloads





### **Associated Data, continued**

### Capacity list for Butadiene with first-line derivatives and Company Balances

Acrylonitrile-Rutadiene-Styrene

Northeast Asia

Argus direct Copyright 2024 © ArgusMedia Butadiene Polybutadiene Styrene-Butad Styrene-Butad Styrene-Butad Acrylonitrile-B Nitrile Rubber Methylmethac Nitrile Rubber Styrenic Block Other-Takht-e Jamshid Petrochemical Middle East Bandar-e Mahshahr Middle East Saudi Arabia Arlanxeo Al Jubayl Middle East Saudi Arabia Al-Jubail Petrochemica Al Jubayl North America US Lion Elastomers Orange North America US Goodyear Tire & Rubber Beaumont North America US Firestone Polymers Lake Charles North America LIS Argus direct argus Zhejiang Transfar Synthetic Materials Northeast Asia China China Copyright © 2024 Argus Media Northeast Asia China Yulongdao Refining & Petrochemical Capacity list for butadiene and its first-line derivatives, '000t Northeast Asia China TSRC-Ube ▼ Source ▼ 2019 ▼ 2020 ▼ 2021 ▼ 2022 ▼ 2023 ▼ 2024 ▼ 2025 ▼ Tianli High & New Tech Northeast Asia Tabriz Petrochemical Northeast Asia China Sinopec Shanghai Gaoqiao Acrylonitrile-Butadiene-Styrene Middle Fast Northeast Asia Shandong Yulong Petrochemicals China Acrylonitrile-Butadiene-Styrene Middle East Saudi Arabia Petrokemya Al Jubayl Northeast Asia Huayu Rubber China Acrylonitrile-Butadiene-Styrene Middle Fast Jam Petrochemical Bandar-e 'Asaluveh Northeast Asia China Haopy New Materials Technology Acrylonitrile-Butadiene-Styrene Middle East Iran Ghaed Bassir Petrochemical Isfahan Northeast Asia Japan Ube Industries Northeast Asia Taiwan TSRC Acrylonitrile-Butadiene-Styrene North America US SABIC Ottawa Northeast Asia South Korea Lotte Versalis Elastomers Acrylonitrile-Butadiene-Styrene North America US SABIC Bay Saint Louis Northeast Asia Japan Japan Elastomer Acrylonitrile-Butadiene-Styrene North America Mexico SABIC Altamira Northeast Asia ENEOS Japan **INEOS Styrolution** Acrylonitrile-Butadiene-Styrene North America Mexico Altamira Asahi Kasei Acrylonitrile-Butadiene-Styrene North America US **INEOS Styrolution** Addyston Russia and Central Asia Russia Zhenjiang CHIMEI Chemical Acrylonitrile-Butadiene-Styrene Northeast Asia China Russia and Central Asia Russia Efremov Kautschuk Zhenjiang South Asia India Indian Oil Corporation Acrylonitrile-Butadiene-Styrene Northeast Asia Zhejiang Petrochemica Southeast Asia Thailand Thai Synthetic Rubbers Acrylonitrile-Butadiene-Styrene Northeast Asia China Zhangzhou CHIMEI Chemical Gulei Southeast Asia Indonesia PT Synthetic Rubber Indonesia Acrylonitrile-Butadiene-Styrene Northeast Asia Zhangzhou CHIMEI Chemical Gulei Southeast Asia Malaysia Lotte Ube Synthetic Rubber Yulongdao Refining & Petrochemical Southeast Asia Malaysia Lotte Ube Synthetic Rubber Acrylonitrile-Butadiene-Styrene Northeast Asia China Yantai Southeast Asia Singapore Arlanyen Acrylonitrile-Butadiene-Styrene Northeast Asia Tianjin Dagu Chemical Tianjin Western Europe United Kinadon Versalis Acrylonitrile-Butadiene-Styrene Northeast Asia China SP Chemicals Lianyungar Western Europe Germany Synthos Acrylonitrile-Butadiene-Styrene Northeast Asia China Sinopec Shanghai Gaogiao Gaogiao Western Europe France Michelin Acrylonitrile-Butadiene-Styrene Northeast Asia China Sinopec Maoming Petrochemical Maoming Western Furone France Arlanxeo Western Europe Acrylonitrile-Butadiene-Styrene Sinochem Lianyungang Germany Arlanxeo Northeast Asia China Jiangsu North America Denka Performance Elastomers Acrylonitrile-Butadiene-Styrene Northeast Asia China Shanghai Huayi Polymer Shangha Northeast Asia Japan Acrylonitrile-Butadiene-Styrene Northeast Asia China Shandong Haili Chemical Zibo Showa Denko Northeast Asia Japan Acrylonitrile-Butadiene-Styrene Northeast Asia China PetroChina Jilin Petrochemical Jieyang Acrylonitrile-Butadiene-Styrene Northeast Asia China North Huaiin Chemical Paniin Acrylonitrile-Butadiene-Styrene Northeast Asia North Huajin Chemical Panjin Acrylonitrile-Butadiene-Styrene Ningbo LG Yongxing Chemical Ningbo Northeast Asia >>Want to see more data? Acrylonitrile-Butadiene-Styrene Northeast Asia China Nanhai Maoming Maoming Acrylonitrile-Butadiene-Styrene Northeast Asia China Lihuayi Weiyuan Chemical Dongying Acrylonitrile-Butadiene-Styrene Northeast Asia China Liaoning KingFA Panjin Get in touch today Acrylonitrile-Butadiene-Styrene Northeast Asia China Lanzhou Petrochemica Lanzhou Acrylonitrile-Butadiene-Styrene Northeast Asia China Jinshan Acrylonitrile-Butadiene-Styrene Northeast Asia China Keyuan Petrochemicals/Guangxi Changke Fangchenggang

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- 3. Global Supply and Capacity Changes
- 4. Breakdown of Key Regions
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# **Executive summary**

### How did we get here?

- Producers and consumers across the globe would agree that 2024 was a
  peculiar year. At the end of 2023 during term negotiations, both anticipated
  ample supply. Consumers opted to reduce committed volumes in 2024.
- The reality is that demand was slightly better than planned in 2024. More importantly, crackers were running at lower rates and opting for lighter feedslates. There have also been cracker closure announcements in northwest Europe and Japan.
- Large consumers in the three major regions were forced to purchase spot volumes.
- China has still been importing, in spite of the new BD capacity additions.
- High freight rates along the Red Sea and Panama Canal plus longer transit times have resulted in an upheaval of logistics.
- This is why global BD prices were especially volatile, given that large consumers were exposed to the spot market in the face of snug supply.





# **Executive summary**

### Where are we headed?



- Butadiene has been and will remain a mere by-product of a cracker. Output is dictated by non-durable polymer demand while BD is heavily dependent on durable good orders.
- The 2023-2033 compound annual growth rate (CAGR) for global ethylene production via a steam cracker is about whereas BD production will lag at just under Longer-term olefins production growth could slow on sustainability initiatives.
- Yield factors for crude C4 output from steam crackers have been reduced while co-cracking and hydrogenation were boosted to manage balances, particularly in the last half of the forecast period.
- On paper, Asia-Pacific should become self-sufficient, and imports should disappear. While imports have slowed, the market has been inefficient with the region importing deep sea BD cargoes.
- In Europe chemical giants LyondellBasell, ExxonMobil, Sabic, Dow and BASF have either made cuts or are conducting strategic reviews of assets.
- The US Gulf coast will continue to confront the unpredictability of hurricane threats.



# Global: Economy

Central banks appear to have tamed inflation for now. The global GDP forecast continues to be revised lower for longer as China's growth lags.

#### **GDP Forecast Assumptions**

#### **Inflation**

Inflation will be more volatile than before the pandemic. Central banks are likely to keep inflation close to target in the medium and long term.

### **Monetary Policy**

Central banks will cut rates this year. They will move cautiously to bring rates down slowly.

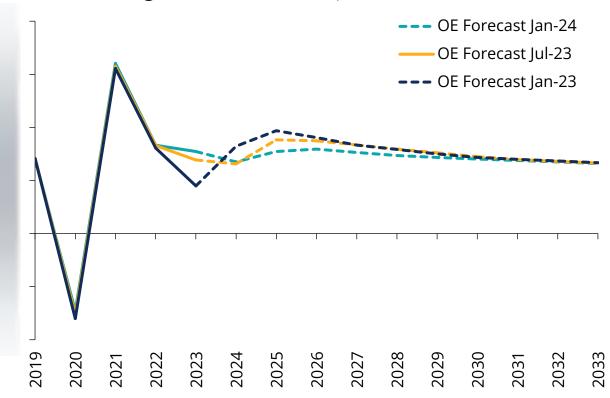
#### War in Ukraine

Russia sanctions will persist long after any cease-fire. Europe will avoid future energy problems during winter months.

#### **Globalization**

No meaningful change in the global trading system or US/China relationship is expected. Recent tariffs and other trade barriers will stay in place.

#### Global GDP growth rate forecast, Oxford Economics (OE)





Source: Oxford Economics

## China macro factors

### Beijing has unveiled recent initiatives to boost consumption.

- In May the IMF raised its projection of China's gross domestic product (GDP) growth to in 2024 and pc in 2025, because of China's strong first-quarter GDP data and recent policy measures.
- The People's Bank of China to <u>issued new mortgage easing policies on 17 May</u> to support the market. Mega cities like Shanghai, Shenzhen and Guangzhou have announced policies to ease downpayments for homebuyers since then.
- The government's provision of Yn1 trillion of reconstruction special bonds, Yn1 trillion of ultra-long bonds, and Yn1 trillion of refinancing bonds also reflect Beijing's efforts to help debt-ridden local governments.
- Real estate investment dropped by pc in April compared with a year earlier. The "real-estate climate index" which measures the general performance of property sector dropped to in April, continuing to break historic lows, NBS data show.
- Subsidies have been issued for up to for each car purchase and mn of consumption coupons to travelers.
- The IMF expects China's GDP growth to slow to pc by 2029 because of an aging population and slower productivity growth.





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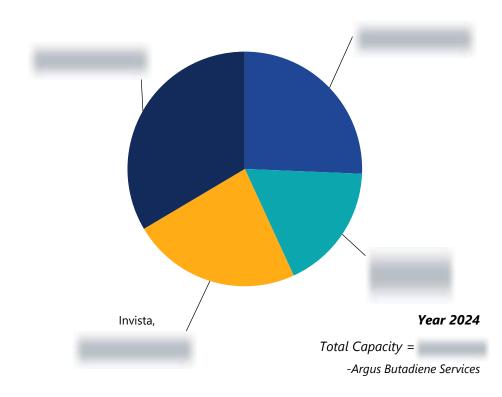


# Adiponitrile

### The Crude C4-derived ADN market rebalances itself.

- The adiponitrile segment, like the rest of the BD market, has had a dynamic 2024 to date. The jumping point was when Invista in October 2023 permanently shut its t/yr facility in . The company cited "lower-than-anticipated growth and an increase in global supply."
- In turn European ADN production in the first half of 2024 jumped to cover for planned turnarounds in both the US and China, plus global rebalancing.
- Estimated operating rates for France's Butachimie escalated to the high range in the first half of 2024, from : since the Russia-Ukraine conflict.
- Dutch TTF natural gas prices on a day ahead basis have eased, according to *Argus* data. From January to June 2024 prices averaged
   € MWh from July to December 2023 and € MWh from the same period a year earlier. This has alleviated some of the margin pressures on French ADN production.

Global adiponitrile capacity based on butadiene feedstock 000't



\*Butachimie is a joint venture between Invista and BASF



## Water restrictions in Mexico

• The Mexican state of Tamaulipas and the federal interior ministry enforced water restrictions because of an ongoing severe drought. This has slowed or even stopped operations in the port cities of Tampico, Madero, and petrochemical hub Altamira in May and June 2024.

•		
•		

<b>Company Name</b>	Affected Capacity (000't)	Derivatives
SABIC		
INSA		
INEOS Styrolution	Name of the last o	
Dynasol Elastomers		



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#### China

• The CAGR for 2023-2033 for BD capacity will expand by 'pc with derivative capacity at pc.

#### US

 Prolonged ethane cracking since and into the second quarter, coupled with supply constraints, supported higher BD prices.

#### **Western Europe**

• Two crackers will shut by the end of 2024: 1. northern France and 2.

#### **Central and eastern Europe**

• There could be a risk to a new BD unit in the region, depending on whether a cracker project proceeds as planned.

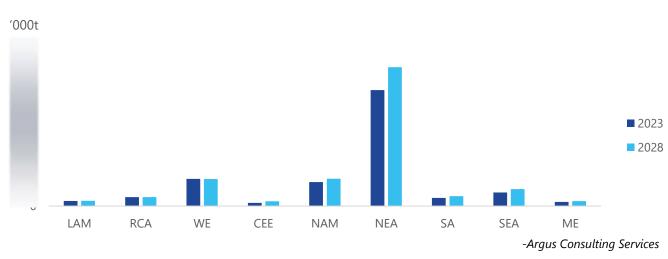
#### Russia

 We are projecting flat long-term for both BD production and consumption given geopolitical uncertainties.

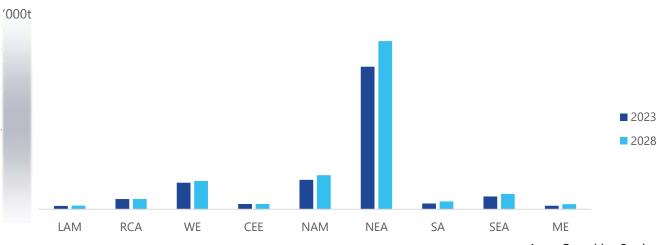
#### **Southeast Asia**

 Technical issues at units in Malaysia, the Philippines and Vietnam have resulted in less BD output but an uptick in crude C4 exports.

#### **Regional Butadiene production**



#### **Regional Butadiene demand**

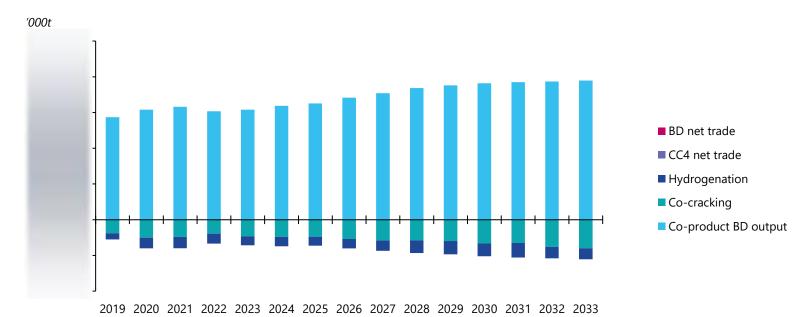


# World butadiene industry overview, 2019-2033

### A majority of the growth is slated for the first half of the forecast period.

- Production growth from 2023-2033 will reach with most of the development concentrated in 2023-2028 at oc.
- China's BD output will soar to pc from 2023 to 2028.
- Major risks to BD production include lighter feedslates, reduced cracker operating rates and lower polymer demand as sustainability efforts increase.
- Producers who have the option to co-crack and hydrogenate will use these processes to achieve a market balance.
- A less likely threat is that durable demand will outpace nondurable orders.





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# World butadiene industry overview, 2019-2033

### Asia-Pacific will remain the production and demand center.

- China remains the leader for both BD production and consumption. Its ability to lift domestic consumption, find derivative export outlets and gain market share will sway global demand.
- Europe is in a delicate place as the industry undergoes strategic business reviews of assets.
- The US is on the cusp of becoming more balanced as imports slide during the last half of the forecast period.

Top 10 Countries – Butadiene Production Capacity, 2023

Germany,

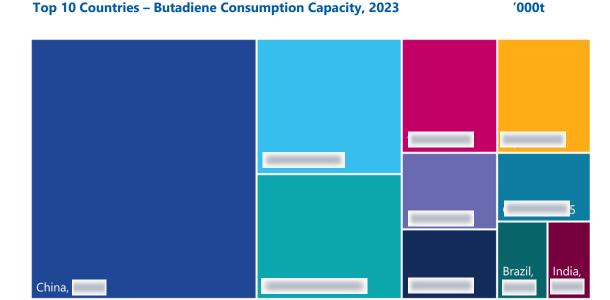
Japan,

Russia,

India,

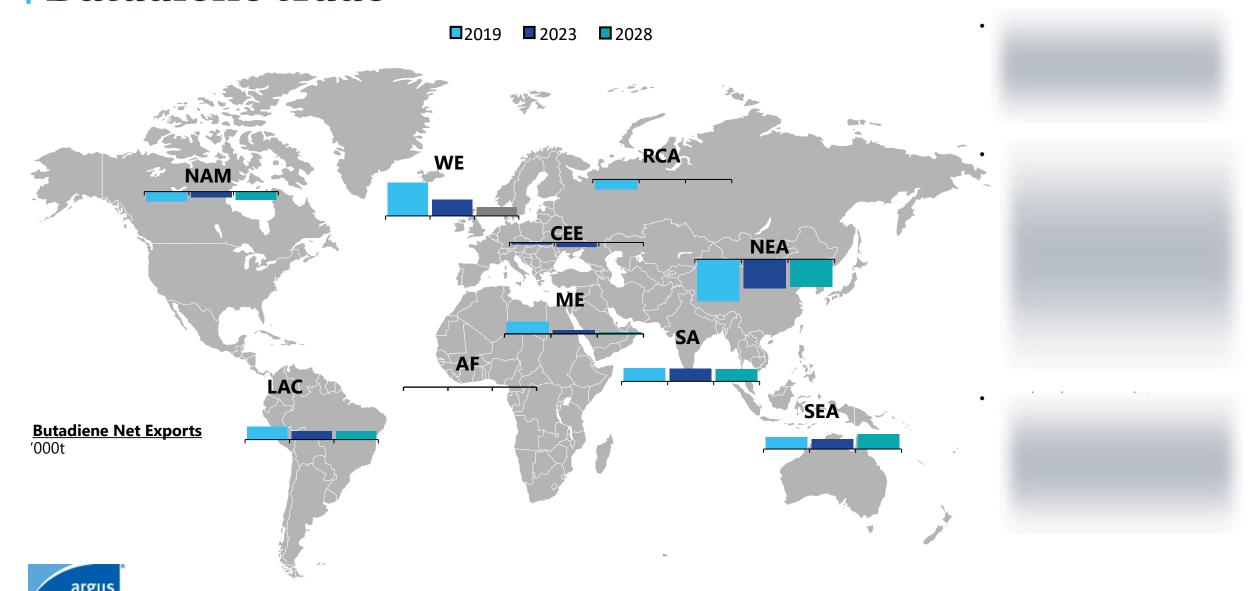
Brazil,

Netherlands,



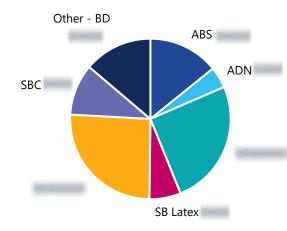


# **Butadiene trade**



# World butadiene industry overview

#### **Global butadiene demand 2023**

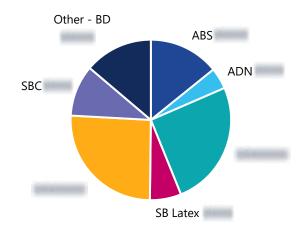


<u>Year 2023</u>

Total demand = mn t

-Argus Consulting Services

#### **Global butadiene demand 2028**



<u>Year 2028</u>

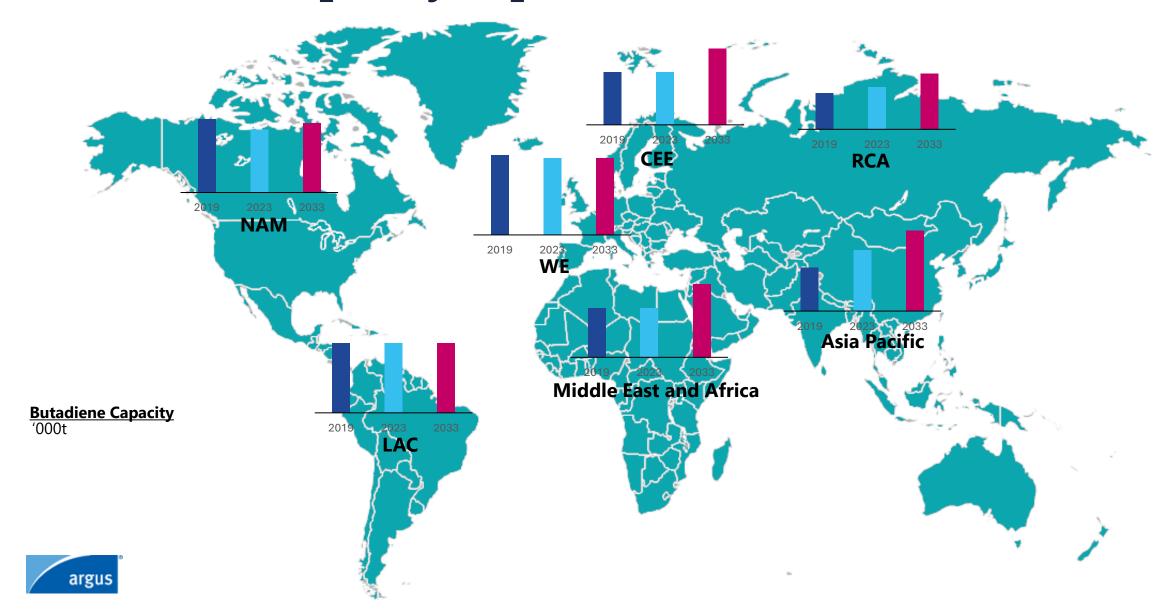
Total demand = ; mn t

-Argus Consulting Services

- World butadiene production is projected to grow pc from 2023 to 2028 but stabilize between 2028 to 2033. The slowdown is attributed to sustainability efforts and moderate economic growth throughout the end of the forecast period.
- High interest rates have kept western buyers away from purchasing durable goods and new homes.
   This is why demand is slated to grow pc from 2023 to 2028.
- Passage through the Panama Canal has improved since the start of this year, but Red Sea conditions remain highly volatile with no signs of improvement.

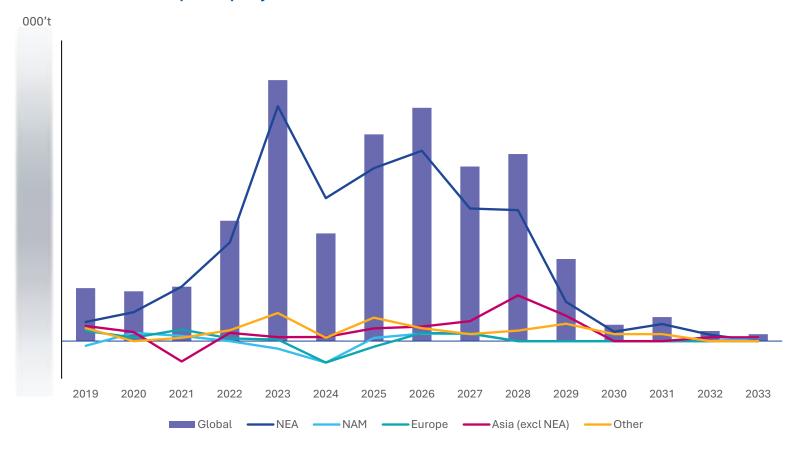


# **Butadiene capacity expansions**



# Derivative capacity additions The ABS and SBC segments will lead the way.

**Global Butadiene consumption capacity additions / shutdowns** 



- The bulk of derivative expansions are in Asia-Pacific, namely China.
- Acrylonitrile butadiene styrene, styrene block copolymer and solution styrene butadiene rubber will have the large growth. Newer, efficient units are expected to drive more mature assets to reduce rates or even permanently idle.
- During peak covid, demand nitrile rubber latex for medical gloves exploded. Since then, demand has normalized.



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# North America butadiene summary

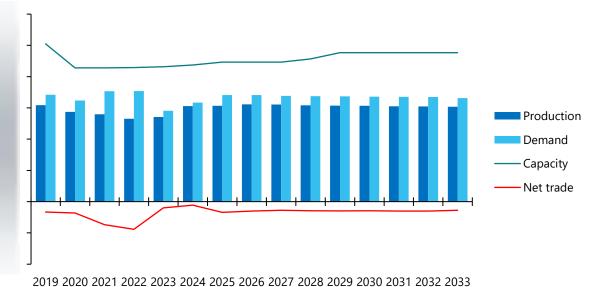
### Ethane cracking continues to dominate.



- New cracker capacity has slowed as North America's export role continues to grow.
- Cracker operating rates will run in the high 'spc in 2029 and beyond.
- By 2031, high operating rates and a sustained ethane cost advantage will likely lead to at least one additional cracker project.

#### North America butadiene supply and demand





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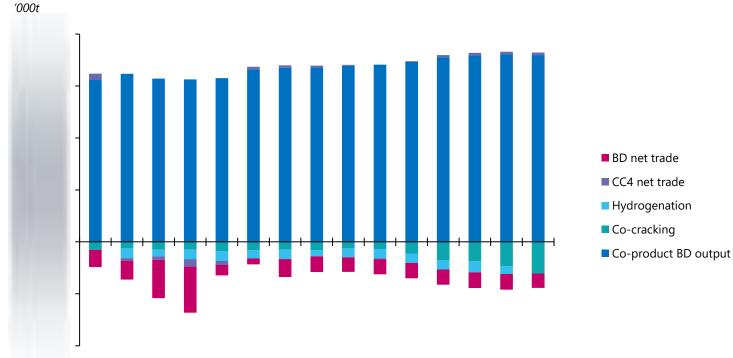


# North America supply, 2019-2033

TPC is slated to expand in 2024.



#### **North America butadiene supply**



2019 2020 2021 2022 2023 2024 2025 2026 2027 2028 2029 2030 2031 2032 2033

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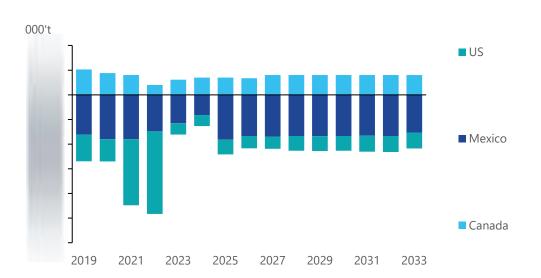


# North America demand, 2019-2033

The US will move closer to a balanced state.



#### **North America butadiene net exports**



#### North America butadiene demand





# North America demand projects, 2019-2033

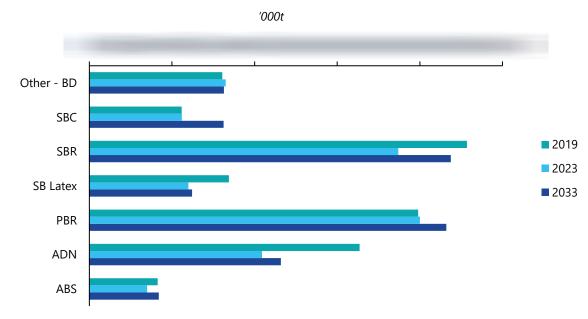
The region will see some derivative expansions in the coming years.



#### North America butadiene supply / demand



#### North America butadiene demand by derivative



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# We hope you found this sample report for Argus Butadiene Analytics valuable.

The Argus Butadiene Analytics service is for anyone engaged in the butadiene market and seeking insight into the fundamentals driving key trends, including global supply, demand growth, trade, operating rates, etc.

If you want to learn more about becoming an Argus subscriber and receiving full PDF reports complete with accompanying Excel data files twice a year, click below:

> Find out more

### Contact us



**Angie Joe**Vice President Global Butadiene and Derivatives

Angie leads the crude C4, butadiene and derivatives consulting practice at Argus. She spearheads the creation and production of the butadiene newsletter, monthly outlook and long-term supply and demand analytics publications. Angie has more than 15 years' experience in the petrochemical industry, including roles as an analyst and broker, and in business development and communications. She also has expertise in styrenics, aromatics, olefins and methanol. Angie enjoys tapping her experience along the entire petrochemical value chain to piece together market information in a global context.



**Akash Chavanke**Business Analyst - Chemicals

Akash is involved in improving the granularity of integrated aromatics and olefins derivative markets. He previously spent one and half years at Prismane Consulting in Pune, where he worked on projects related to specialty polymers, bulk polymers, petrochemicals, bio-plastics and inorganic chemicals. Akash holds a B.Tech degree in Petrochemical Engineering from Maharashtra Institute of Technology, Pune.



Brian Leonal Editor – Chemicals Asia

Brian Leonal is the Asia Pacific editor of Argus' petrochemicals desk. He has nine years of experience in the hydrocarbon industry. Before joining Argus for the second time, he was a corporate banker in DBS Bank covering oil and gas as well as petrochemical markets. He has been involved in a diversity of transactions, including asset-backed, project, trade, and M&A financing, as well as clean corporate loans. He started his career in Argus in 2015 as part of the petrochemical team, with exposures to olefins, aromatics, and polymers.



# Argus acronyms

- Aa Australasia
- AFR Africa
- ARA Amsterdam Rotterdam Antwerp
- b/d barrels per day
- bl barrel
- bn billion
- Btu British thermal unit
- CAGR Compound annual growth rate
- CEE Central and Eastern Europe
- CTO/CTP Coal to olefins/Coal to propylene
- DME Dimethyl Ether
- DMT Dimethyl terephthalate
- EIA Energy Information Administration
- EPA US Environmental Protection Agency
- ETBE Ethyl tertiary butyl ether
- HAc Acetic acid
- HCHO Formaldehyde
- INO Indonesia
- kl Kiloliter
- LAC Latin America and Caribbean

- LPG Liquid petroleum gas
- ME Middle East
- MDF Medium density fiberboard
- MDI Methylene diphenyl diisocyanate
- MEA Methylamines
- MeOH Butadiene
- MMA Methyl methacrylate
- mn million
- MTBE Methyl tert-butyl ether
- MTO/MTP Butadiene to olefins/Butadiene to propylene
- NAM North America
- NEA Northeast Asia
- NZE New Zealand
- OSB Oriented strand board
- PET Polyethylene terephthalate
- POM Polyoxymethylene
- PBT Polyethylene butyl terephthalate
- pc percent
- RCA Russia and Central Asia
- RFS Renewable Fuels Standard

- ROW Rest of world
- SEA Southeast Asia
- SA South Asia
- t metric ton
- t/yr metric tons per year
- TAME Tertiary amyl methyl ether
- VAM Vinyl acetate monomer
- WE Western Europe
- yr year
- eSBR Emulsion Styrene Butadiene Rubber
- sSBR Solution Styrene Butadiene Rubber

# **Argus Butadiene and Derivative services**

Argus experts combine decades of experience and insight in analyzing the global markets for butadiene, from the upstream wellhead, via refineries and steam crackers, to downstream products such as synthetic rubber.

#### An Argus market service

#### **Weekly Butadiene Report**

- Ongoing commercial analysis of events and trends
- Current contract and spot pricing for key markets

#### **Monthly Market Outlook**

• 24-month rolling price forecast for all major regions

#### **Butadiene Analytics**

- 5-year history, 10-year forward global butadiene supply/demand
- Trade capacity data forecast
- Quarterly updates addressing key industry trends
- Argus analyst access provides customers with tailored support

#### **Audience**

• Anyone associated with the global butadiene industry, including producers, consumers, end users, traders, shippers and investors

Click here to learn more about Argus Butadiene Services



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