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# Argus Butadiene

Formerly Argus DeWitt Butadiene

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## HIGHLIGHTS

- In January, Asia-Pacific has BD resumed exports to the US Gulf Coast.
- The Northeast Asia fob BD price is trading at a premium to the cfr basis market, for the first time in more than four months.
- Exports to the US are limited through the end of February because of planned maintenance at a Houston-area terminal that is a major BD import artery.
- Unplanned production issues in the US Gulf and northwest Europe are tightening the market.

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## MARKET SNAPSHOT

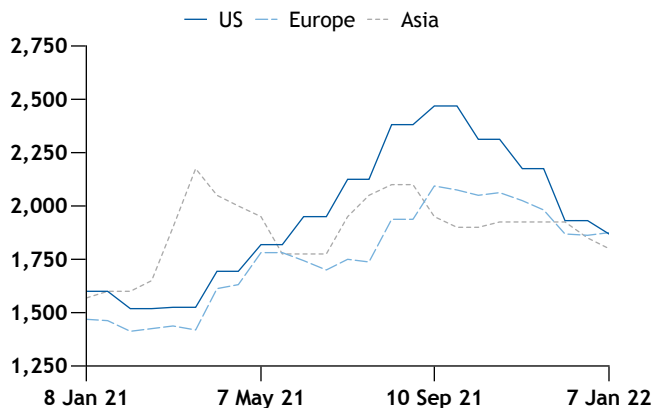
Key prices			
	Timing	Price	±
<b>Americas</b>			
Butadiene contract fob $\text{¢/lb}$		62.00-62.00	-3.00
Butadiene prevailing contract fob $\text{¢/lb}$	Jan	62.00	-3.00
<b>Europe</b>			
Butadiene contract delivered $\text{€/t}$	Jan	1,000.00	-50.00
<b>Asia-Pacific</b>			
Butadiene spot cfr NE Asia $\text{\$/t}$		650.00-680.00	+45.00

Global SBR				$\text{\$/t}$
	Timing	Price	±	
US eSBR 1502	Jan	1,788-1,951	-61	
Europe eSBR 1502	Jan	1,843-1,905	+11	
Asia eSBR 1502		1,750-1,850	-50	

Associated markets				$\text{\$/t}$
	Timing	Price	±	
TSR20 SGX fob	Feb	1,737.00-1,768.00	+45.00	
Naphtha 65 para NWE cif		744.25	-6.25	
Naphtha Japan c+f		744.00	+1.75	

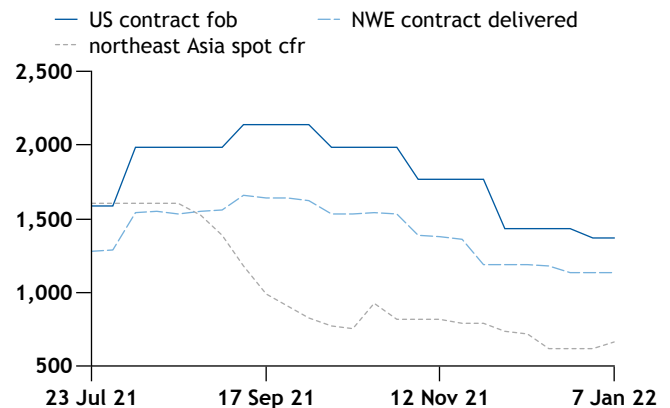
Global SBR

$\text{\$/t}$



Butadiene: Americas, Europe and Asia

$\text{\$/t}$



**ENERGY AND FEEDSTOCKS**

February Nymex light sweet crude futures increased by \$1.61/bl to settle at \$79.46/bl Thursday. The March Brent contract rose by \$1.19/bl to \$81.99/bl. The March Brent-March WTI spread was at \$3.11/bl.

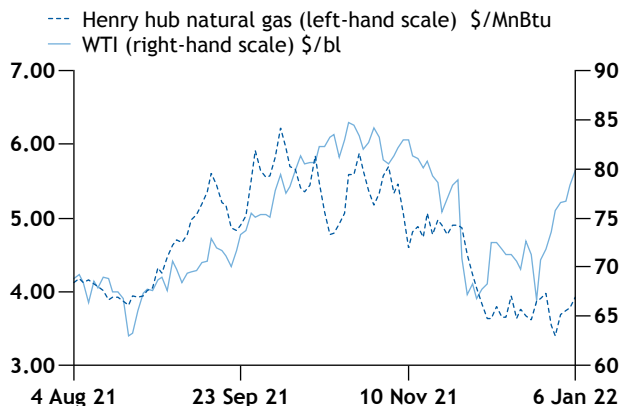
The Opec+ alliance decided on 4 January to stick to its current production policy of 400,000 b/d monthly increases and pressed ahead with the hike in its crude output quota for February. The decision to stay the course comes after the group played down concerns about the effects on oil demand from the Omicron variant of Covid-19. With some Opec+ members already struggling to boost production, the effective increase may be less than 400,000 b/d, according to some analysts.

Nymex gas for February delivery at the Henry Hub fell Thursday by 7¢/mmBtu, or 1.8pc, to settle at \$3.812/mmBtu. The 12-month strip decreased by 1pc to \$3.80/mmBtu, while the 2023-calendar strip was down by 0.34pc to \$3.44/mmBtu.

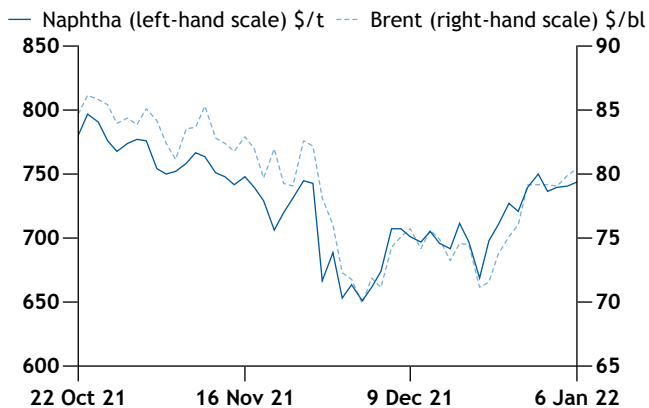
The US Energy Information Administration (EIA) on Thurs-

Market prices			
	Timing	Price	±
<b>Americas, 6 Jan</b>			
Natural gas Houston Ship Channel All Index \$/mmBtu		4.66	-0.88
Ethane Mont Belvieu spot fob ¢/USG		36.00	+1.62
Propane Mont Belvieu spot fob ¢/USG		110.13	-0.25
Butane Mont Belvieu spot fob ¢/USG		150.2	+15.69
Naphtha 40 N+A USGC delivered ¢/USG		199.31	+5.35
Gasoline 87 conv USGC ¢/USG		230.81	+4.85
Gasoline 93 conv USGC ¢/USG		240.81	+6.35
Nymex WTI \$/bl		79.46	+2.90
WTI \$/bl		79.46	+2.90
<b>Europe, 6 Jan</b>			
Propane cif ARA large cargo \$/t		693.75	+1.75
Butane ARA/UK large cargo \$/t		757.50	+18.25
Naphtha 65 para NWE cif \$/t		744.25	-6.25
Ice Brent \$/bl		81.22	+2.14
<b>Asia-Pacific, 6 Jan</b>			
Naphtha Japan c+f \$/t		744.00	+1.75
Butane Argus Far East Index™ \$/t		758.00	+20.25
Propane Argus Far East Index™ \$/t		768.00	+0.25

**Henry Hub natural gas vs WTI**

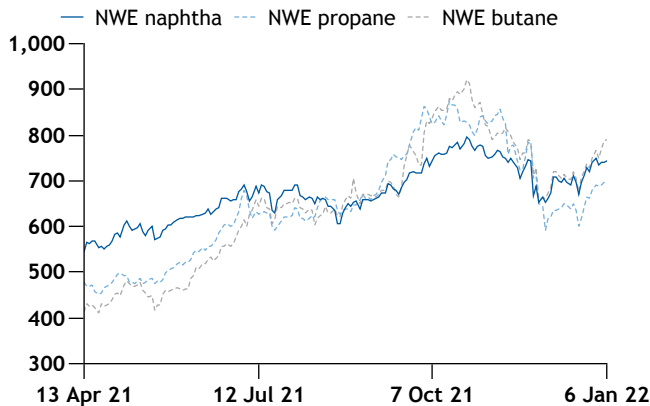


**Naphtha vs Ice Brent**



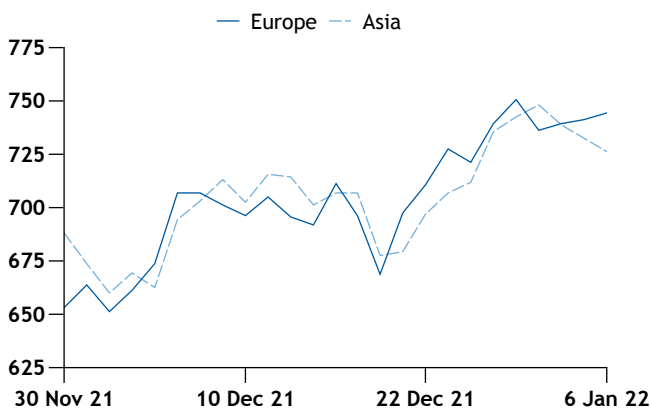
**European cracker feedstock prices**

\$/t



**Europe and Asia naphtha**

\$/t



## ENERGY AND FEEDSTOCKS

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day reported that gas stockpiles in the week ended 31 December declined by 31 Bcf (878mn m<sup>3</sup>). The draw was smaller than the five-year-average decline for the week of 108 Bcf and the year-earlier draw of 127 Bcf. US gas-weighted heating demand last week was 27pc lower than the seasonal norm, the National Weather Service said. Analysts surveyed by Argus had expected a decline of 60 Bcf. Last week's stockpiles totaled 3.195 Tcf, down by 4.6pc from 2020 levels but 3.1pc above the five-year-average.

The smaller withdrawal was a result of milder weather

across the US, amplified by depressed consumption during the Christmas to New Year's holiday week, but the next four withdrawals are all expected to exceed their individual five-year-average draws amid expectations for colder January weather, Gelber & Associates said Thursday.

The EIA last month had projected that US gas inventories would end the winter at about 1.7 Tcf, or 2pc lower than the five-year-average. Higher-than-average inventories can place downward pressure on prices by easing concerns about spikes in demand or supply shortfalls.

## AUTO UPDATE

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### Americas

Automaker Stellantis will temporarily shut its Brampton, Ontario, full-size truck plant from 3-26 January. The company will idle its compact-SUV plant in Toluca, Mexico, and its Windsor, Ontario, minivan plant from 3-21 January. Stellantis also will shut its Belvidere, Illinois, SUV plant from 3-14 January. In addition, the van plant in Saltillo, Mexico, will be closed for retooling from 3 January-10 February.

Mexico's annual vehicle sales rose 6.8pc in 2021, data from its national statistics agency (INEGI) shows, on a low 2020 base. Sales that year plummeted 27.9pc year-over-year to a nine-year low as the pandemic shut factories and dealerships, crippling the consumer chain. The Mexican Automotive Industry Association recently forecasted a return to pre-pandemic sales level in late 2023 to 2024.

### Europe

German electric vehicle (EV) registrations in 2021 increased by 83.3pc on the year, with December reaching a long-term high, while hybrid plug-in registrations increased by 62.3pc from 2020.

EV registrations made up 13.6pc of the market share last year. A total of 355,961 EVs were registered in 2021, with December seeing a long-term high of 48,436 registrations – 21.3pc of the total. This was an increase of one percentage point from November, when EV registrations accounted for 20.3pc of the total. Total vehicle registrations fell by 8.7pc from 2020, with 2.62mn new cars registered in 2021. December 2021 saw 227,630 cars registered, which was 26.9pc less than in December 2020.

The total number of electric vehicles (EVs) operating in Hungary continued to rise sharply last year, although annual growth was somewhat slower compared to a year earlier. There were 42,633 EVs operating in Hungary at the end of 2021, up by 57pc from 27,123 a year earlier, according to the latest data from the country's interior ministry. This compares with a 62pc increase in 2020. The number of fully electric cars climbed by more than 71pc on the year to 21,544 at the end of December, outpacing the 69pc annual increase registered a year earlier.

But growth for hybrid vehicles was slower, with the number of extended-range hybrid cars and plug-in hybrid cars rising by half from a year earlier to 13,085 and by 37pc to 8,002 at the end of 2021, respectively. Demand has been fueled by the government's grant programs for EV purchases. Budapest's latest support tender was filled within only a few hours in June, attracting almost 1,500 grant applications before closing after less than two days.

### Asia-Pacific

The Chinese government will reduce its subsidies for new energy vehicles (NEVs) by 30pc in 2022 and stop offering subsidies for NEVs from 2023. In 2022, subsidies for pure electric vehicles (PEVs) with a driving range of 300-400km will be cut to 9,100 yuan/unit, and for PEVs with a driving range of greater than 400km they will fall to Yn12,600/unit. Subsidies for plug-in hybrids will be reduced to Yn4,800/unit next year, while those for all types of NEVs will be cancelled after 31 December.

China's NEV output and sales in January-November this year reached 3.023mn and 2.99mn units, up by 167.4pc and

## AUTO UPDATE

166.8pc from a year earlier, respectively, with the share of NEVs reaching 12.7pc of the country's total vehicle sales during this period, according to data from the China Association of Automobile Manufacturers.

New Covid-19 restrictions in Xi'an, China, have prompted South Korea's Samsung and US-based Micron Technologies to reduce their output temporarily. This comes after recent record rainfall in Malaysia, which resulted in Dutch chipmaker BE

Semiconductor Industries (BESI) halting operations at its main production facility in Shah Alam, where the assembly floor was flooded. BESI expects that production delays could reduce its fourth-quarter revenue by 15-20pc from the third quarter, compared with previous guidance of a 5-15pc decline. The flooding will have a minimal impact on its planned ramp-up of new equipment at the site planned for the first quarter of 2022, the company said.

## ECONOMIC UPDATE

### Americas

The Mexican Institute of Finance Executives (IMEF) manufacturing index rose by 1.8 points to 52.6 points last month. The index remained in expansion territory for the third straight month. Readings over the threshold of 50 signal growth while those below that level signal contraction. IMEF reported an increase in three of the five components of the index – inventory, product delivery and employment – while the new orders and production sub-indexes fell. Private sector economists expect the economy to expand by only 2.8pc in 2022, below their forecasts for 5.6pc growth in 2021, according to a central bank survey.

Brazil's president Jair Bolsonaro vetoed a bill that would have gradually eliminated a tax incentive for the country's chemical industry, instead ordering an immediate end to the tax break. The industry said the move threatens revenue and jobs. Congress on 24 June adopted a measure to raise the PIS/Cofins federal tax on chemicals gradually between 2021 and 2024, when it would reach normal levels. Bolsonaro's veto and a provisional measure he issued on 31 December immediately ends the industry's tax incentives, known as Reiq. The lower house of Congress has until June to analyze the provisional measure and potentially move to reverse it.

### Europe

The IHS Markit Manufacturing Purchasing Managers' Index (PMI) reading was 58.0 in December, compared with 58.4 in November and its lowest in 10 months. All eight countries in the survey recorded a reading above 50 that indicates expansion.

The rise in pre-production stocks was the largest in more than 24 years, but output growth was unchanged from the prior month. Input costs increased at the slowest pace since April, albeit this was still high historically, and output charge

inflation eased from November's all-time peak to a four-month low.

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### Asia-Pacific

China's official manufacturing PMI rose by 0.2 points to 50.3 in December, the national bureau of statistics said, the second consecutive month above 50 after two months of contraction. Raw material prices rebounded in December on winter restocking and mill restarts, pushing up mills' production costs. The raw material purchase price index rose by 9.4 points to 48.5 in December from November, CSLPC said.

India's unemployment stood at close to a record high of around 8pc in November. The middle classes and the poor have been hardest hit by the Covid-19 pandemic, particularly in the rural areas. The Omicron variant has emerged as a growing concern for India, with cases rising rapidly in the first few days of 2022 to nearly 60,000 by 5 January. A broad economic recovery is still some distance away, with Omicron heightening the uncertainty, Mumbai-based India Ratings and Research says.

## Announcement

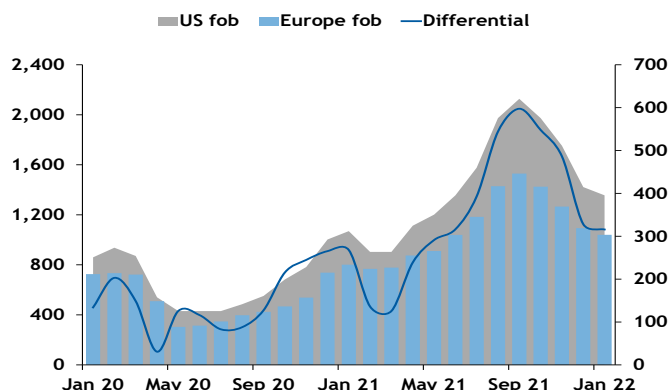
All data change announcements can be viewed online at [www.argusmedia.com/announcements](http://www.argusmedia.com/announcements).

Alternatively, to be added to the email distribution list for all announcements, please email: [datahelp@argusmedia.com](mailto:datahelp@argusmedia.com).

## AMERICAS

US vs Europe butadiene contract, fob basis

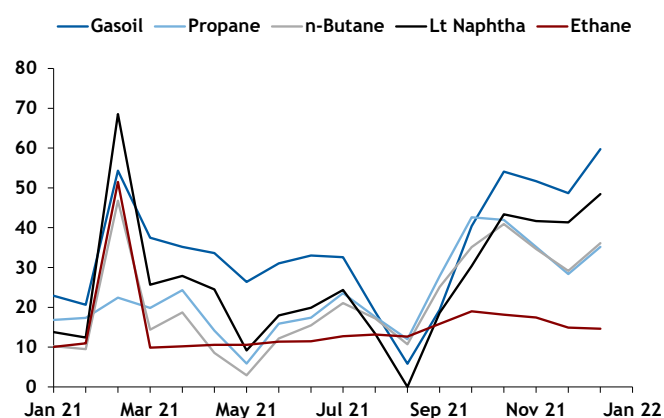
\$/t



Americas prices			¢/lb
	Timing	Price	±
Butadiene US contract fob		62.00-62.00	-3.00
Butadiene US prevailing contract fob	Jan	62.00	-3.00
Butadiene US spot fob		60.00-64.00	-0.50
Butene-1 US domestic fob	Dec	68.00-73.00	-3.00
Isobutylene 99% pure US fob	Dec	59.00-64.00	-3.00
Raffinate-1 (45% iC4=) US formula		13.50-14.20	-26.45
Crude C4 spot USGC cif		795.00-995.00	+30.00

US ethylene vs cash costs

¢/lb



### Markets

To start the new year, the major focus in butadiene (BD) has been supply rather than demand. The direction for demand is still unclear as the market slowly moves out of December destocking mode. Two BD production issues on the US Gulf coast prompted at least one supplier to ask for relief on contractual volumes. At this point, neither producer has announced any new allocations, so it is too early to determine the scale of the problems.

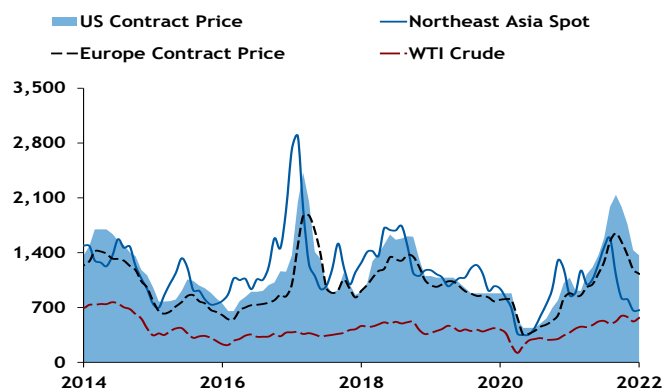
Domestic spot discussions were around the January contract price (CP). January’s BD CP settled at 62¢/lb (\$1,367/t), down 3¢/lb, as consumer demand was low in December ahead of inventory destocking. The US market could see demand tick up after a seasonably slow December. The timing will be key as we anticipate a number of planned turnarounds in the second quarter.

In anticipation of the scheduled maintenances and a demand rebound, we believe that four new spot BD cargoes ex-Korea have transacted so far in the last week or so. The volume is likely around 20,000t for arrival in February through March.

Currently US buyers prefer either European origin imports or material from Yeosu, South Korea, as the dimer content is acceptable on the BD pipeline system. Following the start up of a new BD producer in Daesan, South Korea, there are concerns about the comingling of product in tanks. That has turned more focus to Yeosu as a supply source. The problem with Yeosu is there are berthing restrictions that only limited ship owners can meet. This, in turn, is commanding a freight premium from Yeosu compared to other locations in northeast

Global butadiene price history, 2014-present

\$/t



Asia. We anticipate that US importers will continue to pay a higher price for European imports not only because of specs but also a shorter transit time relative to Asia-Pacific. Current-

## AMERICAS

ly, though, there are two ongoing European technical problems that have limited the region's ability to export in January. The market is hopeful that the issues are resolved given that up to four European BD turnarounds are scheduled for March.

On paper the arbitrage from Asia-Pacific to the US has been open for many weeks. But ongoing maintenance at a major import terminal in Houston, Texas, has heavily restricted the US' ability to import. Work commenced in the

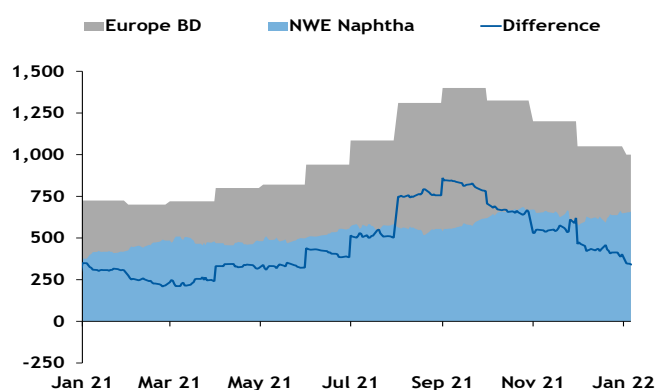
second half of December and is scheduled through the end of February. Import volumes are expected to increase following the tank repairs.

Supply will remain the major, recurring theme in the first half of 2022 given as many as seven BD producers with scheduled maintenance in the Americas. We discuss the impact on price and trade flow in our monthly *Argus Butadiene Outlook* report.

## EUROPE

Europe butadiene MCP vs NWE naphtha

€/t



### Markets

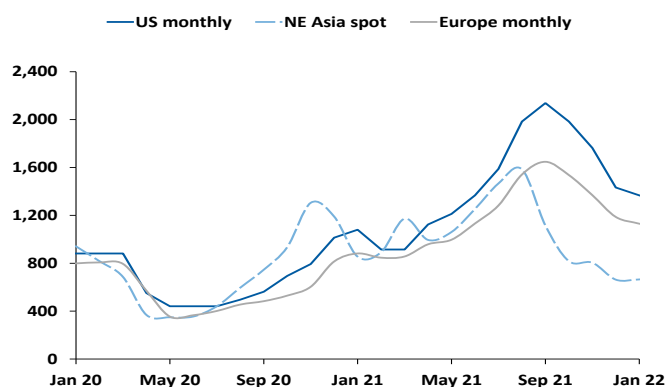
There have been two ongoing butadiene (BD) technical issues in The Netherlands. Coincidentally both suppliers have been forced to sell spot crude C4 as they declared *force majeure* and restricted BD supply to their contractual customers. One of the producers managed to sell the spot crude C4 domestically while the second may have to export because of its high acetylene content. Typically this type of spec is only sold to the Chinese market at a heavily discounted price since domestic producers are reluctant to accept it. At this point, there are no recent signs of a crude C4 export listed on shipping reports.

The outages have tightened the spot BD market up, just as import demand from North America has increased. Two US Gulf coast unplanned production issues in addition to anticipation about the heavy Americas BD turnarounds schedule in the first half of 2022 are driving import demand.

Europe prices			
	Timing	Price	±
Butadiene NWE contract delivered €/t	Jan	1,000.00-1,000.00	-50.00
Butadiene NWE formula netback fob US \$/t		1,076.00-1,164.00	-11.00
Isobutylene NWE delivered €/t	Dec	1,055.00-1,075.00	-45.00
Raffinate-1 NWE incremental cfr \$/t		870.00-946.00	+40.50
Naphtha factor \$/t		1.17-1.27	0
Crude C4 NWE spot dlvd USGC \$/t		595.00-745.00	+30.00
Naphtha factor \$/t		0.80-1.00	0.00

Global butadiene prices

\$/t



The European January BD MCP (monthly contract price) settled at €1,000/t (\$1,129/t), representing a €50/t drop. In comparison, the US saw a 3¢/lb decrease (\$66/t), settling at 62¢/lb. The delta between the US and European January contracts was almost \$320/t after accounting for discounts and netbacks. In 2021, the contract spread between the regions

## EUROPE

averaged more than \$355/t, according to Argus data, peaking at about \$600/t in September.

January's MCP decrease was supported by the seasonal slowdown in demand. In other base chemicals, the ethylene and propylene MCPs at €1,272.50/t and €1,288/t, respectively, have been flat since November 2021. The BD MCP during the same period shed almost 17pc, or €200/t. Moving in the opposite direction, the benzene MCP has jumped nearly 29pc since November.

In recent months, the raffinate-1 market has tightened, initially on supply. In the summer months and early into the fourth quarter, European cracker operators were running a heavier feedslate. Beginning in November and December, cracker economics have changed. Also BD demand fell in the fourth quarter while regional driving demand ticked up. With less BD demand, producers were co-cracking or hydrogenating, just as the MTBE market began to wake up on regional travel.

UK-based petrochemical firm Ineos has been granted an environmental permit by Antwerp to construct its planned ethane-fed 1mn t/yr ethylene cracker in the Belgian city. The firm aims to start up the unit in 2026.

In energy, cracker operators and derivative producers have been squeezed by surging natural gas prices this winter. The front-month index at the Dutch TTF, Europe's benchmark gas hub, on 5 January settled at a fresh record high at just over €113/MWh for January, following the most volatile trading month in its history.

Cold weather in early December bolstered space heating demand across the region, while weak wind generation lifted the call on thermal power plants. The unplanned closures of two French nuclear reactors on 16 December further drove up gas-fired generation. Russian flows to Europe were particularly weak. In addition, the approaching end of the calendar year may have required firms to post margin, obliging them to liquidate their positions and escalating the price spike.

But European prices subsequently collapsed in late December – largely reacting to the influx of LNG arrivals triggered by the earlier price spike – and ended the month much lower than they had started it. After hitting its 21 December peak, the TTF front-month market fell consistently over the remainder of the month, including its steepest ever day-on-day drop – by €40/MWh – on 23 December.

## ASIA-PACIFIC

### Markets

Fob northeast Asia butadiene (BD) cargoes were traded at premiums against cfr values for the first time in more than four months on the back of cross-Pacific US demand.

More than 21,000t of BD for loading in the second half of January and February from Yeosu were fixed over the past two weeks destined for the US market. A 5,500t second-half January shipment was fixed in the high-\$600s/t fob Korea while another 5,000t for second-half February loading from Yeosu was transacted in the low-\$700s/t fob Korea. Another 11,000t of BD for loading in February from Yeosu were also fixed at an undisclosed discount to the US contract price of the arrival month. The January US contract price was settled at \$1,367/t, more than double of prevailing cfr northeast Asia valuations. With cross-Pacific freight rates for a 6,000t parcel hovering just above \$300/t, this would give traders an arbitrage window of around \$400/t.

Asia-Pacific prices			\$/t
	Timing	Price	±
<b>Butadiene</b>			
fob NE Asia spot	prompt	670.00-705.00	+137.50
fob NE Asia month average	Jan	740.00	-20.50
cfr NE Asia spot	prompt	650.00-680.00	+45.00
cfr NE Asia spot month average	Jan	805.00	-13.00
cfr southeast Asia spot	prompt	575.00-635.00	+46.00
cfr southeast Asia spot month average	Jan	745.00	-14.00
fob southeast Asia spot	prompt	525.00-565.00	+45.00
fob southeast Asia month average	Jan	685.00	-12.00
Taiwan contract month	Nov	881.00-883.00	0.00
Sinopec price Yn/t	prompt	4,200.00	0.00
Sinopec price import parity	prompt	571.00	-1.00
<b>Raffinate-1</b>			
Naphtha cfr Japan premium		0.00-50.00	0
fob Asia		737.00-788.00	+6
cfr China		887.00-938.00	+26

## ASIA-PACIFIC

In the cfr northeast Asia market, LG Chem snapped up 4,000t worth of China-origin BD during the week for second-half January arrival at around \$650/t cfr Korea. This rare purchase is linked to a recent decision to further lower operating rates of its all its crackers in Yeosu and Daesan because of squeezed production margins and consequently, lower BD extraction. LG Chem is now running its sole Daesan cracker and its two other facilities in Yeosu at 80pc for January, down another 10pc from 90pc in December, before raising production rates to 87-88pc again in February. LG Chem has a total BD capacity of just under 500,000 t/yr at its three production sites in South Korea.

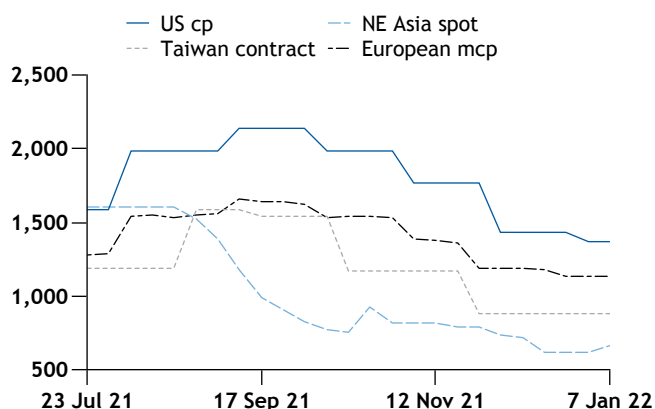
Following the start-up of its new Yeosu cracker that includes a new 140,000 t/yr BD extraction unit, LG Chem is self-sufficient in its requirements for its various downstream units.

Sentiment in the China market remains largely depressed during the week because of excess domestic supply following the start-up of new BD extraction facilities, but there were budding expectations for the oversupply to ease following the slew of fixtures from Korea into the US. Ex-tank east China spot BD were talked as low as 3,850 yuan/t or import equivalence of \$524/t mid-week before buyers were willing to negotiate at Yn4,200/t towards the end of the week after hearing that there has been exports towards Korea. The Sinopec east China list price was maintained steady at Yn4,200/t ex-works or import equivalence of \$572/t.

There are also expectations for the price uptrend to be

Butadiene prices: US, WE and Asia-Pacific

\$/t



tempered by the imminent start-up of Sinopec Zhenhai Refining & Petrochemical’s new phase two cracker complex which includes a new 160,000 t/yr BD extraction unit. There were no fresh discussions in the spot import market as domestic supplies remained sufficient.

In Taiwan, buyers were comparatively conservative and had pegged buying ideas around \$550-600/t cfr as most had ample inventory. There were likely term 2022 contract supplies that may have been settled at discounts of more than \$20/t against cfr northeast Asia assessments although further details could not be immediately confirmed.

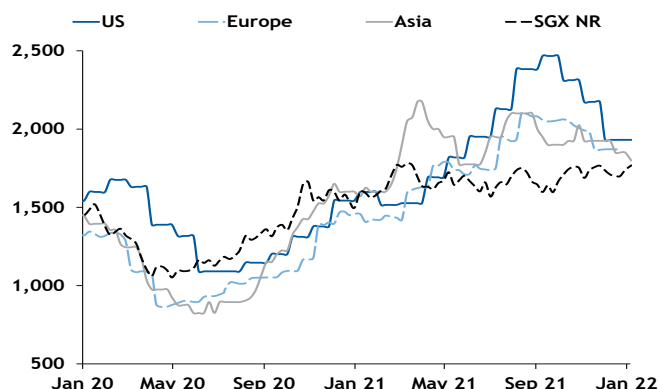
## C4 DERIVATIVES

### Americas

There is a “reasonable” indication that US imports of emulsion styrene butadiene rubber (eSBR) from the Czech Republic, Italy and Russia have caused material injury, the US International Trade Commission (USITC) has determined. The US department of Commerce will next make preliminary antidumping duty determinations due on or about 25 April. Approximately 70pc or more of eSBR is a raw material for tire tread compound formulations for new passenger vehicle and light truck replacement tires and heavier truck tire retreads. It is also used in the production of conveyor belting, hoses, other mechanical goods and footwear.

Global SBR 1502 and TSR20 NR prices

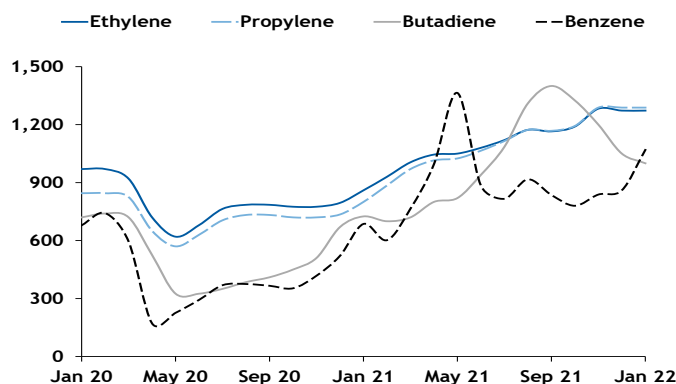
\$/t





## C4 DERIVATIVES

### European base petrochemicals, free delv'd basis €/t



In feedstocks, the US benzene contract price settled at 322¢/USG (\$994/t) for January, up 4¢/USG (\$12/t) from the prior month. Spot benzene prices moved well above the contract price on unplanned production issues in the US and Europe.

### Europe

Regional logistics have improved as the force majeure on metal box containers used to ship synthetic and natural rubber was lifted in December. Box supply has improved, much to the relief of the market. Previously, instead of returning the empty boxes, some consumers were using the boxes to store natural rubber even as costs mounted.

Russian oil firm Gazpromneft's Serbian subsidiary NIS has increased its stake in HIP Petrohemija to 90pc from 20.9pc, at a cost of €150mn (\$170mn), through the company's privatization process. NIS signed an agreement with the Serbian economy ministry on 24 December to become HIP Petrohemija's strategic partner. NIS plans to upgrade HIP Petrohemija's main production facilities and implement energy efficiency projects, Gazpromneft and the economy ministry said, without giving details.

NIS was the single bidder in HIP Petrohemija's privatization tender, which closed in October. The Serbian government is expected to sell down its 75.3pc controlling holding in the company, although no details were released on whether Belgrade will retain a stake after the privatization is completed. Russian independent oil firm Lukoil holds a 3.1pc stake in HIP Petrohemija.

NIS supplies naphtha and fuel oil to HIP Petrohemija from

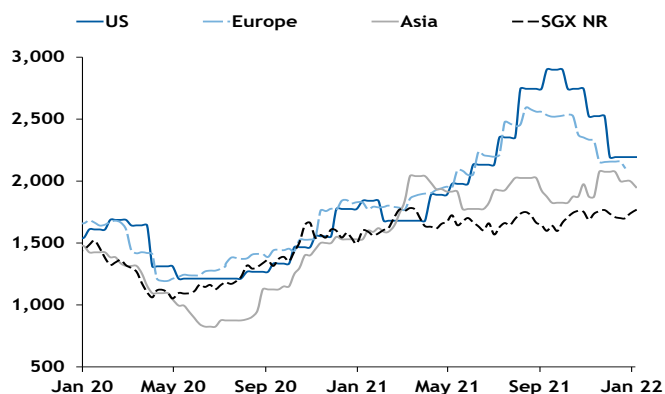
### Synthetic rubber general

	€/lb		€/t		\$/t	
	Low	High	Low	High	Low	High
<b>Americas</b>						
eSBR 1502 US	81.10	88.50	1,577	1,720	1,788	1,951
eSBR 1712 US	81.20	87.60	1,579	1,703	1,790	1,931
Polybutadiene US	94.00	99.00	1,827	1,925	2,072	2,183
<b>Europe</b>						
eSBR 1502 NWE	83.59	86.42	1,625	1,680	1,843	1,905
eSBR 1712 NWE	79.47	82.30	1,545	1,600	1,752	1,814
Polybutadiene NWE	94.65	97.22	1,840	1,890	2,087	2,143
<b>Asia-Pacific</b>						
eSBR 1502 Asia	79.38	83.92	1,548	1,637	1,750	1,850
eSBR 1712 Asia	74.84	79.38	1,460	1,548	1,650	1,750
Polybutadiene Asia	83.92	92.99	1,637	1,814	1,850	2,050

### Natural rubber

	Low	High	Settle	±
TSR20 fob SGX futures \$/t	1,737.00	1,768.00	1,767.00	+59.50

### Global polybutadiene vs TSR20 NR prices \$/t



its 110,000 b/d Pancevo refinery, which in turn receives pyrolysis gasoline and methyl tertiary butyl ether (MTBE) from the petrochemical complex. HIP Petrohemija also produces ethylene, low-density and high-density polyethylene (LDPE and HDPE), propylene, styrene butadiene rubber (SBR), C4 fraction and pyrolysis oil.

The European January contract price for benzene jumped up €209/t (\$239/t) from the previous month to €1,069/t (\$1,209/t), the highest since June. Europe remains the highest-priced region globally for benzene, keeping the arbitrage open

## C4 DERIVATIVES

from the US and Asia-Pacific. But the heavy backwardation in the European market and tight domestic supply kept Europe-bound cargoes from these regions limited.

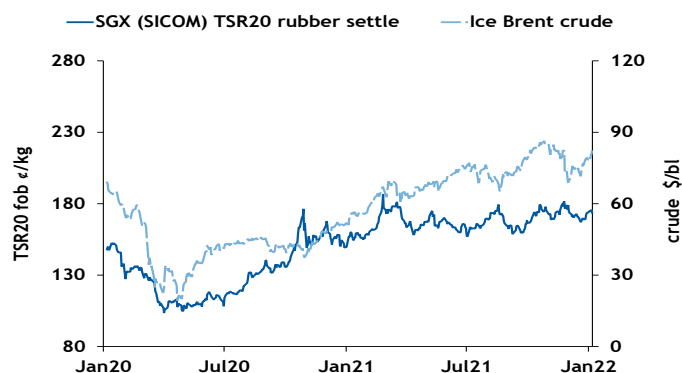
### Asia-Pacific

Asia-Pacific synthetic rubber prices eased during the week to 7 January. Chinese demand has started to ebb because of recent coronavirus related restrictions and in the run-up to the lunar new year holidays. Domestic traders are expecting demand to gradually slow for the rest of the month and last through mid-February coinciding with the Beijing winter Olympics period.

Offers for South Korea origin styrene butadiene rubber (SBR) were dropped \$50/t from the last few weeks to \$1,800/t cfr China meeting buying indications hovering around \$1,700-1,750/t cfr. Domestic Chinese SBR held largely steady hovering around 12,100yuan/t delivered.

Supplies for polybutadiene rubber (PBR) eased after a facility in Shandong resumed production in end-December following an outage in November that sparked a purchase scramble among tire makers. Domestic PBR prices were talked at Yn13,300/t delivered, a Yn1,600/t drop from around two weeks ago. Offer for South Korea PBR imports were also dropped \$50/t to \$2,150/t cfr China meeting buying ideas hovering at \$1,950/t cfr but negotiations were thin during the week.

### SGX natural rubber vs Ice Brent crude, first month



### Natural rubber

TSR20 natural rubber (NR) futures on the SGX settled at \$1,767/t, up 3.7pc from the 17 December report. Prices averaged \$1,752/t month-to-date in January, just over 2pc above the December monthly average. Oil prices extended their rally on supply concerns resulting from Kazakhstan unrest and outages in Libya.

India’s Rubber Board has signed a memorandum of understanding (MOU) with Singapore-based Societe Des Matieres Premieres Tropicales Pte. Ltd. (SMPT), a 100pc owned subsidiary of French tire manufacturer Michelin. Together the companies will conduct research on rubber technologies and agriculture strategies. The Indian Union Commerce and Industry Ministry earlier in 2021 approved the Board’s proposal to enter into an MOU with SMPT, who has expressed interested in collaborating on various areas of research, including disease management and rubber-focused agroforestry systems.

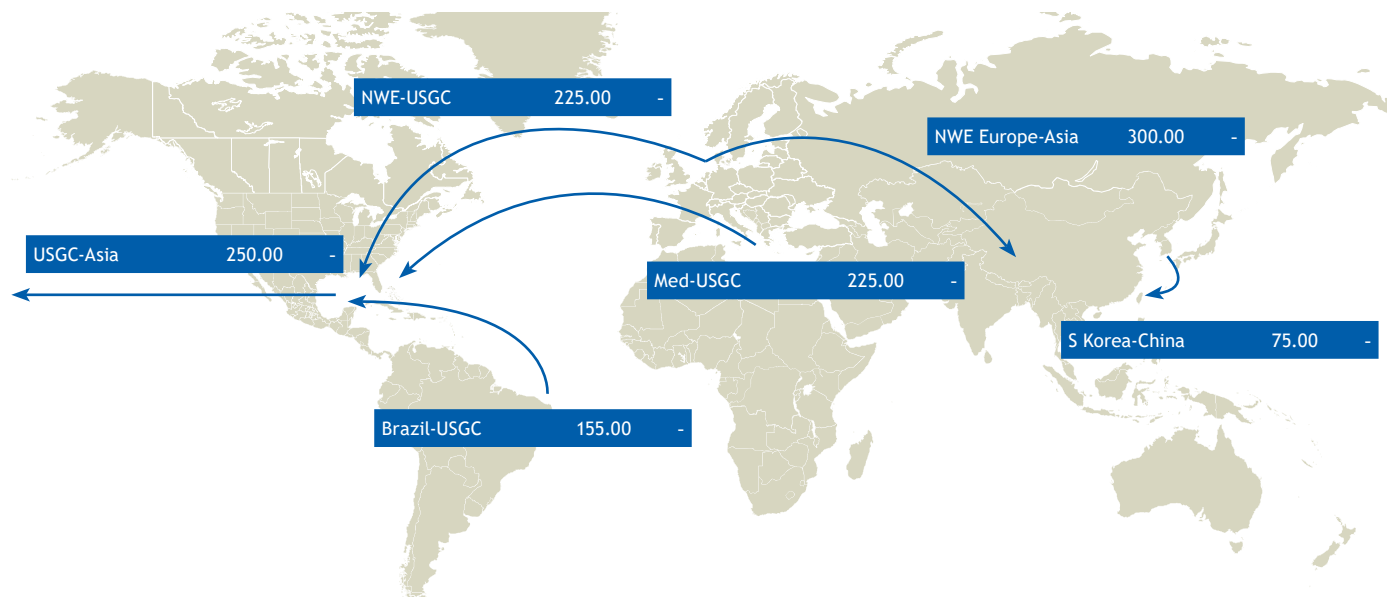
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## C4 FREIGHT RATES

\$/t



## IMPORTS AND EXPORTS

Asia-Pacific C4 imports						
Ship name	BD '000t	CC4 '000t	C4 RAF/IB	Load port	Laycan	Destination
Adriatic Gas	12				H1 Jan	Asia
Total 2022	11.5	0.0	0.0			
Atlantic Gas	13.0			ARA	Ely Jan	Asia
GasChem Adriatic	5.0			Brazil	H1 Jan	Asia
Celtic Gas	12.5			Brazil	H1 Feb	Asia
Trans Iberia	6.0			ARA	H1 Feb	Asia
Sonoma Spirit	5.0			ARA	Mid Feb	Asia
Navigator Umbrio	6.0			Brazil	H2 Feb	Asia
Navigator Ceres	12.0			Brazil	End Mar	Asia
Epic Salina		6.4		Turkey	Mid Apr	Asia
Epic Sentosa		6.4		Turkey	End Apr	Asia
Epic Sardina		6.4		Turkey	Mid May	Asia
Navigator Europa	6.0			Brazil	End May	Asia
Clipper Helen	5.0			Brazil	End May	Asia
Epic Shikoku		6.4		Turkey	Mid June	Asia
Clipper Hermond	5.0			Brazil	H2 June	Asia
Clipper Enyo	6.0			Brazil	H1 July	Asia
Kithnos	6.5			Brazil	H2 Aug	Asia
Epic Sula		6.4		Turkey	Ely Oct	Asia
Kalolimnos		6.0		USG	Ely Oct	Asia
Epic Susak		6.0		Mexico/USG	Mid Oct	Asia
Bering Gas	11.5			ARA	End Oct	Asia
Dancing Brave	12.0			ARA	H1 Nov	Asia
Total 2021	123.0	44.0	0.0			
Total 2020	501	12	9.0			
Total 2019	470.4	88.2	6.5			
Total 2018	331.5	43.5	0.0			

## IMPORTS AND EXPORTS

North America C4 imports						
Ship name	BD '000t	CC4 '000t	C4 RAF/IB	Load Port	Laycan	Destination
GasChem Arctic	4.5			ARA	Early Jan	USG
Total 2022	4.5	0.0	0.0			
Dilos	6.5			ARA	End Jan	USG
Sigmagas	5.4			Brazil	Ely Mar	USG/Mexico
Tessa Kosan	3.0			Med	Mid Mar	Mexico
Pacific Gas	5.0			Brazil	End Mar	Mexico
Unikum Spirit	7.0			ARA	H1 Mar	USG
Happy Osprey	7.0			ARA	H2 Mar	USG
Stina Kosan	5.0			Med	End Mar	Mexico
Theresa Schulte		3.1		Mexico	March	USG
Navigator Scorpio	5.3			Brazil	Ely Apr	USG
Deltagas	4.0			ARA	H1 Apr	Mexico
Happy Bird	4.5			ARA	H2 Apr	USG
Tenna Kosan	3.5			Med	End Apr	Mexico
Happy Peregrine	6.5			ARA	End Apr	USG
Navigator Gemini	10.0			Brazil	End Apr	USG/Mexico
Deltagas	4.0			USG	H1 May	Mexico
Kithira	5.0			ARA	H1 May	Mexico
Navigator Copernico	4.0			ARA	Mid May	Mexico
Navigator Copernico	4.0			ARA	Mid May	USG
Happy Osprey	5.0			ARA	End May	USG
GasChem Arctic	5.0			Brazil	End May	USG/Mexico
Coral Furcata	5.0			S. Korea	Ely June	USG
Navigator Umbrio	5.0			China	H1 June	Mexico
Gaschem Caribic	5.3			Brazil	H2 June	USG
Gaschem Atlantic	5.3			Brazil	H2 June	Mexico
Happy Osprey	4.0			USG	H2 June	Mexico
Happy Peregrine	7.0			ARA	End June	USG
Atlantic Gas	4.4			Brazil	H1 July	Mexico
Gaschem Baltic	4.5			ARA	H1 July	USG
Navigator Europa	5.0			S. Korea	Mid July	USG
Happy Osprey	7.0			ARA	Mid July	USG
GasChem Caribic		2.2		Mexico	July	USG
Henrietta Kosan	4.0			Med	Early Aug	Mexico
Navigator Gemini	5.0			Brazil	Early Aug	USG
Thekla Schulte	4.0			Thailand	H1 Aug	USG
Adriatic Gas	10.0			ARA	Mid Aug	USG
Napa Spirit	6.0			S. Korea	H2 Aug	USG
Mygas	6.5			ARA	H2 Aug	USG
Trans Catalonia	5.0			ARA	H2 Aug	USG
Pacific Venus	6.0			S. Korea	End Aug	USG, Mexico
JBU Schelde	6.0			S. Korea	End Aug	USG
GasChem Arctic	5.3			Brazil	End Aug	USG
Navigator Copernico	6.6			ARA	Ely Sept	USG
Navigator Copernico	4.0			ARA	Ely Sept	Mexico
Kamilla Kosan	6			S. Korea	H1 Sept	USG
Navigator Gemini	4.0			Brazil	H1 Sept	USG
Navigator Gemini	4.0			Brazil	H1 Sept	Mexico
Pacific Venus	5			Brazil	H2 Sept	Mexico
Pacific Mercury	8.0			ARA	End Sept	USG
Coral Alameda	5			Brazil	H1 Oct	USG
Dilos	6.0			ARA	H1 Oct	USG
GasChem Atlantic	4			ARA	H1 Oct	USG
Helena Kosan	4			Med	H1 Oct	Mexico

## IMPORTS AND EXPORTS

North America C4 imports						
Ship name	BD '000t	CC4 '000t	C4 RAF/IB	Load port	Laycan	Destination
Happy Bird	5			S. Korea	Mid Oct	USG
Atlantic Gas	5			Brazil	Mid Oct	USG
Thekla Schulte	6.0			ARA	H2 Oct	USG
Astipalea	5.0			Brazil	Mid Oct	Mexico
Adriatic Gas	7			Brazil	End Oct	USG
Thalea Schulte	4.5			ARA	early Nov	Mexico
Rhogas	4.0			ARA	H1 Nov	Mexico
Tenna Kosan	5.3			Med	H1 Nov	Mexico
Gaschem Baltic	5.3			Brazil	H1 Dec	USG
Thetagas	5.0			ARA	H1 Dec	USG
Atlantic Gas	9.0			ARA	H2 Dec	USG
Clamor Schulte	4.0			Med	End Dec	USG
Total 2021	331.9	5.3	0.0			
Total 2020	96	0.0	2			
Total 2019	150.2	95.5	13.4			
Total 2018	250.0	134.0	0.0			
* with butene-1						
**with propylene						

Europe, Mediterranean C4 exports						
Ship name	BD '000t	CC4 '000t	C4 RAF/IB	Load port	Laycan	Destination
GasChem Arctic	4			ARA	Ely Jan	USG
Total 2022	4.5	0.0	0.0			
Atlantic Gas	13.0			ARA	Ely Jan	Asia
Epic Borinquen		4		Turkey	H1 Jan	ARA
Dilos	6.5			ARA	End Jan	USG
Moritz Schulte			4	ARA	H1 Feb	Middle East
Trans Iberia	6.0			ARA	H1 Feb	Asia
Sonoma Spirit	5.0			ARA	Mid Feb	Asia
Jotagas			4.2	ARA	H2 Feb	Middle East
Tanja Kosan			3.5	ARA	End Feb	Middle East
Tessa Kosan	3.0			ARA	Mid Mar	Mexico
Unikum Spirit	7.0			ARA	H1 Mar	USG
Happy Osprey	7.0			ARA	H2 Mar	USG
Stina Kosan	5.0			Med	End Mar	Mexico
Tenna Kosan			3.0	ARA	Ely Apr	Middle East
Deltagas	4.0			ARA	H1 Apr	Mexico
Epic Salina		6		Turkey	Mid Apr	Asia
Happy Bird	4.5			ARA	H2 Apr	USG
Tenna Kosan	3.5			Med	End Apr	Mexico
Happy Peregrine	6.5			ARA	End Apr	USG
Navigator Gemini	10.0			ARA	End Apr	USG/Mexico
Epic Sentosa		6		Turkey	End Apr	Asia
Kithira	5.0			ARA	H1 May	Mexico
Epic Sardina		6		Turkey	Mid May	Asia
Navigator Copernico	4.0			ARA	Mid May	Mexico
Navigator Copernico	4.0			ARA	Mid May	USG
Happy Osprey	5.0			ARA	End May	USG
Thekla Schulte			6	ARA	H2 June	Middle East
Happy Peregrine	7.0			ARA	End June	USG
Gaschem Baltic	4.5			ARA	H1 July	USG
Happy Osprey	7.0			ARA	Mid July	USG
Taugas			6	ARA	End July	Middle East

Europe, Mediterranean C4 exports						
Ship name	BD '000t	CC4 '000t	C4 RAF/IB	Load port	Laycan	Destination
Henrietta Kosan	4.0			Med	Early Aug	Mexico
Adriatic Gas	10.0			ARA	Mid Aug	USG
Theresa Schulte			6	ARA	Mid Aug	Middle East
Mygas	6.5			ARA	H2 Aug	USG
Trans Catalonia	5.0			ARA	H2 Aug	USG
Thalea Schulte	6.0			ARA	End Aug	USG
Navigator Copernico	6.6			ARA	Ely Sept	USG
Navigator Copernico	4.0			ARA	Ely Sept	Mexico
Mygas			6.0	ARA	Mid Sept	Middle East
Pacific Mercury	8.0			ARA	End Sept	USG
Othoni			4.0	ARA	End Sept	Middle East
Dilos	6.0			ARA	H1 Oct	USG
GasChem Atlantic	4			ARA	H1 Oct	USG
Helena Kosan	4			Med	H1 Oct	Mexico
Eco Galaxy		4.0		ARA	Mid Oct	Asia
Epic St. George		3		ARA	H2 Oct	Asia
Thekla Schulte	6.0			ARA	H2 Oct	USG
Bering Gas	11.5			ARA	End Oct	Asia
Thalea Schulte	4.5			ARA	early Nov	Mexico
Trans Iberia			6.0	ARA	H1 Nov	Middle East
Happy Osprey			6	ARA	H1 Nov	Middle East
Dancing Brave	12.0			ARA	H1 Nov	Asia
Rhogas	4.0			ARA	H1 Nov	Mexico
Tenna Kosan	5.3			Med	early Dec	Mexico
Trans Catalonia			6	ARA	early Dec	Middle East
Thetagas	5.0			ARA	H1 Dec	USG
Mygas			6.0	ARA	H1 Dec	Middle East
Atlantic Gas	9.0			ARA	H2 Dec	USG
Clamor Schulte	4.0			Med	End Dec	USG
Tessa Kosan			3.5	ARA	End Dec	Middle East
Total 2021	243.2	30.4	73.2			
Total 2020	356.0	24.0	51			
Total 2019	287.2	127.5	38.6			
Total 2018	290.5	146.5	0.0			

US butadiene exports						
Ship name	BD '000t	CC4 '000t	RAF '000t	Load port	Laycan	Destination
Tenna Kosan			2.0	USG	Jan	Middle East
Theresa Schulte			2	USG	Jan	Mexico
Happy Peregrine		3.0		USG	End Mar	Europe
Tessa Kosan		4.0		USG	End Mar	ARA
Deltagas	4.0			USG	H1 May	Mexico
Tanja Kosan			3.0	Mexico	Ely June	ARA
Happy Osprey	4.0			USG	H2 June	Mexico
Kalolimnos		6.0		USG	Ely Oct	Asia
Epic Susak		6.0		Mexico/	Mid Oct	Asia
Epic Salina		6.2		USG	End Oct	Asia
Total 2021	8.0	25.2	6.6			
Total 2020	68.3	0.0	0.0			
Total 2019	48.5	3.5	0.0			
Total 2018	48.0	0.0	0.0			

Asia-Pacific C4 exports					
Ship Name	BD '000t	CC4 '000t	Load port	Laycan	Destination
Coral Furcata	5.0		S. Korea	Ely June	USGC
Navigator Umbrio	5.0		China	H1 June	Mexico
Navigator Europa	5.0		S. Korea	mid-July	USG
Thekla Schulte	4.0		Thailand	H1 Aug	USG
Napa Spirit	6.0		S. Korea	H2 Aug	USG
Pacific Venus	6.0		S. Korea	End Aug	USGC,
JBU Schelde	6.0		S. Korea	End Aug	USG
Kamilla Kosan	6		S. Korea	H1 Sept	USG
Happy Bird	5		S. Korea	Mid Oct	USG
Total 2021	47.1	0.0			
L Kosan	5.0		S. Korea	Mid Mar	USGC
Sonoma Spirit	5.0		S. Korea	Mid Mar	USGC
Total 2020	10.0	0.0			
Navigator Centauri		6.0	Philippines	Jun	USGC
Total 2019	0.0	6.0			
Penelope M	5.0		S. Korea	1H May	USGC
PGC Eirini	5.0		Singapore	1H May	USGC
Norgas Shasta		6.0	S. Korea	End Aug	USGC
Total 2018	10.0	6.0			

## FREIGHT

Cargo bookings to North America			
	Nov 21	Dec 21	Jan 22
<b>Ex-Europe</b>			
Butadiene	14	18	4
Crude C4	0	0	0
C4 raffinate	0	0	0
<b>Ex-Asia</b>			
Butadiene	0	0	0
Crude C4	0	0	0
<b>Ex-Rest of World</b>			
Butadiene Brazil	0	5	0
Crude C4 Mexico	0	0	0
Crude C4 Turkey	0	0	0
Crude C4 Brazil	0	0	0
Butadiene Other	0	0	0
<b>Totals</b>			
Butadiene	14	23	4
Crude C4	0	0	0
C4 raffinate	0	0	0

Freight rates		\$/t
	Rate	±
C4 freight NWE - USGC	225.00	0.00
C4 freight Med - USGC	225.00	0.00
C4 freight Brazil - USGC	155.00	0.00
C4 freight USGC - Asia	250.00	0.00
C4 freight NWE Europe - Asia	300.00	0.00
C4 freight S Korea - Taiwan	75.00	0.00

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