

NEWS AND ANALYSIS

China's graphite export prices up on fresh demand

Chinese graphite flake export prices have increased in response to restocking activity from seaborne buyers.

Argus assessed export prices for 94pc grade graphite flake at \$800-840/t fob on 20 September, up from \$740-790/t fob on 13 September.

Overseas buyers rushed to build stocks for the fourth quarter to avoid potential output cutbacks in China with expected low winter temperatures. Most producers in north China, particularly the largest production hub of Heilongjiang province that accounts for 80pc of domestic production, usually cut production in the fourth quarter as winter temperatures worsen working conditions and reduce flotation efficiency.

The occasional outbreak of Covid-19 and environmental inspections have brought about uncertainty to supplies in China and pushed buyers to secure their orders in advance.

Producers in Heilongjiang's Hegang city reduced output during September and October 2021 because of the country's energy consumption curbs, while they suspended their operations at the end of 2021 because of environmental inspections. Hegang-based producers did not resume their production until April this year.

Production logistics were halted in Shandong province's Laixi city, another graphite production hub in China, following Covid-19-led lockdowns in March this year. This resulted in prices for 94pc grade graphite flake rising to 5,100-5,600 yuan/t (\$723-794/t) ex-works on 29 March, the highest since October 2018 when Argus first launched the price assessment. Argus assessed prices for 94pc grade graphite flake firm at Yn4,800-5,200/t ex-works China on 20 September.

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MARKETS

Key prices					
Market	Unit	Date	Low	High	±
Battery Materials					
Cobalt min 99.8% alloy grade du Rotterdam	\$/lb	21 Sep	25.80	27.00	nc
Cobalt sulphate min 20.5% ex-works China	Yn/t	21 Sep	60,000	63,000	nc
Cobalt hydroxide min 30% cif China	\$/lb	20 Sep	14.20	14.70	nc
Cobalt hydroxide payable indicator 30% min Co cif China	pct	21 Sep	59.50	61.50	nc
Lithium carbonate min 99.5% cif China	\$/kg	21 Sep	62.50	63.50	nc
Lithium hydroxide min 56.5% fob China	\$/kg	21 Sep	78.00	79.00	nc
Lithium concentrate (spodumene) 6% Li2O cif China	\$/t	20 Sep	5,550.00	5,700.00	nc
Nickel Sulphate min 22% ex-works China	Yn/t	21 Sep	38,000	39,000	nc
Nickel sulphate min 22% cif China	\$/t	21 Sep	4,600	4,800	nc
Graphite Flake 94% min carbon fob China	\$/t	20 Sep	800	840	+55
Manganese sulphate min 32% Mn battery grade ex works China	Yn/t	20 Sep	6,400	6,500	nc
Technology Materials					
Minor Metals					
Bismuth Ingot min 99.99% fob US warehouse	\$/lb	20 Sep	4.15	4.65	-0.42
Indium min 99.99% fob China	\$/kg	21 Sep	210	220	-10
Selenium min 99.5% fob US warehouse	\$/lb	20 Sep	10.00	11.00	nc
Tantalum min 99.8% du Rotterdam	\$/kg	21 Sep	350	380	-5
Tungsten APT fob China	\$/mtu WO3	21 Sep	320	325	-5
Rare Earths					
Dysprosium oxide min 99.5% fob China	\$/kg	21 Sep	314	319	+1
Praseodymium-Neodymium oxide min 99% fob China	\$/t	21 Sep	90,000	91,500	-4,000
Dysprosium oxide min 99.5% ex-works China	Yn/kg	21 Sep	2,210	2,230	+20
Neodymium oxide 99.5-99.9% ex-works China	Yn/t	21 Sep	720,000	730,000	-10,000
Praseodymium-Neodymium oxide min 99% ex-works China	Yn/t	21 Sep	630,000	640,000	-30,000
Base Metals					
Aluminium P1020 US midwest premium	\$/lb	21 Sep	0.2250	0.2430	-0.0020
Copper cathode grade A premium in-warehouse Rotterdam	\$/t	20 Sep	70.00	100.00	nc
Nickel briquette min 99.8% in-warehouse Rotterdam	\$/t	15 Sep	850	900	-50
Ferro-alloys					
Ferro-vanadium 78-82% V dp Rotterdam	\$/kg V	21 Sep	30.75	31.50	nc
Ferro-manganese HC Mn 78% ddp Europe works	€/t	21 Sep	1,140	1,240	nc
Ferro-titanium 70% Ti fob North America warehouse	\$/lb	15 Sep	3.80	4.60	-0.57

NEWS AND ANALYSIS

Producers maintained their prices in line with ample orders from Chinese consumers.

Consumers, mostly lithium-ion battery anode material producers, have begun restocking for winter consumption. Most producers are committed to term contracts and are reluctant to accept lower prices from spot buyers because of low inventories.

China's exports of graphite flake over January-July were 63,301t, down by 5.81pc from a year earlier, according to customs data, in response to output cuts in China during January-April because of environmental inspections. Imports during January-July were 92,292t, up by 297.12pc on a year earlier, largely because of the output cuts resulting from environmental inspections.

Battery demand

Market participants expect graphite flake prices to remain firm in the long term, bolstered by the expanding lithium-ion battery and new energy vehicle (NEV) industries.

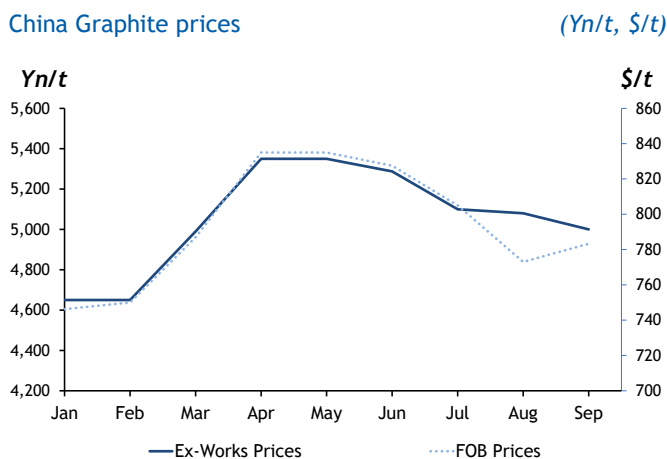
China's total output of power batteries during January-August reached 303.8GWh, up by 172.3pc from a year earlier, with installed volumes increasing by 112.3pc to 162.1GWh over the same period, China's Association of Automobile Manufacturers data show.

The China Passenger Car Association raised its guidance for NEV sales in August to above 6mn units in 2022, up from 5.5mn units released at the start of this year. The Chinese government will continue to exempt purchase taxes on NEVs until the end of 2023 in response to the country's decarbonisation targets for 2030 and 2060. China will also offer more supportive policies to bolster the NEV industry, including easing travel restrictions and raising the quotas on licence plates, as well as building more battery charging points.

Producing a battery with 1GWh of storage capacity typically requires 1,200-1,250t of anode material, according to market participants.

The forecast vehicle growth will probably boost long-term demand for power batteries and battery metals such as cobalt, lithium, nickel, manganese and graphite.

China Graphite prices



Proposal to amend frequency of some rare earth prices

Argus proposes to reduce the assessment frequency of the following Chinese rare earth assessments to monthly from twice-monthly to better align with market activity.

- Europium metal min 99.9% fob China, USD/kg
- Europium oxide min 99.99% ex-works China, CNY/kg
- Europium oxide min 99.99% fob China, USD/kg
- Mischmetal 35% La 65% Ce ex-works China, CNY/t
- Mischmetal 35% La 65% Ce fob China, USD/kg

Argus will accept comments on this proposed change until 23 September. To discuss comments on this proposal, please contact Ohmin Zhao at ohmin.zhao@argusmedia.com. Formal comments should be marked as such and may be submitted by email to ami@argusmedia.com and received by 23 September. Please note, formal comments will be published after the consultation period unless confidentiality is specifically requested.

MINOR METALS: MARKET NEWS AND ANALYSIS

Chinese W dips on back of lower bids, offers

The Chinese tungsten market fell this week as most producers cut their second-half September bid and offer prices for tungsten concentrate and ammonium paratungstate (APT).

Zhangyuan Tungsten cut its bid price for 88.5pc grade APT by 1,500 yuan/t (\$213/t) from Yn177,500/t in the second half of September to Yn176,000/t for the first half of September. Its bid price for 55pc grade wolframite concentrate fell by Yn1,000/t to Yn114,000/t from Yn115,000/t over the same period.

Fellow primary material consumer Xiamen Tungsten cut its APT bid price higher by Yn1,000/t to Yn176,000/t for second-half September, following a previous fall of Yn500/t in the first half of the month.

Primary tungsten material producer Jiangxi Tungsten cut its second-half September offer price for 65pc grade concentrate to Yn117,000/t from Yn118,000/t in first-half September and down from Yn120,000/t in the second half of August.

These bids and offers have become market indicators given that bi-monthly term contracts account for more than 50pc of total trade volumes.

Argus assessed prices for 55pc grade wolframite concentrate at Yn114,000-115,000/t ex-works on 20 September, down by Yn1,000/t from the assessment on 15 September and a combined fall of Yn2,500/t since the start of September. The range for 88.5pc grade APT dipped by Yn1,000/t from 15 September to Yn176,000-177,000/t ex-works on 20 September, with producers showing resistance to lower offers below the range because of slim profit margins squeezed by higher feedstock costs.

Persistently weak demand from the cemented carbide industry dented market confidence and resulted in price falls

in concentrate and intermediate products. But it is difficult for the market to see significant drops given concentrate supply tightness caused by depleted high-grade resource and environmental protection restrictions, market participants said.

Sunwoda to expand lithium-ion battery capacity

Chinese lithium-ion battery manufacturer Sunwoda Electronic plans to build 50 GWh/yr of lithium-ion battery capacity in Yiwu city of southeast China's Zhejiang province, to meet rapid developments in the electric vehicle (EV) and energy storage sectors.

The firm plans to invest a total of 21.3bn yuan (\$3bn) to build a facility in Yiwu with a combined capacity of 50 GWh/yr for lithium-ion batteries, including power batteries and energy storage batteries. The facility will be constructed in two phases, with an investment of Yn12.8bn for the first phase of 30 GWh/yr and Yn8.5bn for the second phase of 20 GWh/yr. More details including the construction schedule and launch date were undisclosed.

The firm has recently been actively expanding its capacity. It unveiled on 15 September a plan to invest Yn12bn to build a 30 GWh/yr power battery facility in Yichang city of central China's Hubei province. Sunwoda is also developing lithium-ion battery facilities in Guangdong, Jiangxi, Jiangsu, Shandong, Sichuan, Hubei and Zhejiang provinces with combined nameplate capacities exceeding 220 GWh/yr.

Sunwoda is a major lithium-ion battery producer in China and their products are used in the computer, communication and consumer electronics, EV and energy storage sectors.

China's total output of power batteries during January-August reached 303.8GWh, up by 172.3pc from the year-earlier period, with installed volumes increasing by 112.3pc to 162.1GWh over the same period.

China's Contemporary Amperex Technology (CATL), BYD and China Aviation LB were the top three power battery manufacturers in terms of installed volumes in the first eight months of this year at 76.9GWh, 36GWh and 11.4GWh respectively, and accounting for 47.5pc, 22.2pc and 7pc of the total volume. This was followed by Gotion and Sunwoda at 8GWh and 4GWh respectively, making up 4.9pc and 2.5pc.

GEM secures feedstock for Indonesian NiCo plant

China's major cobalt refiner and lithium-ion battery cathode active material (CAM) precursor manufacturer Green Eco-Manufacture (GEM) has secured feedstock for its nickel-cobalt mixed hydroxide precipitate (MHP) facility in Indonesia.

GEM's nickel and cobalt project in Indonesia, which is

Monthly bid prices for 88.5pc APT			Yn/t
	Xiamen Tungsten	Zhangyuan Tungsten	Xianglu Tungsten
1H May	176,000	176,000	173,000
2H May	170,000	170,000	170,000
1H Jun	167,500	167,500	166,500
2H Jun	166,000	166,000	168,000
1H Jul	165,000	167,000	168,000
2H Jul	167,000	169,500	170,000
1H Aug	172,000	174,500	175,500
2H Aug	176,500	178,000	177,500
1H Sep	177,000	177,500	178,000
2H Sep	176,000	176,000	N/A

— Zhangyuan Tungsten

operated by its subsidiary PT QMB New Energy Materials, recently signed a strategic co-operation agreement with Australia-based Nickel Industries' subsidiary PT Hengjaya Mineralindo. QMB will build a mineral processing plant in Hengjaya's mining area in Indonesia, and Hengjaya will supply laterite nickel ore. The timelines for the construction and the supply were not disclosed.

The concentration plant will then supply approximately 5mn-7mn t/yr of limonite ore containing 1.1-1.3pc of nickel to QMB's high-pressure acid leaching (HPAL) plant in the Indonesia Morowali Industrial Park (IMIP) by pipeline over 20 years, with a total target of 1.5mn t of nickel metal over the period. Hengjaya has measured resources of 3.7mn t of nickel metal and 270,000t of cobalt metal.

PT QMB New Energy Materials is a joint venture between GEM and China's key nickel-cobalt-manganese (NCM) precursor manufacturer Brunp and leading Chinese nickel and stainless steel producer Tsingshan. It is on track to [raise its nickel production by 23,000 t/yr of metal equivalent](#) and cobalt output by 2,300 t/yr of metal equivalent to 73,000 t/yr of nickel metal equivalent and 6,000 t/yr of cobalt metal equivalent, through production process optimisation and equipment innovation.

The initial 50,000 t/yr project's first phase of 30,000 t/yr of nickel metal equivalent completed construction as planned in late June, and is entering the stage of equipment adjustment, with the MHP products to be shipped later.

GEM operates an industrial chain spanning cobalt salts and nickel salts to lithium-ion cathode materials, as well as cobalt metal and powder. It is targeting NCM precursor sales of 160,000 t/yr this year, with sales up by 57pc on the year to 66,001t over January-June. GEM aims to further increase its output and sales to 400,000 t/yr each by 2025, to meet rising demand from the expanding new energy vehicle market.

Australia's NT in tie-up for Li-ion battery plant

Australia's Northern Territory (NT) government has signed an initial agreement with Taiwanese battery materials producer Aleees and Perth-based mineral exploration firm Avenirra to develop its first lithium-ion phosphate battery cathode manufacturing plant in Darwin.

Lithium-ion batteries are used in electric vehicles (EVs). The agreement provides the framework for the NT government, Aleees and Avenirra to work together on a pilot facility to achieve a final investment decision by early 2023, the regional government said. Once operational, the pilot facility will manufacture up to 10,000t/yr of lithium-iron phosphate battery cathode material, it said.

The agreement further supports the development of a manufacturing facility with up to 200,000t/yr of capacity,

to be built in Darwin over the next 10 years. The facility will exclusively source phosphoric acid from the Wonarah phosphate project in Barkly, near the NT-Queensland border and transport it more than 1,000km via road from Darwin. Avenirra operates the Wonarah phosphate project.

"This move has a very significant impact on strengthening the lithium battery supply chain in the world," Aleees Australia president Brandon Chang said. "This cooperation enhances the development of the lithium battery industry in Australia, promoting green energy high-tech development."

Australia has no battery material manufacturing plants, but many state governments including Western Australia have expressed an interest in hosting such a plant.

By Kevin Morrison

Vianode to build battery materials plant

Norwegian synthetic graphite producer Vianode plans to build a new battery chemicals plant in Heroya, Norway, following a 2bn kroner (\$194.6mn) investment decision.

The plant is expected to produce enough anode material for up to 20,000 electric vehicles (EVs) per year by 2024.

Vianode also expects to begin development plans for a second battery materials plant that would produce materials for up to 2mn EVs by 2030. These plans would be developed during the construction of the initial plant.

"Europe is facing a significant shortfall of graphite materials towards 2030, which Vianode aims to address," Vianode general manager Stian Madshus said.

Vianode's synthetic graphite materials are produced using up to 90pc less carbon dioxide emissions than standard graphite materials and could increase the battery's range and lifecycle while facilitating faster charging, the company has said.

Vianode is [part owned](#) by Norwegian metals and chemical producer Elkem as well as aluminium producer Hydro and the investment fund Altor.

Argus last assessed prices for 94pc graphite flake at \$800-840/t fob China, up sharply from the 13 September assessment of \$740-790/t. This year prices have averaged around \$773-813/t, up by about a third from the 2021 average of \$518-551/t.

By Sian Morris

China's August Si exports fall with higher costs

China's silicon metal prices fell in August from a year and a month earlier, as higher purchasing costs with sustained rises in domestic prices outweighed steady buying interest from international consumers.

The country exported 56,258t of silicon metal (Si 99.99pc maximum) in August, down by 16.9pc from 67,714t a year earlier and by 4.4pc from July, customs data show.

Exports totalled 457,623t during January-August, down by 14pc from 532,114t against the same period last year.

Power restrictions with reduced rainfall cutting hydro-power output and Covid-19 pandemic restrictions reduced metal output in the major producing hubs, which pushed average domestic prices for 5-5-3 grade silicon metal in August up by 11.8pc from a month earlier to around 18,630 yuan/t (\$2,642/t) delivered to ports. Exporting companies were unlikely to confirm offer prices in the second half of the month, as metal producers floated higher prices day by day because of tighter spot metal availability.

Expected lower operating rates at metal producers in south China ahead of the October-May monsoon season have supported the metal market in the past two days. Argus last assessed domestic prices for 5-5-3 grade metal at Yn19,000-19,300/t delivered to ports on 20 September, up by Yn100/t against 15 September.

China silicon exports						t
	Aug 22	Aug 21	± %	Jan-Aug 2022	Jan-Aug 2021	± %
Japan	14,402	14,669	-1.8	98,186	112,544	-12.8
South Korea	8,214	8,128	1.1	57,270	59,655	-4.0
Total	56,258	67,714	-16.9	457,623	532,114	-14.0

— China customs

Songtao Sanhe resumes manganese production

Chinese manganese producer Songtao Sanhe has resumed 160 t/d of manganese flake production this week after 1½ months of output suspensions.

The firm halted 160 t/d of manganese flake output at the start of August following the manganese industry alliance's call to cut output by 60pc. It also delayed restarting production at the beginning of September because of limited manganese ore feedstock availability during local environmental inspections. Songtao Sanhe restarted production this week because of an increased supply of manganese ore after the environmental inspections ended.

The smelter, located in Songtao county in southwest China's Guizhou province, has a combined output capacity of 60,000 t/yr from its four production lines.

Prices for 99.7pc grade manganese flake were assessed at 15,300-15,500 yuan/t (\$2,173-2,201/t) ex-works on 21 September, down by Yn100/t from 20 September and down by Yn200/t from 19 September.

The market showed signs of weakening this week because of lower tender prices from stainless steelmakers and increasing output resulting from output resummptions at some

producers. But key producers still held prices at the high end of the price range because of thin profit margins.

SGX to launch battery metal contracts in Sept

The Singapore Exchange (SGX) will launch four battery metal futures contracts next week, allowing companies to hedge against raw material price volatility in view of a rapidly growing electric vehicle (EV) market.

SGX will launch futures contracts for cobalt metal, cobalt hydroxide, lithium carbonate and lithium hydroxide on 26 September.

The contract size is 1t and will be cover up to 36 months and 24 months respectively for cobalt and lithium products. The final settlement price will be an arithmetic average of daily prices in the expiring contract month.

Argus forecasts that global EV sales will reach 31mn units by 2032 on the back of strong Chinese and European performance, up from 6.23mn last year, according to China Passenger Car Association data. The forecast EV growth is likely to boost long-term demand for and trading of power batteries and battery metals such as cobalt, lithium, nickel, manganese and graphite.

Argus last assessed the cobalt hydroxide (30pc min Co) payable indicator cif China at 59.5-61.5pc at the low end of the Argus European chemical-grade cobalt metal price on 21 September, unchanged from 16 September. Prices for 56.5pc grade lithium hydroxide were assessed at \$78-79/kg fob China on 20 September.

By ZhiChao Zhang

Munoth to start Li-ion cells production in October

India's Munoth Industries has begun pre-production runs at its lithium-ion cell manufacturing facility in Tirupati, in Andhra Pradesh state, and plans to start commercial production by October.

The plant has capacity to produce about 7mn cells/yr or 20,000 cells of 10Ah daily. This is Phase 1 of the 1.25GW project and the company plans to increase capacity fivefold over the next three years.

This will be India's first lithium-ion plant. Having a domestic source for lithium cells is expected to reduce dependence on costly imports and reduce the cost of manufacturing electronics and electric vehicles in the country, ultimately accelerating the energy transition. India's plans to reach \$300bn worth of electronic manufacturing and exports by 2025-26, from \$67.3bn in 2020-21, along with its production-linked incentive scheme for advanced chemistry cell battery storage, is likely to boost demand for metals used in battery and electronics in the long term.

By Samil Surendran

Battery metals price assessments

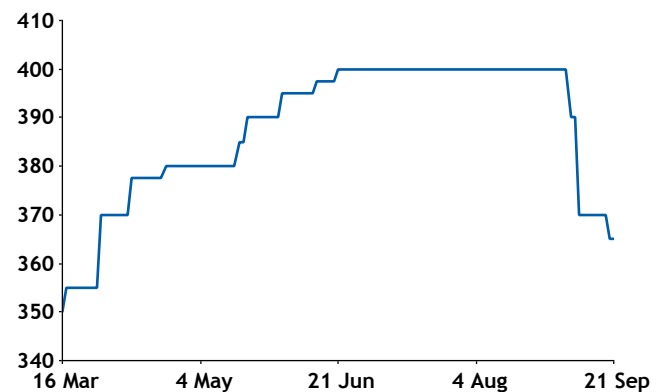
	Unit	21 Sep		± Date	±
		Low	High		
Antimony					
Ingot min 99.65% ex-works China	Yn/t	78,000	79,000	15 Sep	nc
Ingot min 99.65% fob China	\$/t	12,500	12,800	15 Sep	nc
Min 99.85% ex-works China	Yn/t	79,000	80,000	15 Sep	nc
Regulus grade II min 99.65% Sb du Rotterdam	\$/t	12,900	13,250	15 Sep	nc
Regulus Trioxide grade min 99.65% Sb du Rotterdam	\$/t	12,900	13,250	15 Sep	nc
Trioxide min 99.5% ex-works China	Yn/t	68,000	69,000	15 Sep	nc
Trioxide min 99.5% fob China	\$/t	10,100	10,200	15 Sep	-100
Trioxide min 99.8% ex-works China	Yn/t	70,000	71,000	15 Sep	nc
Trioxide min 99.8% fob China	\$/t	10,200	10,300	15 Sep	-100
Cadmium					
Min 99.99% du Rotterdam	\$/lb	1.54	1.62	15 Sep	nc
Min 99.99% ex-works China (20 Sep)	Yn/t	20,700	21,000	13 Sep	+300
Min 99.99% cif India	Rs/kg	250.00	255.00	15 Sep	nc
Min 99.95% du Rotterdam	\$/lb	1.52	1.60	15 Sep	nc
Min 99.95% cif India	Rs/kg	250.00	255.00	15 Sep	nc
Oxide min 99.5% ex-works China (20 Sep)	Yn/t	21,200	21,500	13 Sep	+300
Cobalt					
(Electrolytic metal) min 99.8% ex-works China	Yn/kg	335	350	15 Sep	nc
Chloride min 24% ex-works China	Yn/t	70,000	73,000	15 Sep	nc
Cobalt min 99.8% alloy grade du Rotterdam	\$/lb	25.80	27.00	15 Sep	nc
Min 99.8% chemical grade du Rotterdam	\$/lb	25.50	26.30	15 Sep	nc
Cobalt hydroxide min 30% cif China (20 Sep)	\$/lb	14.20	14.70	13 Sep	nc
Oxide 72% ex-works China	Yn/kg	230	235	15 Sep	nc
Powder min 99.8% ex-works China	Yn/kg	355	365	15 Sep	nc
Cobalt sulphate min 20.5% ex-works China	Yn/t	60,000	63,000	15 Sep	nc
Sulphate min 20.5% ex-works China excl. VAT USD/lb	\$/lb	3.42	3.59	15 Sep	-0.03
Tetroxide min 73% ex-works China	Yn/kg	235	240	15 Sep	nc
Graphite					
Flake 94% min carbon ex-works China (20 Sep)	Yn/t	4,800	5,200	13 Sep	nc
Graphite Flake 94% min carbon fob China (20 Sep)	\$/t	800	840	13 Sep	+55
Lithium					
Carbonate min 99.5% ex-works China	Yn/t	495,000	505,000	20 Sep	nc
Carbonate min 99.5% ex-works China excl. VAT USD/kg	\$/kg	62.20	63.46	20 Sep	-0.25
Lithium carbonate min 99.5% cif China	\$/kg	62.50	63.50	15 Sep	nc
Lithium cobalt oxide min 60% Co ex-works China	Yn/kg	425	435	15 Sep	nc
Hydroxide min 56.5% ex-works China	Yn/t	488,000	498,000	20 Sep	+3,000
Hydroxide min 56.5% ex-works China excl. VAT USD/kg	\$/kg	61.32	62.58	20 Sep	+0.13
Lithium hydroxide min 56.5% fob China	\$/kg	78.00	79.00	15 Sep	nc
Manganese					
Manganese sulphate min 32% Mn battery grade ex works China (20 Sep)	Yn/t	6,400	6,500	13 Sep	nc
Dioxide min 91% carbon battery grade ex works China (20 Sep)	Yn/t	17,200	17,700	13 Sep	nc
Dioxide min 91% alkaline battery grade ex works China (20 Sep)	Yn/t	18,200	18,700	13 Sep	nc
Dioxide min 91% carbon battery grade ex works China excl. VAT USD/t (20 Sep)	\$/t	2,170	2,233	13 Sep	-26
Dioxide min 91% alkaline battery grade ex works China excl. VAT USD/t (20 Sep)	\$/t	2,296	2,359	13 Sep	-28

Battery cathode active materials

	Unit	Timing	Mid	±
NCM111	\$/kWh	20 Sep	90.96	-0.69
NCM523	\$/kWh	20 Sep	90.18	-0.68
NCM622	\$/kWh	20 Sep	89.69	-0.67
NCM811	\$/kWh	20 Sep	93.03	-0.72
NCA	\$/kWh	20 Sep	92.76	-0.70
LFP	\$/kWh	20 Sep	60.01	-0.34
Averages				
NCM111 MTD	\$/kWh	20 Sep	90.96	-0.69
NCM111 monthly average	\$/kWh	30 Aug	89.99	-0.90
NCM523 MTD	\$/kWh	20 Sep	90.18	-0.68
NCM523 monthly average	\$/kWh	30 Aug	89.11	-0.57
NCM622 MTD	\$/kWh	20 Sep	89.69	-0.67
NCM622 monthly average	\$/kWh	30 Aug	88.55	-0.41
NCM811 MTD	\$/kWh	20 Sep	93.03	-0.72
NCM811 monthly average	\$/kWh	30 Aug	91.78	+0.01
NCA MTD	\$/kWh	20 Sep	92.76	-0.70
NCA monthly average	\$/kWh	30 Aug	91.49	+0.03
LFP MTD	\$/kWh	20 Sep	60.01	-0.34
LFP monthly average	\$/kWh	30 Aug	59.44	+0.53

Tantalum min 99.8% du Rotterdam

\$/kg



Electronic metals price assessments					
	Unit	21 Sep		± Date	±
		Low	High		
Arsenic					
Min 99% du Rotterdam (01 Sep)	\$/lb	1.40	1.55	1 Aug	nc
Bismuth					
Min 99.99% du Rotterdam	\$/lb	3.80	4.00	15 Sep	nc
Min 99.99% ex-works China	Yn/t	47,000	48,000	15 Sep	+500
Min 99.99% fob China	\$/lb	3.06	3.13	15 Sep	+0.02
Gallium					
Min 99.9999% ex-works China (20 Sep)	Yn/kg	3,050	3,150	13 Sep	-50
Min 99.9999% fob China (20 Sep)	\$/kg	450	460	13 Sep	-10
Min 99.99% ex-works China	Yn/kg	2,800	2,850	15 Sep	-50
Min 99.99% fob China	\$/kg	410	415	15 Sep	-5
Min 99.99% cif Main Airport	\$/kg	430	440	15 Sep	-5
Germanium					
Dioxide min 99.999% ex-works China	Yn/kg	4,800	4,900	15 Sep	nc
Dioxide min 99.999% fob China	\$/kg	670	710	15 Sep	nc
Dioxide min 99.999% cif main airport Europe	\$/kg	710	760	15 Sep	nc
Metal (zone refined ingot) min 99.999% ex-works China	Yn/kg	7,900	8,000	15 Sep	nc
Metal min 99.999% cif main airport Europe	\$/kg	1,130	1,230	15 Sep	nc
Min 99.999% fob China	\$/kg	1,070	1,170	15 Sep	nc
Indium					
Min 99.99% du Rotterdam	\$/kg	235	250	15 Sep	nc
Min 99.99% ex-works China	Yn/kg	1,420	1,470	15 Sep	-50
Indium min 99.99% fob China	\$/kg	210	220	15 Sep	-10
Min 99% ex-works China	Yn/kg	1,340	1,440	15 Sep	-50
Selenium					
Dioxide min 98% del China consumer	Yn/kg	85.00	93.00	15 Sep	nc
Min 99.5% du Rotterdam	\$/lb	7.00	9.00	15 Sep	nc
Powder min 99.9% del China consumer	Yn/kg	145.00	160.00	15 Sep	nc
Tantalum					
Pentoxide min 99.5% ex-works China (20 Sep)	Yn/kg	1,750	1,800	13 Sep	nc
Tantalite basis 25% Ta ₂ O ₅ cif main port	\$/lb	95.00	102.00	15 Sep	-3.00
Min 99.8% du Rotterdam	\$/kg	350	380	15 Sep	-5
Tellurium					
99.99% ex-works China (20 Sep)	Yn/kg	470	480	13 Sep	+8
Min 99.99% du Rotterdam	\$/kg	61.00	67.00	15 Sep	nc
Zirconium					
Fused zirconia 98.5% ZrO ex-works China (20 Sep)	Yn/t	40,000	40,500	13 Sep	nc
Oxychloride 36% Zr(Hf)O ₂ ex-works China (20 Sep)	Yn/t	18,500	19,000	13 Sep	-500
Oxychloride 36% Zr(Hf)O ₂ fob China (20 Sep)	\$/t	2,640	2,750	13 Sep	-120
Silicate 65% Zr(Hf)O ₂ ex-works China (20 Sep)	Yn/t	18,500	19,000	13 Sep	nc
Sponge 99.4% Zr+Hf ex-works China (20 Sep)	Yn/kg	190.00	210.00	13 Sep	nc

High-temperature metals price assessments					
	Unit	21 Sep		± Date	±
		Low	High		
Chromium					
(alumino-thermic) min 99% dp Rotterdam	\$/t	11,000	14,000	15 Sep	nc
(aluminothermic) min 99% Cr fob China	\$/t	9,700	10,200	15 Sep	+200
(aluminothermic) min 99% Cr ex-works China	Yn/t	68,000	71,000	15 Sep	+1,000
Hafnium					
Min 99% max 0.5% Zr du Rotterdam (20 Sep)	\$/kg	1,550	1,700	13 Sep	nc
Molybdenum					
Ingot min 99.8% in-warehouse Rotterdam (20 Sep)	\$/kg	48.50	51.00	13 Sep	nc
Concentrates Mo 45% ex-works China	Yn/mtu	2,920	2,950	20 Sep	+20
Roasted concentrates (oxide) min 57% ex-works China	Yn/mtu	3,020	3,050	20 Sep	nc
Oxide min 57% Mo in-warehouse Busan	\$/lb	18	18	15 Sep	+0.70
Oxide min 57% Mo du Rotterdam	\$/lb Mo	17.70	18.00	15 Sep	+0.75
Oxide min 57% Mo duty paid India	Rs/kg Mo	1,950	2,000	15 Sep	nc
Niobium					
Ingot min 99.8% in-warehouse Rotterdam (01 Sep)	\$/kg	82.00	84.50	1 Aug	nc
Pentoxide min 99.5% ex-works China (20 Sep)	Yn/kg	255	265	13 Sep	nc
(columbite) concentrate min 50% Nb ₂ O ₅ cif main port	\$/lb	13.00	15.00	15 Sep	nc
Rhenium					
APR min 69.2% Re (basic grade) du Rotterdam (20 Sep)	\$/kg Re	700	800	13 Sep	nc
APR min 69.4% Re (catalyst grade) dp Rotterdam (20 Sep)	\$/kg Re	900	1,050	13 Sep	nc
APR min 69.4% Re ex-works China (20 Sep)	Yn/kg	3,700	4,100	13 Sep	nc
Pellets min 99.9% Re dp Rotterdam (20 Sep)	\$/lb	500	600	13 Sep	nc
Tungsten					
APT du Rotterdam	\$/mtu WO ₃	340	345	15 Sep	nc
Tungsten APT fob China	\$/mtu WO ₃	320	325	15 Sep	-5
APT min 88.5% ex-works China	Yn/t	176,000	177,000	15 Sep	-1,000
Carbide min 99.7% ex-works China	Yn/kg	263	265	15 Sep	nc
Carbide powder (3-4micron) fob China	\$/kg	40.00	41.00	15 Sep	nc
Ingot min 99.9% in-warehouse Rotterdam (20 Sep)	\$/kg	46.00	47.00	13 Sep	nc
Oxide (Yellow/Blue oxide) fob China	\$/t	32,500	33,000	15 Sep	-500
Oxide min 99.95% ex-works China	Yn/t	203,000	205,000	15 Sep	-1,000
Concentrates 55% min ex-works China	Yn/t	114,000	115,000	15 Sep	-1,000
Concentrates min 65% ex-works China	Yn/t	116,000	117,000	15 Sep	-1,000
Concentrates min 65% in-warehouse Rotterdam	\$/dmtu	270	280	15 Sep	nc
Vanadium					
Pentoxide fused flake min 98% du Rotterdam (20 Sep)	\$/lb V ₂ O ₅	7.00	8.00	13 Sep	nc
Pentoxide 98% V ₂ O ₅ fob China	\$/lb	7.50	7.60	20 Sep	nc
Pentoxide 98% V ₂ O ₅ ex-works China	Yn/t	118,000	120,000	20 Sep	+500
Mineral sands price assessments					
	Unit	20 Sep		± Date	±
		Low	High		
Rutile					
Rutile Hainan min 90% TiO ₂ ex-works China	Yn/t	10,600	11,000	13 Sep	-100
Rutile Australian min 95% TiO ₂ ex-works China	Yn/t	14,500	15,300	13 Sep	-250
Zircon sand					
Zircon sand Hainan min 65% O ₂ ex-works China	Yn/t	14,100	14,900	13 Sep	nc
Zircon sand Australian min 66% O ₂ cif China	\$/t	2,255	2,285	13 Sep	nc

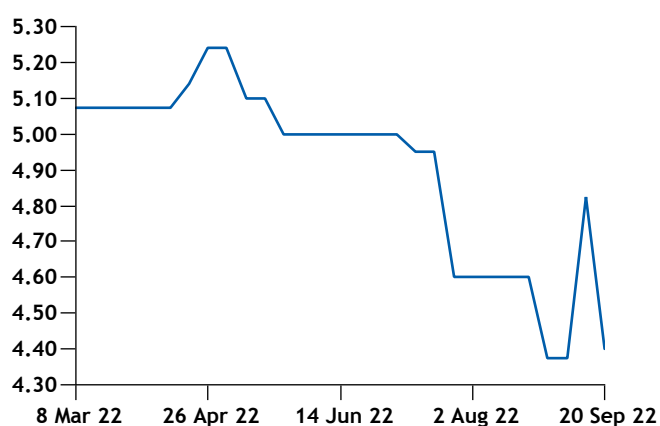
Light metals price assessments					
	Unit	21 Sep		± Date	±
		Low	High		
Magnesium					
Alloy min 90% Mg AZ91 ex-works China	Yn/t	26,700	27,200	20 Sep	nc
Alloy min 90% Mg AZ91 fob China	\$/t	3,880	3,960	20 Sep	nc
Min 99.9% du Rotterdam	\$/t	3,800	4,000	15 Sep	-100
Min 99.9% ex-works China	Yn/t	24,200	24,600	20 Sep	nc
Min 99.9% fob China	\$/t	3,530	3,580	20 Sep	nc
Powder 99.9% Mg 20-80 mesh ex-works China	Yn/t	25,700	26,200	20 Sep	nc
Powder 99.9% Mg 20-80 mesh fob China	\$/t	3,790	3,860	20 Sep	nc
Manganese					
Briquette min 97% Mn ex-works China	Yn/t	16,100	16,300	20 Sep	-100
Briquette 97% Mn fob China	\$/t	2,300	2,400	20 Sep	-12
Flake 99.7% Mn ex-works China	Yn/t	15,300	15,500	20 Sep	-100
Flake min 99.7% fob China	\$/t	2,250	2,350	20 Sep	-12
Flake min 99.7% du Rotterdam	\$/t	2,470	2,520	15 Sep	nc
Lump min 95% Mn ex-works China	Yn/t	15,800	16,000	20 Sep	-100
Lump 95% Mn fob China	\$/t	2,320	2,420	20 Sep	-12
Silicon					
5-5-3 min 98.5% Si dat Chinese ports	Yn/t	19,000	19,300	15 Sep	+100
5-5-3 min 98.5% Si fob China	\$/t	2,750	2,800	15 Sep	-120
5-5-3 min 98.5% Si ddp Europe works	€/t	3,500	3,700	15 Sep	-100
5-5-3 min 98.5% Si fca duty paid Rotterdam within 90 days (15 Sep)	€/t	3,600	3,800	8 Sep	nc
4-4-1 min 99% Si dat Chinese ports	Yn/t	20,700	21,000	15 Sep	+100
4-4-1 min 99% Si fob China	\$/t	3,000	3,050	15 Sep	-100
4-4-1 min 99% Si ddp Europe works	€/t	3,600	3,800	15 Sep	-150
3-3-0-3 min 99% Si dat Chinese ports	Yn/t	21,100	21,400	15 Sep	+100
3-3-0-3 min 99% Si fob China	\$/t	3,100	3,150	15 Sep	-90
3-3-0-3 min 99% Si fca Europe works	€/t	3,700	3,900	15 Sep	nc
2-2-0-2 min 99.5% Si dat Chinese ports (15 Sep)	Yn/t	31,300	31,800	8 Sep	nc
2-2-0-2 min 99.5% Si fob China (15 Sep)	\$/t	4,650	4,750	8 Sep	nc
2-2-0-2 min 99.5% Si fca Europe works	€/t	4,000	4,100	15 Sep	nc
Titanium					
Concentrate 50% TiO ₂ ex-works China (VAT unpaid)	Yn/t	1,900	1,950	15 Sep	nc
Concentrate 46% TiO ₂ ex-works China (VAT unpaid)	Yn/t	1,950	2,000	15 Sep	nc
Concentrate Vietnamese A grade min 50% TiO ₂ FOB China warehouse (15 Sep)	\$/t	410.00	430.00	8 Sep	nc
Concentrate Vietnamese B grade min 54% TiO ₂ FOB China warehouse (15 Sep)	\$/t	390.00	400.00	8 Sep	nc
Concentrate Mozambique origin min 50% TiO ₂ CIF China (15 Sep)	\$/t	450.00	470.00	8 Sep	nc
Concentrate Australia origin min 50% TiO ₂ CIF China (15 Sep)	\$/t	430.00	450.00	8 Sep	nc
Dioxide 93pc min rutile grade ex-works China	Yn/t	14,500	15,500	15 Sep	nc
Dioxide 93pc min rutile grade fob China	\$/t	2,050	2,150	15 Sep	nc
Dioxide 98pc min anatase grade ex-works China	Yn/t	13,000	14,000	15 Sep	nc
Ingot min 99% Ti pure TA1 ex-works China (20 Sep)	Yn/t	83,000	86,000	13 Sep	nc
Ingot min 99% Ti pure TA2 ex-works China (20 Sep)	Yn/t	82,000	84,000	13 Sep	nc
Ingot min 99% Ti pure TA3 ex-works China (20 Sep)	Yn/t	84,000	87,000	13 Sep	nc
6Al 4V ingot fob US producer (31 Aug)	\$/lb	12.50	13.50	29 Jul	+0.50
Ingot CP Grade 1 fob Rotterdam USD/kg (01 Sep)	\$/kg	11.30	11.90	1 Aug	+0.25
Ingot CP Grade 2 fob Rotterdam USD/kg (01 Sep)	\$/kg	10.90	11.30	1 Aug	+0.30
Slab CP Grade 1 fob Rotterdam USD/kg (01 Sep)	\$/kg	11.50	12.00	1 Aug	+0.20
Slab CP Grade 2 fob Rotterdam USD/kg (01 Sep)	\$/kg	11.00	11.50	1 Aug	+0.20
Slag min 92% TiO ₂ ex-works China	Yn/t	9,400	9,500	15 Sep	-50
Sponge 99.7% Ti ex-works China	Yn/t	75,000	78,000	15 Sep	nc
Sponge 99.6% Ti ex-works China	Yn/t	74,000	77,000	15 Sep	nc
Sponge TG-Tv 10x30mm du Rotterdam	\$/kg	9.20	11.00	15 Sep	nc
Tetrachloride min 99.9% TiCl ₄ ex-works China	Yn/t	8,300	8,700	15 Sep	nc

Weekly US price assessments							
Metal	Unit	21 Sep	High	±	14 Sep	High	±
		Low			Low		
Electronic metals							
Bismuth							
Bismuth Ingot min 99.99% fob US warehouse (20 Sep)	\$/lb	4.15	4.65	-0.42	4.70	4.95	+0.45
Indium							
Ingot min 99.99% fob US warehouse (20 Sep)	\$/kg	235.00	250.00	nc	235.00	250.00	-2.50
Selenium							
Selenium min 99.5% fob US warehouse (20 Sep)	\$/lb	10.00	11.00	nc	10.00	11.00	nc
Tantalum							
Scrap 99.9% vacuum melted del US consumer (20 Sep)	\$/lb	165.00	175.00	-2.50	165.00	180.00	nc
Tellurium							
Min 99.95% fob US warehouse (20 Sep)	\$/kg	60.00	75.00	nc	60.00	75.00	-2.50
Battery metals price assessments							
Antimony							
Min 99.65% cif US (20 Sep)	\$/lb	6.000	6.350	nc	6.000	6.350	nc
Cadmium							
Min 99.99% fob US warehouse (20 Sep)	\$/lb	1.80	1.90	nc	1.80	1.90	+0.15
Min 99.95% fob US warehouse (20 Sep)	\$/lb	1.75	1.80	nc	1.75	1.80	+0.15
Cobalt							
Min 99.8% fob US warehouse (20 Sep)	\$/lb	26.20	27.00	nc	26.20	27.00	+0.10
Light metals price assessments							
Magnesium							
Min 99.9% fob US warehouse (20 Sep)	\$/t	13,228	15,432	nc	13,228	15,432	nc
Manganese							
Electrolytic metal min 99.7% fob US warehouse (15 Sep)	\$/lb	2.45	2.85	nc	2.45	2.85	+0.88
Silicon							
5-5-3 min 98.5% Si fob US warehouse (20 Sep)	\$/lb	2.550	2.950	-0.2500	2.800	3.200	nc
5-5-3 min 98.5% Si fob US warehouse 90 days (20 Sep)	\$/lb	2.500	2.900	-0.2500	2.750	3.150	nc
Titanium							
Scrap 6Al 4V bulk weldable del US dealer/processor (15 Sep)	\$/lb	4.75	5.25	nc	4.75	5.25	nc
Scrap 6Al 4V clips del US dealer/processor (15 Sep)	\$/lb	3.00	3.30	nc	3.00	3.30	nc
Scrap grade CP1 solids del US dealer/processor (15 Sep)	\$/lb	4.40	4.60	nc	4.40	4.60	nc
Scrap grade CP2 solids del US dealer/processor (15 Sep)	\$/lb	3.65	4.25	-0.05	3.70	4.30	nc
Scrap grade CP3/4 solids del US dealer/processor (15 Sep)	\$/lb	3.45	3.65	-0.05	3.50	3.70	nc
Scrap 6Al 4V turnings aero quality del US processor (15 Sep)	\$/lb	4.00	4.75	nc	4.00	4.75	nc
High-temperature metals price assessments							
Molybdenum							
Oxide min 57% fob US warehouse (15 Sep)	\$/lb	16.600	16.700	+0.1500	16.400	16.600	nc

Monthly US price assessments							
Metal	Unit	31 Aug			29 Jul		
		Low	High	±	Low	High	±
Arsenic							
Min 99% fob US warehouse	\$/lb	1.95	2.15	nc	1.95	2.15	nc
Chromium							
(aluminothermic) fob US warehouse	\$/lb	6.75	7.25	-0.50	7.25	7.75	-1.12
Molybdenum							
Scrap 99.7% airmelt del US consumer	\$/lb	18.00	19.00	-0.75	18.50	20.00	-0.90
Scrap 99.9% pure vacuum del US processor	\$/lb	16.00	18.00	-1.00	17.00	19.00	-0.50
Niobium							
(columbium) scrap vacuum del US consumer	\$/lb	40.50	41.50	+1.50	39.00	40.00	-1.50
(columbium) scrap vacuum del US processor	\$/lb	32.50	33.50	+1.50	31.00	32.00	-4.50
Rhenium							
APR catalyst 69.4% fob US warehouse	\$/lb	400	430	nc	400	430	nc
99.9% fob US warehouse	\$/lb	500	550	nc	500	550	nc
Titanium							
6Al 4V ingot fob US producer	\$/lb	12.50	13.50	+0.50	11.50	13.50	+0.50
Tungsten							
99.9% min Chinese bar del US consumer	\$/lb	21.00	22.00	+0.25	21.00	21.50	+0.25
Carbide scrap inserts fob US processor	\$/lb	10.75	11.25	-0.50	11.25	11.75	-0.62
Carbide scrap rounds fob US processor	\$/lb	10.75	11.25	-0.50	11.25	11.75	-0.62
99.9% scrap solids consumer price fob US processor	\$/lb	20.00	22.00	+0.50	20.00	21.00	-1.00
99.9% scrap del US processor	\$/lb	17.00	19.00	+0.50	17.00	18.00	-1.00

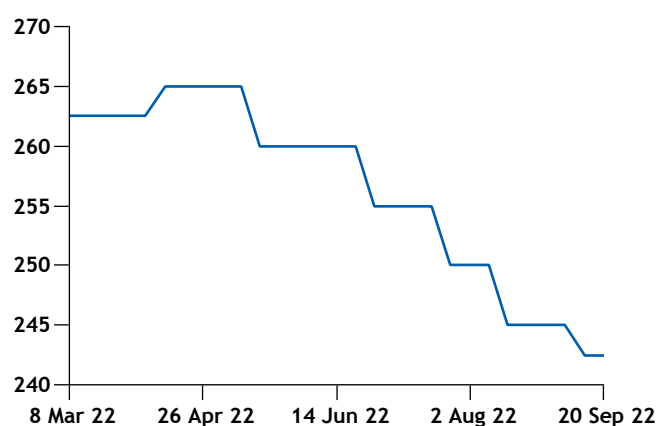
Bismuth ingot min 99.99% fob US warehouse

\$/lb



Indium ingot min 99.99% fob US warehouse

\$/kg



BASE METALS: MARKET COMMENTARY

US Al: Midwest premium slips

The Midwest premium for primary aluminum slipped another 1pc on Wednesday as long-term market fundamentals were supportive but entering the fourth quarter, a traditionally soft time, consumers were well supplied by contract tonnage and had access to ample scrap.

Argus dropped its assessment to 22.5-24.3¢/lb on Wednesday from 22.5-24.7¢/lb a week earlier, taking it to lows last seen in March 2021.

Argus, however, was aware of at least three brokers waiting on the sidelines, offering metal above prevailing spot prices, but none of them were able to clinch any deals just yet.

London Metal Exchange (LME) cash-to-three-month official contract spreads have moved solidly back into contango since the second week of the month, closing at a contango of \$27/t on Wednesday. This allows traders unwilling to sell metal at a lower Midwest premium to cover their cost of carry and wait until a wave of global smelter curtailments stabilizes or raises the premium as is expected by many to happen early next year.

High electricity prices in the US and Europe have called the profitability of large swaths of smelting capacity into question since the first quarter. But backed up contract obligations and a potential economic slowdown, as interest rates rise, could overshadow tight supply in the next few months.

The Argus daily used beverage can (UBC) price fell by 2pc on Wednesday to 18-month lows of 74-76.5¢/lb delivered US mill, going down with the LME.

Europe Al: Billet premiums stabilise near floor

European aluminium billet premiums stabilised over the past week after falling sharply through September so far, as premiums neared the cost of production for a number of producers even with premiums at current elevated levels compared to before the Covid-19 pandemic.

The Argus weekly assessments for aluminium 6063 billet premiums delivered to Italy and Germany both remained at \$1,000-1,050/t on Wednesday 21 September, while the in-warehouse Rotterdam premium stayed at \$950-1,000/t.

Billet premiums were below \$400/t at the start of the pandemic, but the price floor for billet producers has risen exponentially since then, with huge power costs the latest influence on high premiums. Traders said recently that billet producers in Europe this year would require a minimum premium of around \$900-950/t to breakeven.

Even so, some billet producers in Europe are happy to see premiums fall further.

Aluminium						
	Unit	Date of assessment	Low	High	±	
Premiums						
P1020 US midwest premium	\$/lb	21 Sep	0.2250	0.2430	-0.0020	
P1020 US midwest premium monthly avg	\$/lb	31 Aug	0.2517	0.2683	-0.0334	
P1020 US midwest transaction	\$/lb	21 Sep	1.2179	1.2368	-0.0271	
6061 billet US premium	\$/lb	21 Sep	0.2400	0.2600	nc	
6063 billet del US premium	\$/lb	21 Sep	0.2300	0.2500	nc	
6063 billet del US transaction	\$/lb	21 Sep	1.4479	1.4868	-0.0271	
6063 extrusion premium billet del Italy	\$/t	21 Sep	1,000	1,050	nc	
6063 extrusion premium billet del Germany	\$/t	21 Sep	1,000	1,050	nc	
6063 extrusion duty paid premium in-warehouse Rotterdam	\$/t	21 Sep	950	1,000	nc	
P1020 duty paid 3-month premium in-warehouse Rotterdam	\$/t	21 Sep	425	475	nc	
P1020 duty paid premium cif Japan forward quarter	\$/t	1 Jul	148	148	na	
P1020 duty paid spot premium in-warehouse Rotterdam	\$/t	21 Sep	425	475	nc	
P1020 duty unpaid 3-month premium in-warehouse Rotterdam	\$/t	21 Sep	325	375	nc	
P1020 duty unpaid spot premium in-warehouse Rotterdam	\$/t	21 Sep	325	375	nc	
Aluminium-alloy die castings 12 ADC12 cif Japan	\$/t	15 Sep	2,300	2,350	nc	
Copper concentrates TC/RCs, cif China						
	Unit	Timing	Assessment		±	
Smelter purchase treatment charges	\$/dm ^{tu}	16 Sep	81.90		0.70	
Smelter purchase refining charges	€/lb	16 Sep	8.19		0.07	
Trader purchase treatment charges	\$/dm ^{tu}	16 Sep	66.90		0.70	
Trader purchase refining charges	€/lb	16 Sep	6.69		0.07	
Averages						
Smelter purchase Treatment charges MTD	\$/dm ^{tu}	16 Sep	80.93		0.48	
Smelter purchase Treatment charges monthly average	\$/dm ^{tu}	August	77.05		4.81	
Smelter purchase Refining charges MTD	€/lb	16 Sep	8.09		0.04	
Smelter purchase Refining charges monthly average	€/lb	August	7.71		0.49	
Trader purchase treatment charges MTD	\$/dm ^{tu}	16 Sep	66.90		0.70	
Trader purchase treatment charges monthly average	\$/dm ^{tu}	August	64.60		2.40	
Trader purchase refining charges MTD	€/lb	16 Sep	6.69		0.07	
Trader purchase refining charges monthly average	€/lb	August	6.46		0.24	

"We're coming close to the floor but I think that's a good thing," one said. Europe is still an attractive market and bil-

BASE METALS: MARKET COMMENTARY

lets are coming here from all over the world. At some point, premiums need to fall to discourage imports.”

Trade has been quiet this week with a number of industry events over the past seven days to keep traders busy. Sentiment at these events has been bearish due to the power crisis and destruction of demand across aluminium markets in Europe.

“There was no talk of metal or prices last week. Mostly it was just about energy costs,” a trader said.

Ingot premiums were also flat this week but are expected to fall back in the coming weeks on lower demand. Ingot premiums have been stable as billet premiums have fallen this month on a lack of business and trade has not yet increased going into the fourth quarter. But with pressure to fall it is likely that they will do so when activity resumes.

The Argus weekly assessment for duty-paid P1020 ingot premium in-warehouse Rotterdam remained at \$425-475/t on Wednesday, , while duty unpaid premiums stayed at \$325-375/t.

London Metal Exchange (LME) aluminium prices have gradually trended down thorough the past week. The three-month LME aluminium contract settled at \$2,218/t in today's official session, moving from \$2,244/t a week previously.

US Cu: Demand and premiums unchanged

US grade A copper cathode premiums were flat for the week despite tepid spot demand and warehouse stockpiles inching higher.

Argus assessed grade A copper cathode premiums at 9-11¢/lb delivered Midwest, holding for the week as a subdued spot market remained in play while cathode warehouse stocks improved for the week.

Supply tightness eased as Comex (CME), London Metal Exchange (LME) and Shanghai Futures Exchange (SHFE) copper warehouse totals settled at 199,579t on Wednesday, 6.8pc higher week on week but down by 41pc from a year earlier.

The LME copper cathode warehouse total rose by over 10pc on Wednesday to 118,000t. While the upward movement set the highest total since 31 August, cancelled warrants, cathodes earmarked for shipment, at 11,875t was at its lowest on Wednesday since 1 July.

CME copper stocks continued to leak lower on Wednesday. Stockpiles have fallen every day since 22 June. with Wednesday's settlement at 45,714t or its lowest level since 5 August, 2021.

Weekly SHFE stocks on warrant settled 1.4pc lower on Friday at 35,865t and were 34pc lower than a year earlier.

Copper cathodes and brass

	Unit	Timing	Low	High	±
Copper cathode premiums					
Cathode grade A del US midwest	\$/lb	21 Sep	0.0900	0.1100	nc
Cathode grade A del US midwest transaction	\$/lb	21 Sep	3.6020	3.6220	-0.0360
Cathode grade A in-warehouse Rotterdam	\$/t	20 Sep	70.00	100.00	nc
Cathode grade A del southern Europe	\$/t	20 Sep	170.00	200.00	nc
Brass/bronze alloys del US					
C89833	\$/lb	15 Sep	4.4200	4.5200	+0.0700
C89836	\$/lb	15 Sep	4.4700	4.5700	+0.0700

Nickel

	Unit	Timing	Low	High	±
Europe					
Briquette min 99.8% in-warehouse Rotterdam	\$/t	15 Sep	850.00	900.00	-50.00
Cathode 4x4inch premium in-warehouse Rotterdam	\$/t	15 Sep	900.00	1,400.00	+150.00
Cathode full plate premium in-warehouse Rotterdam	\$/t	15 Sep	550.00	650.00	+100.00
Cathode full plate in-warehouse Rotterdam transaction	\$/t	21 Sep	25,400.00	25,510.00	+115.00
Cathode 4x4 in-warehouse Rotterdam transaction	\$/t	21 Sep	25,750.00	26,260.00	+115.00
Briquette in-warehouse Rotterdam transaction	\$/t	21 Sep	25,700.00	25,760.00	+115.00
US					
Cathode 4x4inch premium (small lots) del US	\$/lb	15 Sep	1.40	1.60	nc
Cathode 4x4inch premium (truckloads) del US	\$/lb	15 Sep	1.40	1.60	nc
Cathode 4x4inch (truckloads) del US transaction	\$/lb	21 Sep	12.6763	12.8763	+0.0499
Cathode 1x1inch premium (small lots) del US	\$/lb	15 Sep	1.75	2.00	nc
Cathode 1x1inch premium (truckloads) del US	\$/lb	15 Sep	1.75	2.00	nc
China					
Metal min 99.9% Ni ex-warehouse China	Yn/t	21 Sep	198,550	199,550	+3,000
Cathode full plate premium cif Shanghai	\$/t	15 Sep	300	350	nc
Sulphate min 22% ex-works China excl. VAT USD/t	\$/t	21 Sep	4,794.05	4,920.21	nc
Nickel Sulphate min 22% ex-works China	Yn/t	21 Sep	38,000	39,000	nc
Nickel sulphate min 22% cif China	\$/t	21 Sep	4,600	4,800	nc

Zinc

	Unit	Timing	Low	High	±
Special high grade in-warehouse Rotterdam premium	\$/t	20 Sep	420.00	480.00	nc
Special high grade del US premium	\$/lb	19 Sep	0.4000	0.4400	nc
Special high grade del US transaction	\$/lb	21 Sep	1.8207	1.8607	-0.0315

Lead

	Unit	Timing	Low	High	±
Ingot primary 99.97% premium del US	\$/lb	20 Sep	0.1800	0.2200	+0.0025
Ingot primary 99.97% del US transaction	\$/lb	21 Sep	1.0178	1.0578	-0.0122

BASE METALS: MARKET COMMENTARY

Aluminium LME 3 months official

\$/t



Copper LME 3 months official

\$/t



Metal futures: Markets lower ahead of Fed

Base metal prices on the London Metal Exchange (LME) were broadly lower in Wednesday's official morning session on pressure from US dollar strength, macroeconomic concerns and geopolitical tensions as investors looked towards a decision from the US Federal reserve.

Aluminum was the biggest mover on Wednesday, with the three-month LME contract falling by 2.1pc to \$2,218/t.

The three-month LME copper contract fell by 0.6pc to \$7,710.50/t, while Comex's Next most active month copper contract dropped by 1pc to \$3.47/lb.

LME on-warrant copper stocks climbed by 11.8pc to 106,125t, their highest level since 2 August.

Markets looked forward to the Federal Open Market Committee's interest rate decision following the end of LME trading. The Federal Open Market Committee raised its federal funds rate to a range of **3-3.25pc from 2.25-2.5pc** and said it "anticipates" further increases in the target range would be "appropriate". The rate hike was the Fed's third such increase in four months and followed a half point hike in May and a quarter point increase in March.

The three-month LME nickel contract edged higher by 0.3pc to \$24,905/t.

Global equities were mostly mixed throughout trading. In Asia, the Nikkei and Hang Seng closed 1.4pc and 1.8pc lower, respectively. In Europe, the German DAX gained 0.8pc as London's FTSE 100 rose by 0.6pc in the afternoon. Meanwhile in the US, the S&P 500 edged 0.2pc higher while the Dow Jones Industrial average was almost unchanged during midday trading.

WTI, the US crude benchmark, dropped by 1.8pc to \$82.94/bl.

Tin LME 3 months official

\$/t



Strength in the US dollar continues to impact metal price movement, as it makes purchasing more expensive in other currencies. The US dollar index, which measures the currency against a basket of others, was trading at 110.500 at the end of the LME morning session, moving from 109.860 at the same time on Tuesday.

Geopolitical tensions further stirred again this week after Russia's president Vladimir Putin **announced a partial mobilisation** in an address to the nation.

Three-month LME lead fell by 1.5pc to \$1,870/t, and three-month LME zinc decreased by 1.7pc to \$3,127/t.

The three-month LME tin contract rose by 1.2pc to \$21,355/t.

The standard LME aluminum alloy contract was unchanged at \$1,760/t as the North American aluminum alloy contract dipped by 1.1pc to \$2,500/t.

FERRO ALLOYS: NEWS AND ANALYSIS

RMI suspends conflict mineral audits in Russia

The Responsible Minerals Initiative (RMI) has suspended conflict mineral audits in Russia with immediate effect, which could diminish already-low international buying interest in the country's tungsten products and spur additional demand for Chinese alloys.

RMI is an independent organisation that verifies whether smelters and processors source conflict-free materials through its responsible minerals assurance programme (RMAP) audits. The decision to stop audits could deter consumers from buying Russian products.

Conflict minerals – as defined by EU and US legislation – include the metals tantalum, tin, tungsten and gold, which are extracted from the minerals cassiterite, columbite-tantalite and wolframite, respectively. RMI also audits cobalt.

The suspension of assessments will impact auditees on the 'conformant' list, namely companies meeting RMAP standards, and the 'active' list, which includes smelters engaged in the process, but for which a conformance determination has yet to be made.

This is a particular concern for consumers of Russian ferro-tungsten as there are three Russian smelters on the active list and two on the conformant list.

One cobalt refiner is included, but most Russian cobalt exports have been diverted to other parts of the world since the beginning of the war in Ukraine, so market participants do not expect an immediate impact on trade flows or prices.

Active or conformant Russian auditees that have passed the one-year mark for an assessment and did not receive a reassessment and determination letter confirming conformance by 1 September 2022 will be removed by 30 September 2022.

Any conformant auditees that pass the one-year mark after 1 October 2022 will be removed from the conformant list on 31 January 2023.

RMAP standards are not legally enforceable, but influence consumers' buying decisions.

One Russian producer told *Argus* that because end-users have been reluctant to buy Russian material, sales of Russian tungsten oxide have already come to a halt in Europe. It added that it still exports tungsten carbide, tungsten concentrate and ferro-tungsten, but is planning to move its tungsten processing operations outside Russia. "The situation is getting worse, and I estimate that there will be zero supply of tungsten from Russia by the end of the year," it said.

Market participants are attempting to gauge the impact on the ferro-tungsten market, which is likely to become clear during the next round of term contract negotiations, when many consumers might require evidence of responsible sourcing like that provided by the RMAP audit.

"There was a lot of uncertainty with consumers as [to whether or not] they should touch Russian ferro-tungsten,... this decision will make things clearer," a European trader said.

There has been no clear impact on spot prices yet, with Europe's ferro-tungsten market steady yesterday at \$36.50-39.50/kg duty unpaid. Most market participants say the measure will make it more difficult for some Russian ferro-tungsten producers to sell in Europe and could generate more demand for Chinese ferro-tungsten.

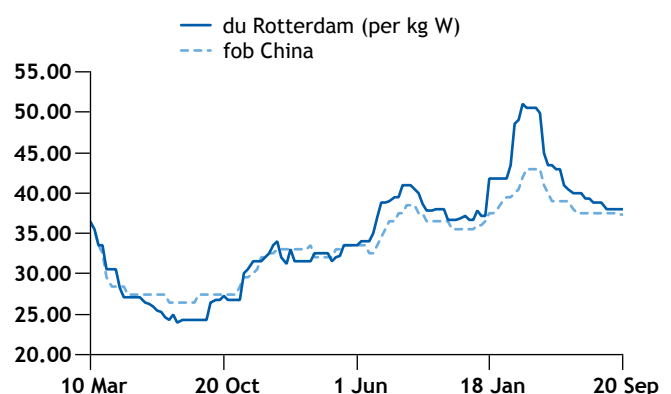
"I don't think much material has been coming from Russia in the last few months anyway, and other Russian materials are sold as Chinese, although the impurities show clearly that the material is typical Russian production. In the short term, this could lead to a price increase, but the weaker tungsten market in China could lead to more exports," the same trader added.

Other sources expect shifts in trade flows, as material could be diverted to third countries such as Japan.

By Cristina Belda and Sian Morris

Ferro-tungsten 75% fob China v Europe

\$/kg



For more news and analysis, please [click here](#)

Twice-weekly bulk alloy and feedstock prices							
Market	Unit	21 Sep		± 15 Sep	15 Sep		± 13 Sep
		Low	High		Low	High	
Ferro-chrome							
HC basis 60-64.99% Cr 6-8% C ddp NWE	\$/lb Cr	1.15	1.45	+0.02	1.15	1.40	nc
HC min 65% Cr 6-8% C ddp NWE	\$/lb Cr	2.15	2.50	nc	2.15	2.50	nc
LC Cr min 65% 0.10% C ddp Europe works	\$/lb Cr	3.22	5.05	-0.10	3.22	5.25	nc
LC 60-64.99% Cr. 0.10pc C ddp Europe works (per lb Cr)	\$/lb Cr	2.75	3.00	nc	2.75	3.00	-0.07
HC 50% Cr ex-works China	Yn/t	7,900	8,000	nc	7,900	8,000	+100
HC 50% Cr ex-works China USD/lb	\$/lb	0.90	0.91	0	0.90	0.92	+0
HC min 60% Cr ex-works India	Rs/t	95,000	96,000	+3,000	92,000	93,000	-1,000
Charge chrome 50-55% Cr 6-10% C cif China	\$/lb	0.91	0.92	+0.07	0.84	0.86	nc
HC Indian 60-62% Cr 6-10% C cif China	\$/lb	0.90	0.92	+0.06	0.83	0.86	nc
HC Kazakh 65-70% Cr 6-8% C cif China	\$/lb	1.12	1.14	+0.07	1.05	1.08	nc
Chrome ore							
Ore South African concentrate 42-44% Cr ₂ O ₃ cif China	\$/t	230	240	+5	225	235	+5
Ore South African concentrate 42-44% Cr ₂ O ₃ fca China	Yn/mtu	46.00	47.00	+1.00	45.00	46.00	+1.00
Ore Turkish lump 40-42% cif China	\$/t	280	285	+10	270	275	nc
Ore Turkish lump 40-42% fca China	Yn/mtu	55.00	56.00	+1.00	54.00	55.00	+1.00
Ore South African UG2 concentrate 40-42% Cr ₂ O ₃ cif China main ports	\$/t	210	220	+8	205	210	+5
Ore South African UG2 concentrate 40-42% Cr ₂ O ₃ fca China ports	Yn/mtu	45.00	46.00	+1.00	44.00	45.00	+1.00
Ferro-manganese							
HC Mn 78% ddp Europe works	€/t	1,140	1,240	nc	1,140	1,240	-45
HC 65% Mn ex-works China	Yn/t	6,450	6,650	+50	6,400	6,600	nc
HC 75% Mn ex-works China	Yn/t	7,550	7,750	+50	7,500	7,700	nc
HC min 65-70% Mn ex-works India	Rs/t	73,000	74,000	nc	73,000	74,000	-2,000
HC min 70-75% Mn ex-works India	Rs/t	76,000	77,000	nc	76,000	77,000	-2,000
Manganese ore							
Ore 44-46% lumpy ore fca China	Yn/mtu	44.00	47.00	+0.75	43.50	46.00	nc
Silico-manganese							
65% Mn ddp Europe works	€/t	1,130	1,250	+5	1,130	1,240	-35
65% Mn 17% Si ex-works China	Yn/t	7,000	7,200	+75	6,950	7,100	nc
60% Mn 14% Si ex-works India	Rs/t	73,000	74,000	nc	73,000	74,000	-1,000
65% Mn 15% Si fob India East Coast	\$/t	1,030	1,040	nc	1,030	1,040	-5
60% Mn 14% Si fob India East Coast	\$/t	930	940	nc	930	940	-20
Ferro-silicon							
75% Si ddp NWE	€/t	2,250	2,400	nc	2,250	2,400	-50
72% Si fob China	\$/t	1,570	1,620	nc	1,570	1,620	nc
72% Si ex-works China	Yn/t	7,600	7,800	+50	7,600	7,700	nc
75% Si fob China	\$/t	1,650	1,700	nc	1,650	1,700	nc
75% Si ex-works China	Yn/t	8,000	8,200	+50	8,000	8,100	nc
Low aluminium 75% Si 0.1% Al fob China	\$/t	1,860	1,880	nc	1,860	1,880	nc
Low aluminium 75% Si 0.5% Al fob China	\$/t	1,760	1,780	nc	1,760	1,780	nc
75% Si ex-works India	Rs/t	141,000	143,000	-2,000	143,000	145,000	nc

* Quarterly benchmark price

Twice-weekly noble-alloy and feedstock prices							
	Unit	21 Sep		± 15 Sep	15 Sep		± 13 Sep
		Low	High		Low	High	
Ferro-molybdenum							
65-70% Mo dp Rotterdam	\$/kg Mo	42.00	42.30	nc	42.00	42.30	+1.95
60% Mo fob China	\$/kg	45.90	46.40	nc	45.90	46.40	+0.90
60% Mo ex-works China	Yn/t	194,000	198,000	+1,000	193,000	197,000	+3,000
60% Mo ex-works India	Rs/kg	2,220	2,250	nc	2,220	2,250	nc
Ferro-niobium							
min 65% Nb du Rotterdam	\$/kg Nb	44.50	46.50	nc	44.50	46.50	nc
Ferro-tungsten							
min 75% W du Rotterdam	\$/kg W	36.50	39.50	nc	36.50	39.50	nc
Ferro-titanium							
Russian min 70% Ti du Rotterdam	\$/kg Ti	7.50	8.00	nc	7.50	8.00	-0.25
min 70% Ti dp/duty-free Rotterdam	\$/kg Ti	8.40	10.00	nc	8.40	10.00	+0.20
UK min 70% Ti ex-works	\$/kg Ti	10.00	11.00	nc	10.00	11.00	nc
Titanium							
Turnings 90/6/4 max 0.5% Sn ddp UK	\$/lb	2.00	2.30	nc	2.00	2.30	nc
Ferro-vanadium							
78-82% V dp Rotterdam	\$/kg V	30.75	31.50	nc	30.75	31.50	nc
50% V ex-works China	Yn/t	128,000	131,000	+500	128,000	130,000	+1,000
80% V fob China	\$/kg	29.50	30.70	nc	29.50	30.70	-0.40
50% V ex-works India	Rs/kg	1,450	1,500	nc	1,450	1,500	-50
Vanadium-nitrogen alloy							
Vanadium-nitrogen alloy 77% V 18% N ex-works China	Yn/t	179,000	182,000	+500	178,000	182,000	+1,000
Twice-weekly nickel prices							
Market	Unit	21 Sep		± 15 Sep	15 Sep		± 13 Sep
		Low	High		Low	High	
Nickel							
Ore min 1.8% Ni fca China	Yn/wmt	840	860	nc	840	860	nc
Pig iron min 10% ex-works China	Yn/mtu	1,300	1,320	+20.0	1,280	1,300	+10.0
Monthly price assessments							
Market	Unit	Latest		±	Previous		
		Low	High		Low	High	
Ferro-boron							
17% B fob US warehouse	\$/lb	2.95	3.10	nc	2.95	3.10	
Ferro-chrome							
Charge chrome fob US warehouse	\$/lb	2.55	2.60	-0.05	2.60	2.65	
Ferro-manganese							
MC 80% Mn 1-2% C fob North America warehouse	\$/lb	2.05	2.10	-0.48	2.50	2.60	
Ferro-niobium							
65% Nb fob US warehouse	\$/lb	21.35	21.75	nc	21.35	21.75	
Ferro-tungsten							
75% W fob North America warehouse	\$/lb	21.00	22.00	-1.40	22.40	23.40	
Cobalt-Nickel							
Nickel-Cobalt refinery scrap nickel contained del US processor	\$/lb	4.75	5.00	+0.05	4.65	5.00	
Chrome Ore							
Ore Cr ₂ O ₃ 48-49.99% (South Kaliapani mines) OMC price ex-works India	Rs/t	14,487	14,487	-596	15,083	15,083	
Ore Cr ₂ O ₃ 50-52% (Sukrangi mines) OMC price ex-works India	Rs/t	14,504	14,504	-708	15,212	15,212	

Weekly price assessments						
Market	Unit	15 Sep			8 Sep	
		Low	High	±	Low	High
Ferro-chrome						
HC min 62% Cr 6-8% C fob US warehouse	\$/lb Cr	3.30	3.40	nc	3.30	3.40
LC min 65% Cr 0.05% C max 1.5% Si fob US warehouse	\$/lb Cr	6.15	6.25	nc	6.15	6.25
LC min 65% Cr 0.10% C max 1.5% Si fob US warehouse	\$/lb Cr	4.25	4.50	nc	4.25	4.50
LC 60% Cr 0.15% C fob US warehouse	\$/lb	4.00	4.25	nc	4.00	4.25
Ferro-manganese						
HC 75% fob China (20 Sep)	\$/t	1,370	1,400	nc	1,370	1,400
HC min 80% Mn 6-8% C fob North America warehouse	\$/lt	1,950	2,050	nc	1,950	2,050
MC 78% Mn 1.5-2% C 0.15-0.20 P ddp Europe works (20 Sep)	€/t	1,900	2,140	+20	1,900	2,100
Manganese ore						
Ore 36-38% Mn cif China	\$/dmtu	4.45	4.55	nc	4.45	4.55
Ore 48-50% Mn cif China	\$/dmtu	5.75	5.85	nc	5.75	5.85
Ore 44-46% Mn cif China	\$/dmtu	5.95	6.05	nc	5.95	6.05
Silico-manganese						
65% Mn 17% Si fob China (20 Sep)	\$/t	1,290	1,320	nc	1,290	1,320
min 65% Mn 16% Si fob North America warehouse	\$/lb	1.13	1.17	nc	1.13	1.17
Ferro-silicon						
min 75% Si max 0.1% C fob US warehouse	\$/lb Si	1.900	2.050	nc	1.900	2.050
Calcium-silicon						
min 28% Ca 55-60% Si fob China	\$/t	1,820	1,870	-50	1,870	1,920
min 28% Ca 55-60% Si ex-works China	Yn/t	12,100	12,600	-200	12,300	12,800
min 30% Ca 55-60% Si fob China	\$/t	1,850	1,900	-50	1,900	1,950
min 30% Ca 55-60% Si ex-works China	Yn/t	12,300	12,800	-200	12,500	13,000
Ferro-molybdenum						
min 65% Mo max 1.5% Si fob North America warehouse	\$/lb Mo	19.000	20.000	nc	19.000	20.000
Ferro-niobium						
min 66% Nb Brazilian Imports fca China port (20 Sep)	Yn/t	215,000	220,000	nc	215,000	220,000
Ferro-tungsten						
75% W ex-works China (20 Sep)	Yn/t	175,500	177,500	nc	175,500	177,500
min 75% W fob China (20 Sep)	\$/kg	36.80	37.80	nc	36.80	37.80
Ferro-titanium						
30% Ti ex-works China (20 Sep)	Yn/t	12,200	12,500	nc	12,200	12,500
70% scrap grade ex-works China (20 Sep)	Yn/t	29,000	31,500	nc	29,000	31,500
70% Ti fob North America warehouse	\$/lb	3.80	4.60	-0.57	4.55	4.98
Titanium						
Scrap min 85% Ti tin-bearing mixed turnings del US dealer/processor	\$/lb	1.50	1.70	nc	1.50	1.70
Scrap min 85% Ti non-tin-bearing mixed turnings del US dealer/processor	\$/lb	1.55	1.70	nc	1.55	1.70
Ferro-vanadium						
78-82% V max 1.5% Si fob North America warehouse	\$/lb V	18.50	19.00	nc	18.50	19.00
Nickel						
Ore min 1.8% Ni fca China (21 Sep)	Yn/wmt	840	860	nc	840	860
Stainless steel						
Stainless steel scrap 304 (18-8) solids cif Rotterdam	\$/lb	0.544	0.589	+0.001	0.543	0.588
Stainless steel scrap 304 (18-8) solids cif Japan	\$/lb	0.54	0.55	nc	0.54	0.55
Stainless steel scrap 304 (18-8) solids cif South Korea	\$/lb	0.60	0.62	-0.02	0.60	0.65
Stainless steel scrap 304 (18-8) solids cif Taiwan	\$/lb	0.57	0.59	+0.02	0.55	0.57
Stainless steel scrap 409/410 solids del US processor	\$/lt	358	403	nc	358	403
Stainless steel scrap 430 solids del US processor	\$/lt	470	493	nc	470	493

Current week prices in full						
China export and delivered Europe prices						
Element	units	Date	Low	High	± Date	±
Cerium						
Carbonate min 45% REO fob China	\$/kg	1 Sep	0.40	0.50	1 Aug	-0.10
Metal min 99.9% C 0.03% max. Fe 0.2% max fob China	\$/kg	21 Sep	7.20	7.40	15 Sep	nc
Metal min 99% fob China	\$/kg	21 Sep	6.20	6.50	15 Sep	nc
Oxide 99.5-99.9% fob China	\$/t	21 Sep	1,350	1,400	15 Sep	nc
Oxide 99.5-99.9% cif Europe	\$/kg	1 Sep	2.10	2.40	1 Aug	-0.20
Dysprosium						
Metal min 99% fob China	\$/kg	21 Sep	410	417	20 Sep	+1
Dysprosium oxide min 99.5% fob China	\$/kg	21 Sep	314	319	20 Sep	+1
Oxide min 99.5% cif Europe	\$/kg	1 Sep	330	360	1 Aug	-40
Europium						
Metal min 99.9% fob China	\$/kg	20 Sep	265	275	13 Sep	nc
Oxide min 99.99% fob China	\$/kg	20 Sep	25.50	28.50	13 Sep	nc
Erbium						
Oxide min 99.5% cif Europe	\$/kg	1 Sep	50.00	55.00	1 Aug	-7.00
Ferro-dysprosium						
min 80% Dy fob China	\$/kg	21 Sep	312	317	20 Sep	+1
Gadolinium						
Metal min 99% fob China	\$/kg	21 Sep	78.00	84.00	20 Sep	-2.00
Oxide min 99.99% fob China	\$/t	21 Sep	52,500	55,500	20 Sep	-2,000
Oxide min 99.999% fob China	\$/t	21 Sep	58,000	62,000	15 Sep	+11,700
Holmium						
Oxide min 99.5% fob China	\$/t	21 Sep	88,500	93,500	20 Sep	nc
Lanthanum						
Metal min 99% fob China	\$/kg	21 Sep	6.00	6.30	15 Sep	nc
Metal min 99.9% C 0.03% max. Fe 0.2% max fob China	\$/kg	21 Sep	7.20	7.40	15 Sep	nc
Oxide 99.5-99.9% fob China	\$/t	21 Sep	1,300	1,350	15 Sep	nc
Oxide min 99.999% fob China	\$/kg	21 Sep	7.10	7.30	15 Sep	nc
Lutetium						
Oxide min 99.99% fob China	\$/kg	20 Sep	820	835	13 Sep	nc
Mischmetal						
35% La 65% Ce fob China	\$/kg	20 Sep	6.00	6.30	13 Sep	nc
Low Zn and Mg fob China	\$/kg	1 Sep	24	27	1 Aug	-9
Neodymium						
Metal min 99% fob China	\$/kg	21 Sep	125.00	127.00	20 Sep	-4.00
Oxide 99.5-99.9% fob China	\$/t	21 Sep	102,000	104,000	20 Sep	-3,000
Metal 99% cif Europe	\$/kg	1 Sep	126.00	142.00	1 Aug	-37.00
Oxide 99.5-99.9% cif Europe	\$/kg	1 Sep	105.00	125.00	1 Aug	-25.00
Praseodymium						
Metal min 99% fob China	\$/kg	21 Sep	136.00	138.00	20 Sep	-4.00
Oxide 99.5-99.9% fob China	\$/t	21 Sep	100,000	102,000	20 Sep	-3,000
Praseodymium-Neodymium						
Metal min 99% fob China	\$/kg	21 Sep	108.00	110.00	20 Sep	-3.00
Praseodymium-Neodymium oxide min 99% fob China	\$/t	21 Sep	90,000	91,500	20 Sep	-4,000
Samarium						
Metal min 99% fob China	\$/kg	21 Sep	12.00	12.50	15 Sep	nc
Oxide min 99.5% fob China	\$/kg	21 Sep	2.30	2.55	15 Sep	nc
Terbium						
Metal min 99.9% fob China	\$/kg	21 Sep	2,340	2,360	20 Sep	nc
Oxide min 99.99% fob China	\$/kg	21 Sep	1,830	1,850	20 Sep	nc
Oxide min 99.99% cif Europe	\$/kg	1 Sep	1,900	2,000	1 Aug	-135
Ytterbium						
Oxide min 99.99% fob China	\$/t	20 Sep	11,300	13,500	13 Sep	nc
Yttrium						
Metal min 99.9% fob China	\$/kg	20 Sep	32.50	35.00	13 Sep	nc
Oxide min 99.999% fob China	\$/t	21 Sep	8,800	9,200	15 Sep	nc
Oxide 99.999% cif Europe	\$/kg	1 Sep	11.20	12.20	1 Aug	-0.30

China domestic ex-works prices						
Element	units	Date	Low	High	± Date	±
Cerium						
Carbonate min 45% REO ex-works	Yn/t	1 Sep	2,700	3,200	1 Aug	-500
Metal min 99.9% C 0.03% max. Fe 0.2% max ex-works	Yn/t	21 Sep	41,000	43,000	15 Sep	nc
Metal min 99% ex-works	Yn/t	21 Sep	29,000	30,000	15 Sep	nc
Oxide 99.5-99.9% ex-works	Yn/t	21 Sep	7,500	8,000	15 Sep	nc
Dysprosium						
Metal min 99% ex-works	Yn/kg	21 Sep	2,890	2,940	20 Sep	+30
Oxide min 99.5% ex-works	Yn/kg	21 Sep	2,210	2,230	20 Sep	+20
Erbium						
Oxide min 99.5% ex-works	Yn/t	21 Sep	240,000	250,000	15 Sep	nc
Europium						
Oxide min 99.99% ex-works	Yn/kg	20 Sep	175	185	13 Sep	nc
Ferro-dysprosium						
min 80% Dy ex-works	Yn/kg	21 Sep	2,190	2,210	20 Sep	+20
Ferro-gadolinium						
min 75% Gd ex-works	Yn/t	21 Sep	320,000	330,000	20 Sep	-10,000
Gadolinium						
Metal min 99% ex-works	Yn/t	21 Sep	540,000	570,000	20 Sep	-10,000
Oxide 99.5-99.9% ex-works	Yn/t	21 Sep	340,000	350,000	20 Sep	-10,000
Oxide min 99.99% ex-works	Yn/t	21 Sep	370,000	390,000	20 Sep	-10,000
Holmium						
Oxide min 99.5% ex-works	Yn/t	21 Sep	620,000	650,000	20 Sep	nc
Lanthanum						
Metal min 99% ex-works	Yn/t	21 Sep	28,000	29,000	15 Sep	nc
Metal min 99.9% C 0.03% max. Fe 0.2% max ex-works	Yn/t	21 Sep	41,000	43,000	15 Sep	nc
Oxide min 99.999% ex-works	Yn/t	21 Sep	40,000	42,000	15 Sep	nc
Oxide 99.5-99.9% ex-works	Yn/t	21 Sep	7,000	7,500	15 Sep	nc
Ce chloride min 45% REO ex-works	Yn/t	1 Sep	2,000	2,500	1 Aug	-500
Lutetium						
Oxide min 99.99% ex-works	Yn/kg	20 Sep	5,700	5,800	13 Sep	+100
Mischmetal						
35% La 65% Ce ex-works	Yn/t	20 Sep	28,000	29,000	13 Sep	nc
Low Zn and Mg ex-works	Yn/t	1 Sep	160,000	180,000	1 Aug	-60,000
Neodymium						
Metal min 99% ex-works	Yn/t	21 Sep	880,000	900,000	20 Sep	-20,000
Oxide 99.5-99.9% ex-works	Yn/t	21 Sep	720,000	730,000	20 Sep	-10,000
Praseodymium						
Metal min 99% ex-works	Yn/t	21 Sep	960,000	980,000	20 Sep	-20,000
Oxide 99.5-99.9% ex-works	Yn/t	21 Sep	710,000	720,000	20 Sep	-10,000
Praseodymium-Neodymium						
Metal min 99% ex-works	Yn/t	21 Sep	760,000	780,000	20 Sep	-20,000
Oxide min 99% ex-works	Yn/t	21 Sep	630,000	640,000	20 Sep	-30,000
Samarium						
Metal min 99% ex-works	Yn/t	21 Sep	85,000	88,000	15 Sep	nc
Oxide min 99.5% ex-works	Yn/t	21 Sep	16,000	18,000	15 Sep	nc
Terbium						
Metal min 99.9% ex-works	Yn/kg	21 Sep	16,250	16,350	20 Sep	nc
Oxide min 99.99% ex-works	Yn/kg	21 Sep	12,750	12,850	20 Sep	nc
Ytterbium						
Oxide min 99.99% ex-works	Yn/t	20 Sep	80,000	95,000	13 Sep	nc
Yttrium						
Metal min 99.9% ex-works	Yn/kg	20 Sep	220.00	235.00	13 Sep	nc
Oxide min 99.999% ex-works	Yn/t	21 Sep	60,000	62,000	15 Sep	nc

*Additional user fees apply for real-time LME and COMEX data



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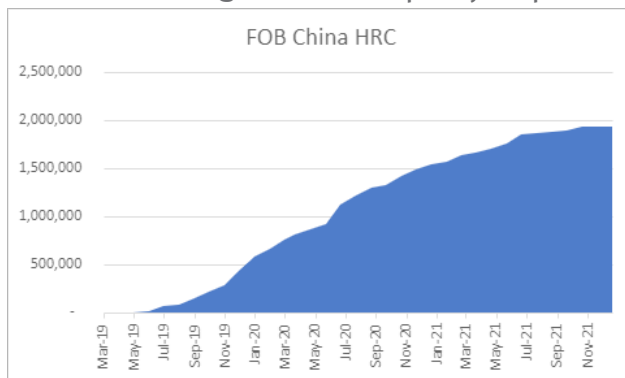
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