

## NEWS AND ANALYSIS

### Medical applications tapped as Ta growth sector

Delegates at the Tantalum and Niobium International Study Centre (TIC) annual general meeting (AGM) have identified multiple medical applications for tantalum technology as potential growth markets for the metal.

Tantalum products have potential applications in orthopaedic implants and as CT contrasting agents, TIC delegates heard at the organisation's AGM in Tokyo this week.

Dr Gordon Smith, chief technology officer at US-based tantalum product producer Global Advanced Metals (GAM), presented GAM's work with high purity tantalum powders, which are being used to produce orthopaedic implants including hip, knee, dental and spinal implants through additive manufacturing techniques.

Tantalum is more biocompatible than other materials used in orthopaedic implants and integrates better with a patient's bones. At present, 10pc of all medical implants are replaced with revision surgeries, usually due to slippage and poor bone-integration, and tantalum-based implants are being marketed as an anti-slippage solution to the medical implant industry.

The medical device market is niche, but it is an area of budding growth for tantalum, especially as an ageing population may prompt a need for more medical implants, Dr Smith told delegates.

Tantalum also has potential as a contrast agent in medical imaging, according to the University of California's Dr Benjamin Yeh and Dr Peter Bonitatibus, associate professor of chemistry at Rensselaer Polytechnic Institute. At present, most CT scans use iodine-based contrast agents, the same contrasting agent that has been used since the technology

## MARKETS

Minor Metals	3-17
Base Metals	18-20
Ferro-alloys	21-27
Rare Earths	28-32

## NEWS AND ANALYSIS

China in talks with EU over battery EV duty cuts	14
BYD launches Nanning Li carbonate plant	14
China's August EV output, sales rebound	15
China's battery output, installed volumes rise	15
Rare Earth Salts wins US funds for tb oxide	31
China's NRE rolls over Pr/Nd auction prices	31
China's January-August rare earth exports rise	31

## MARKETS

Key prices					
Market	Unit	Date	Low	High	±
<b>Minor metals</b>					
Antimony regulus trioxide grade min 99.65% Sb du Rotterdam	\$/t	10 Sep	26,000.00	27,000.00	+100.00
Gallium min 99.99% cif main airport	\$/kg	10 Sep	500.00	550.00	nc
Germanium min 99.999% fob China	\$/kg	10 Sep	2,430	2,530	nc
Hafnium min 99% max 0.5% Zr du Rotterdam	\$/kg	10 Sep	3,900.00	4,400.00	nc
Indium min 99.99% fob China	\$/kg	10 Sep	357.00	377.00	nc
Niobium ingot min 99.8% in-warehouse Rotterdam	\$/kg	2 Sep	93.00	97.00	nc
Rhenium APR min 69.4% Re (catalyst grade) dp Rotterdam (per kg Re)	\$/kg Re	10 Sep	1,600.00	1,800.00	+10.00
Silicon 5-5-3 min 98.5% Si fob China	\$/t	10 Sep	1,640	1,670	nc
Tantalite basis 25% Ta2O5 cif main port	\$/lb	10 Sep	76.00	80.00	+2
Titanium sponge TG-Tv 10x30mm du Rotterdam	\$/kg	10 Sep	5.50	6.00	nc
Titanium 6Al 4V ingot fob US producer	\$/lb	30 Aug	12.50	12.85	0
Tungsten APT fob China (per mtu WO3)	\$/mtu WO3	10 Sep	330	335	nc
<b>Battery metals</b>					
Cobalt hydroxide min 30% cif China	\$/lb	10 Sep	6.25	6.35	-0.05
Cobalt min 99.8% alloy grade du Rotterdam	\$/lb	10 Sep	14.75	16.25	nc
Graphite flake 95% min ex-works China	Yn/t	10 Sep	3,050.00	3,350.00	-50.00
Lithium carbonate min 99.5% cif China	\$/kg	10 Sep	9.00	9.50	nc
Manganese sulphate min 32% Mn battery grade ex works China	Yn/t	10 Sep	6,100	6,300	nc
Nickel sulphate min 22% cif China	\$/t	10 Sep	3,330	3,380	-45
<b>Rare Earths</b>					
Dysprosium oxide min 99.5% fob China	\$/kg	10 Sep	253.00	258.00	-7
Neodymium metal min 99% fob China	\$/kg	10 Sep	74.70	75.70	-2
Praseodymium oxide 99.5-99.9% ex-works China	Yn/t	10 Sep	427,000	430,000	-17,000
Praseodymium-Neodymium oxide min 99% fob China	\$/t	10 Sep	59,200	60,200	-2,800
Terbium oxide min 99.99% ex-works China	Yn/kg	10 Sep	6,000	6,100	-200
<b>Ferro-alloys</b>					
Ferro-chrome HC min 65% Cr 6-8% C ddp NWE (per lb Cr)	\$/lb Cr	10 Sep	1.5000	1.7000	nc
Ferro-molybdenum 60% Mo fob China	\$/kg	10 Sep	56.5000	57.0000	nc
Ferro-titanium 70% Ti fob North America warehouse	\$/lb	5 Sep	3.15	3.25	nc
<b>Base metals</b>					
Aluminium P1020 US midwest premium	\$/lb	4 Sep	0.19	0.20	nc
Copper grade A cathode premium cif Shanghai	\$/t	10 Sep	65	70	nc
Nickel briquette min 99.8% in-warehouse Rotterdam	\$/t	5 Sep	250.00	350.00	nc

NEWS AND ANALYSIS

was first deployed.

But tantalum oxide-based contrast agents have been found to produce clearer images than iodine-based agents in animal trials and could be used alongside iodine-based agents to create clearer and even colour images. Tantalum oxide-based agents also have the added benefits of taking longer to wash through a patient’s blood vessels, compared with iodine, giving radiologists more time to capture clear CT images.

The use of tantalum oxide-based contrast agents is expected to go to human trials in 2025 and could take 5-7 years to be approved for use in humans. But Dr Yeh noted that two-thirds of the iodine produced globally currently goes to medical applications and that wide adoption of tantalum oxide-based contrast agents could require substantial volumes of tantalum in the future.

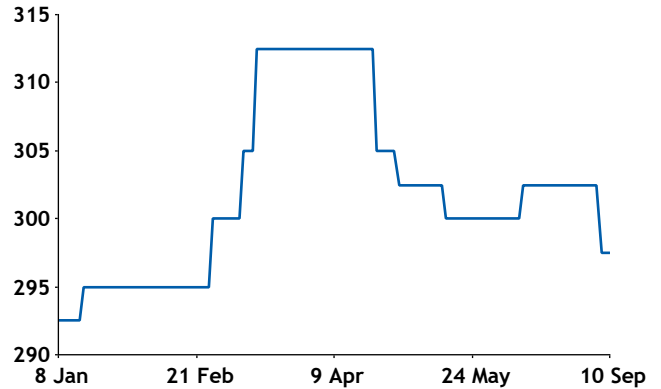
Medical applications are an exciting area of research and could be an important growth area for tantalum products in the future, TIC technical officer Ian Margerison told *Argus*. At present, the largest downstream market for tantalum is the capacitors used in electronics and data centres, as well as the super-alloy sector.

That said, tantalum has a history in the medical sector. Tantalum capacitors are already used in some electronic medical implants, including pacemakers and defibrillators. Tantalum capacitors improve the lifetime of these devices, compared with ceramic capacitors, reducing the need for risky battery replacement procedures, William Millman, director of consultancy Mines Minerals Metals and Markets, told *Argus*.

By Sian Morris

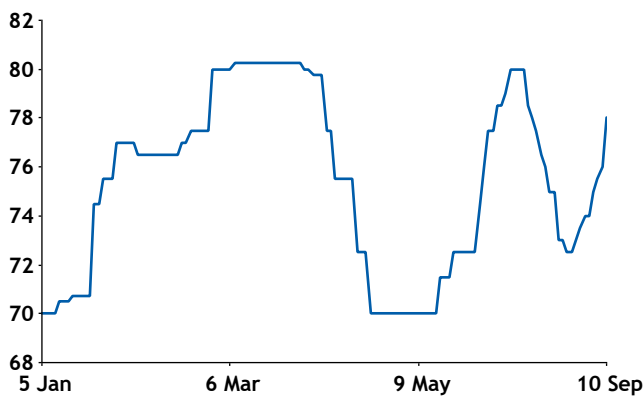
Tantalum min 99.8% du Rotterdam

\$/kg



Tantalite basis 25pc Ta2O5 cif main port

\$/lb



Black Mass Calculator

Estimate the intrinsic scrap value of different battery chemistries

Reference 6 pre-defined battery chemistries:

- LCO
- NCM523
- NCA
- NCM622
- NCM111
- NCM811

or define your own

Add costs, discounts and surcharges as required

Add alloy

Select alloy or add elements ...

PREDEFINED ELEMENTS

- + Aluminum Alloys
- Black Mass
  - LCO scrap
  - NCA scrap
  - NCM111 scrap
  - NCM523 scrap
  - NCM622 scrap
  - NCM811 scrap
- + Brass/Bronze

Click here to request access to Argus Battery Materials

view.argusmedia.com/batterymaterials

## MINOR METALS: CHINA MARKET COMMENTARY

### China minor metals: Ga, monazite prices rise

Gallium prices rebounded this week in response to an output halt at a major smelter. Lower supplies and higher demand from the downstream material market boosted monazite prices. Prices for key battery metals and materials cobalt, lithium and graphite extended falls owing to ample supplies and lower-than-expected demand during the traditional peak season of the industry.

### Antimony

The domestic market lost some ground today, as some sellers made price concessions to attract sales and generate cash. Domestic metal supplies may rise because export routes will be temporarily closed after 15 September when the Chinese government will implement its export controls.

Prices for 50pc grade antimony concentrate were assessed at Yn138,000-143,000/t ex-works today, down by Yn2,000/t from the assessment on 5 September. A possible increase in concentrate supplies from Russia, Thailand and Myanmar was likely to weigh on concentrate prices in the near term, according to market participants.

The range for 99.65pc grade metal fell by Yn1,000/t to Yn159,000-161,000/t ex-works, with the prices for 99.85pc grade narrowing to Yn161,000-162,000/t ex-works from Yn161,000-163,000/t ex-works during the same period. Some metal suppliers cut prices to reduce stocks, as they were worried about a potential rise in domestic supplies caused by export controls. Some others maintained offers at around Yn162,000/t because they received sufficient orders for delivery in October.

Argus-assessed prices for 99.8pc grade trioxide narrowed to Yn140,000-141,000/t ex-works today from Yn140,000-142,000/t ex-works on 5 September, as reduced demand from the downstream plastic and rubber industry was weighing on prices. Trioxide producers found it difficult to obtain orders above 5t each this year, as downstream buyers bought material only as needed.

The export market remained subdued, as most export firms suspended price quotations or shipments recently. There will be no metal shipments at least before the end of October because of a new process after the export licensing scheme and China's national day holiday over 1-7 October. Export prices held unchanged at \$24,500-25,700/t fob for 99.65pc grade metal and at \$19,900-20,000/t fob for 99.8pc grade trioxide since 3 September.

Electronic metals price assessments				
	Unit	10 Sep		±
		Low	High	
<b>Arsenic</b>				
Min 99% fob US warehouse (30 Aug)	\$/lb	1.70	2.00	-0.20
<b>Bismuth</b>				
Min 99.99% du Rotterdam	\$/lb	6.20	6.80	nc
Min 99.99% ex-works China	Yn/t	89,000	91,000	nc
Min 99.99% fob China	\$/lb	5.70	5.82	nc
Bismuth Ingot min 99.99% fob US warehouse	\$/lb	6.15	6.65	nc
<b>Gallium</b>				
Min 99.9999% ex-works China	Yn/kg	2,650	2,700	+25
Min 99.9999% fob China	\$/kg	390.00	415.00	+5.00
Min 99.99% ex-works China	Yn/kg	2,550	2,600	+25
Min 99.99% fob China	\$/kg	410.00	415.00	+2.50
Min 99.99% cif Main Airport	\$/kg	500.00	550.00	nc
<b>Germanium</b>				
Dioxide min 99.999% ex-works China	Yn/kg	12,600	12,800	nc
Dioxide min 99.999% fob China	\$/kg	1,630.00	1,680.00	nc
Dioxide min 99.999% cif main airport Europe	\$/kg	1,900.00	2,100.00	nc
Metal (zone refined ingot) min 99.999% ex-works China	Yn/kg	17,800	18,300	nc
Metal min 99.999% cif main airport Europe	\$/kg	2,800	3,100	nc
Min 99.999% fob China	\$/kg	2,430	2,530	nc
<b>Indium</b>				
Min 99.99% du Rotterdam	\$/kg	370.00	400.00	nc
Min 99.99% ex-works China	Yn/kg	2,770	2,870	nc
Indium min 99.99% fob China	\$/kg	357.00	377.00	nc
Ingot min 99.99% fob US warehouse	\$/kg	390.00	420.00	nc
Min 99% ex-works China	Yn/kg	2,720	2,820	nc
<b>Selenium</b>				
Dioxide min 98% del China consumer	Yn/kg	200.00	215.00	nc
Min 99.5% du Rotterdam	\$/lb	14.00	16.00	+0.40
Selenium min 99.5% fob US warehouse	\$/lb	11.00	11.50	nc
Powder min 99.9% del China consumer	Yn/kg	295.00	315.00	nc
<b>Tantalum</b>				
Pentoxide min 99.5% ex-works China	Yn/kg	1,520	1,540	nc
Tantalite basis 25% Ta <sub>2</sub> O <sub>5</sub> cif main port	\$/lb	76.00	80.00	+2.00
Min 99.8% du Rotterdam	\$/kg	290.00	305.00	nc
<b>Tellurium</b>				
99.99% ex-works China	Yn/kg	700	720	-20
Min 99.99% du Rotterdam	\$/kg	100.00	115.00	-2.50
Min 99.95% fob US warehouse	\$/kg	75.00	80.00	nc
<b>Zirconium</b>				
Carbonate 40% Zr (Hf)O <sub>2</sub> 0.2% Cl ex-works China	Yn/t	20,500	21,000	nc
Carbonate 40% Zr (Hf)O <sub>2</sub> 0.2% Cl fob China	\$/t	2,860	2,930	nc
Carbonate 40% Zr (Hf)O <sub>2</sub> 0.005% Cl ex-works China	Yn/t	21,500	22,000	nc
Carbonate 40% Zr (Hf)O <sub>2</sub> 0.005% Cl fob China	\$/t	3,010	3,080	nc
Fused zirconia 98.5% ZrO ex-works China	Yn/t	34,500	35,000	nc
Oxychloride 36% Zr(Hf)O <sub>2</sub> ex-works China	Yn/t	14,200	14,500	-100
Oxychloride 36% Zr(Hf)O <sub>2</sub> fob China	\$/t	2,000	2,100	-20
Silicate 65% Zr(Hf)O <sub>2</sub> ex-works China	Yn/t	15,800	16,100	-100
Sponge 99.4% Zr+Hf ex-works China	Yn/kg	170.00	175.00	nc

## MINOR METALS: CHINA MARKET COMMENTARY

### Bismuth

Prices for 99.99pc grade metal were assessed at Yn89,000-91,000/t ex-works today, the same as 5 September, because producers maintained their offers and focused on long-term contracts, with a few deals done at Yn89,000/t in the past few days.

The most traded September contracts on the Zhonglianjin platform fell to Yn92,500-93,400/t at 3pm Beijing time (07:00 GMT) today, compared with Yn93,100-93,900/t on 5 September.

Export prices were assessed at \$5.70-5.82/lb fob today, unchanged from 5 September, tracking the fall in domestic prices.

### Cadmium

The market held steady this week after last week's increase, as increased supply offset rising demand. Downstream buyers from the nickel-cadmium battery sector continued to replenish stocks after the summer lull, while supply increased, as some producers resumed production at the beginning of this month after environmental checks. The range for 99.99pc grade metal was assessed steady at Yn34,400-34,700/t ex-works today after increasing by Yn200/t on 3 September from the 27 August range. Prices for 99.5pc grade oxide held at Yn34,900-35,200/t ex-works today after rising by Yn200/t on 3 September from the 27 August range.

### Cobalt

Argus-assessed prices for 99.8pc grade metal extended falls to Yn159-180/kg ex-works today from Yn160-180/kg ex-works on 5 September, caused by rising supplies from domestic producers that far exceeded demand growth. Consumers from downstream sectors still made hand-to-mouth purchases.

September contracts for cobalt metal on the Changzhou Zhonglianjin platform hovered at Yn157.50/kg today, rebounding slightly from Yn157.00/kg on 5 September, but still down from Yn159.50/kg on 27 August and Yn188/kg on 20 June because of exacerbated oversupply in the spot market.

The cif China assessment for 30pc grade cobalt hydrox-

### Battery metals price assessments

	Unit	10 Sep		±
		Low	High	
<b>Antimony</b>				
Ingot min 99.65% ex-works China	Yn/t	159,000	161,000	-1,000
Ingot min 99.65% fob China	\$/t	24,500	25,700	nc
Min 99.85% ex-works China	Yn/t	161,000	162,000	-500
Min 99.65% cif US	\$/lb	12.700	13.300	nc
Regulus grade II min 99.65% Sb du Rotterdam	\$/t	26,000	27,000	+100
Regulus Trioxide grade min 99.65% Sb du Rotterdam	\$/t	26,000	27,000	+100
Trioxide min 99.5% ex-works China	Yn/t	139,000	140,000	-500
Trioxide min 99.5% fob China	\$/t	19,700	19,800	nc
Trioxide min 99.8% ex-works China	Yn/t	140,000	141,000	-500
Trioxide min 99.8% fob China	\$/t	19,900	20,000	nc
<b>Cadmium</b>				
Min 99.99% du Rotterdam	\$/lb	1.85	1.95	+0.050
Min 99.99% ex-works China	Yn/t	34,400	34,700	nc
Min 99.99% cif India	Rs/kg	385.00	395.00	-10.000
Min 99.99% fob US warehouse	\$/lb	2.20	2.40	nc
Min 99.95% du Rotterdam	\$/lb	1.80	1.90	+0.050
Min 99.95% fob US warehouse	\$/lb	2.10	2.20	nc
Min 99.95% cif India	Rs/kg	385.00	395.00	-10.000
Oxide min 99.5% ex-works China	Yn/t	34,900	35,200	nc
<b>Cobalt</b>				
(Electrolytic metal) min 99.8% ex-works China	Yn/kg	159.00	180.00	-0.500
Chloride min 24% ex-works China	Yn/t	35,000	36,000	nc
Cobalt min 99.8% alloy grade du Rotterdam	\$/lb	14.75	16.25	nc
Min 99.8% fob US warehouse	\$/lb	16.15	16.65	nc
Cobalt min 99.8% chemical grade du Rotterdam	\$/lb	11.00	12.25	+0.125
Cobalt hydroxide min 30% cif China	\$/lb	6.25	6.35	-0.050
Cobalt hydroxide payable indicator 30% min Co cif China (pc Argus cobalt metal) (06 Sep)	pct	53.00	55.00	nc
Oxide 72% ex-works China	Yn/kg	113.00	118.00	nc
Powder min 99.8% ex-works China	Yn/kg	183.00	188.00	nc
Cobalt sulphate min 20.5% ex-works China	Yn/t	28,000	28,500	nc
Sulphate min 20.5% ex-works China excl. VAT USD/lb	\$/lb	1.58	1.61	nc
Tetroxide min 73% ex-works China	Yn/kg	114.00	119.00	nc
<b>Graphite</b>				
Flake 94% carbon ex-works China	Yn/t	2,700	2,950	-50
Graphite Flake 94% carbon fob China	\$/t	465.00	495.00	-5.000
Flake 94% carbon ex-works China excl. VAT USD/t	\$/t	335.65	366.73	-6.145
<b>Lithium</b>				
Carbonate min 99.5% ex-works China	Yn/t	72,000	76,000	nc
Carbonate min 99.5% ex-works China excl. VAT USD/kg	\$/kg	8.95	9.45	-0.005
Lithium carbonate min 99.5% cif China	\$/kg	9.00	9.50	nc
Cobalt oxide min 60% Co ex-works China	Yn/kg	143.00	159.00	-1.000
Hydroxide min 56.5% ex-works China	Yn/t	69,000	79,000	nc
Hydroxide min 56.5% ex-works China excl. VAT USD/kg	\$/kg	8.58	9.82	-0.005
Lithium hydroxide min 56.5% fob China	\$/kg	11.10	11.80	nc
Lithium concentrate (spodumene) 6% Li2O cif China	\$/t	740	810	-10
<b>Manganese</b>				
Manganese sulphate min 32% Mn battery grade ex works China	Yn/t	6,100	6,300	nc
Dioxide min 91% carbon battery grade ex works China	Yn/t	15,900	16,400	nc
Dioxide min 91% alkaline battery grade ex works China	Yn/t	16,700	17,200	nc

## 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).

## MINOR METALS: CHINA MARKET COMMENTARY

ide dipped to \$6.25-6.35/lb from \$6.30-6.40/lb today from 5 September. A major producer had begun to sell in small quantities in the spot market at the current prices, according to market participants.

Prices for 24pc grade chloride and 20.5pc grade sulphate – the two main cobalt salts – were assessed at Yn35,000-36,000/t ex-works and Yn28,000-28,500/t ex-works today, stable from 5 September. Several salts producers were out of production in August, and this helped hold salts prices stable during that period. They resumed production in early September, while most consumers still made hand-to-mouth purchases because of flat demand. A few other small producers remained out of production, supporting salts prices. A consumer bought 200t of sulphate at Yn28,000/t today.

Argus-assessed 73pc cobalt tetroxide prices held steady at Yn114-119/kg ex-works today from 5 September. Demand has yet to pick up significantly as it usually does in the peak season, while supply increased this year.

Prices for 99.8pc grade powder stabilised at Yn183-188/kg ex-works today from 5 September, supported by the firm feedstock prices. Most consumers still purchased only as needed given muted demand from cemented carbide sectors.

Subdued demand balanced stable feedstock prices to hold 72pc grade oxide prices at Yn113-118/kg ex-works today, unchanged from 5 September. Many suppliers cut prices early last week to grab market share in the face of weak demand and sufficient supply, despite thinner or even little-to-none profit margins at suppliers, but found it difficult to boost sales.

### Gallium

The market rebounded again in the past two days in response to falling output as a 60 t/yr producer in Shanxi province halted production for equipment upgrades. This outweighed increasing capacity to boost the spot market. Some producers even offered Yn2,800/kg ex-works this week, but no deals were concluded at the same level. Market participants were divided in their market outlooks, as some expected prices to likely fall owing to increasing output stemming from capacity expansions and new production projects that are set to come on stream later this year.

Domestic prices for 99.99pc grade metal were assessed at Yn2,550-2,600/kg ex-works today from Yn2,500-2,600/kg on 5 September. Export prices increased to \$410-415/kg fob from \$405-415/kg fob over the same period in line with the rise in domestic prices.

### Light metals price assessments

	Unit	10 Sep		±
		Low	High	
<b>Magnesium</b>				
Alloy min 90% Mg AZ91 ex-works China	Yn/t	19,900	20,400	nc
Alloy min 90% Mg AZ91 fob China	\$/t	2,870	2,940	nc
Min 99.9% fob US warehouse	\$/t	7,165	8,267	nc
Min 99.9% du Rotterdam	\$/t	2,760	2,830	nc
Min 99.9% ex-works China	Yn/t	17,900	18,400	nc
Min 99.9% fob China	\$/t	2,600	2,670	nc
Powder 99.9% Mg 20-80 mesh ex-works China	Yn/t	19,400	19,900	nc
Powder 99.9% Mg 20-80 mesh fob China	\$/t	2,810	2,880	nc
<b>Manganese</b>				
Briquette min 97% Mn ex-works China	Yn/t	12,500	12,700	+100
Briquette 97% Mn fob China	\$/t	1,750	1,800	+10
Electrolytic metal min 99.7% fob US warehouse (05 Sep)	\$/lb	1.16	1.23	-0.02
Flake 99.7% Mn ex-works China	Yn/t	11,900	12,100	+100
Flake min 99.7% fob China	\$/t	1,710	1,760	+10
Flake min 99.7% du Rotterdam	\$/t	1,980	2,000	+25
Lump min 95% Mn ex-works China	Yn/t	12,300	12,500	+100
Lump 95% Mn fob China	\$/t	1,760	1,810	+10
<b>Silicon</b>				
5-5-3 min 98.5% Si dat Chinese ports	Yn/t	11,300	11,500	nc
5-5-3 min 98.5% Si fob China	\$/t	1,640	1,670	nc
5-5-3 min 98.5% Si ddp Europe works	€/t	2,200	2,350	nc
5-5-3 min 98.5% Si fca duty paid Rotterdam within 90 days (05 Sep)	€/t	2,200	2,350	nc
5-5-3 min 98.5% Si fob US warehouse	\$/lb	1.730	1.800	nc
5-5-3 min 98.5% Si fob US warehouse 90 days	\$/lb	1.680	1.750	nc
4-4-1 min 99% Si dat Chinese ports	Yn/t	11,800	12,000	nc
4-4-1 min 99% Si fob China	\$/t	1,710	1,740	nc
4-4-1 min 99% Si ddp Europe works	€/t	2,300	2,500	nc
3-3-0-3 min 99% Si dat Chinese ports	Yn/t	12,600	12,800	nc
3-3-0-3 min 99% Si fob China	\$/t	1,810	1,840	nc
3-3-0-3 min 99% Si fca Europe works	€/t	2,500	2,700	nc
2-2-0-2 min 99.5% Si dat Chinese ports (05 Sep)	Yn/t	18,700	19,000	nc
2-2-0-2 min 99.5% Si fob China (05 Sep)	\$/t	2,620	2,650	nc
2-2-0-2 min 99.5% Si fca Europe works	€/t	2,700	2,800	nc
<b>Titanium</b>				
Concentrate 50% TiO <sub>2</sub> ex-works China (VAT unpaid)	Yn/t	1,930	2,000	nc
Concentrate 46% TiO <sub>2</sub> ex-works China (VAT unpaid)	Yn/t	2,220	2,240	-20
Concentrate Vietnamese A grade min 50% TiO <sub>2</sub> FOB China warehouse (05 Sep)	\$/t	320	340	nc
Concentrate Vietnamese B grade min 54% TiO <sub>2</sub> FOB China warehouse (05 Sep)	\$/t	300	320	nc
Concentrate Mozambique origin min 50% TiO <sub>2</sub> CIF China (05 Sep)	\$/t	330	370	nc
Concentrate Australia origin min 50% TiO <sub>2</sub> CIF China (05 Sep)	\$/t	300	330	nc
Dioxide 93pc min rutile grade ex-works China	Yn/t	14,800	15,500	nc
Dioxide 93pc min rutile grade fob China	\$/t	2,000	2,150	nc
Dioxide 98pc min anatase grade ex-works China	Yn/t	13,800	14,300	nc
Ingot min 99% Ti pure TA1 ex-works China	Yn/t	52,000	55,000	nc
Ingot min 99% Ti pure TA2 ex-works China	Yn/t	50,000	52,000	nc
Ingot min 99% Ti pure TA3 ex-works China	Yn/t	53,000	56,000	nc
6AL 4V ingot fob US producer (30 Aug)	\$/lb	12.50	12.85	-0.25
6AL 4V ingot in-warehouse Rotterdam (02 Sep)	\$/kg	19.00	22.00	nc
Ingot CP Grade 1 contract cif main port USD/kg (02 Sep)	\$/kg	12.50	14.50	nc
Ingot CP Grade 2 contract cif main port USD/kg (02 Sep)	\$/kg	11.50	13.00	nc
Slag min 92% TiO <sub>2</sub> ex-works China	Yn/t	7,600	7,700	nc
Sponge 99.7% Ti ex-works China	Yn/t	43,000	44,000	-1,000
Sponge 99.6% Ti ex-works China	Yn/t	42,000	43,000	-1,000
Sponge TG-Tv 10x30mm du Rotterdam	\$/kg	5.50	6.00	nc
Tetrachloride min 99.9% TiCl <sub>4</sub> ex-works China	Yn/t	5,800	6,300	-50

## MINOR METALS: CHINA MARKET COMMENTARY

### Germanium

The market remained steady in the past two days following months of consecutive gains driven by tight feedstock supply, as downstream buyers resisted higher prices. Some producers still offered Yn19,000-20,000/kg ex-works this week given tight feedstock supplies, but few deals were done.

The Argus-assessed range for 99.999pc grade metal held unchanged at Yn17,800-18,300/kg ex-works today from 5 September. Export prices remained at \$2,430-2,530/kg fob over the same period.

### Graphite

Producers cut prices to secure orders for the fourth quarter, with prices assessed down to Yn2,150-2,450/t ex-works for 90pc grade flake, Yn2,700-2,950/t ex-works for 94pc grade and Yn3,050-3,350/t ex-works for 95pc grade today, all down by Yn50/t from the 3 September range.

Export prices dropped by \$5/kg from 3 September to \$465-495/t fob for 94pc grade flake and \$505-555/t fob for 95pc grade today, in line with the lower domestic prices, with most export firms committed to contract deliveries.

### Indium

The market held flat over the past two days. Fewer deals were done on the spot market, as downstream buyers held adequate stocks and were reluctant to place orders. September contracts on the Zhonglianjin platform declined to Yn2,870/kg at 4:30pm Beijing time (08:30 GMT) from Yn2,890/kg on 9 September and Yn2,900/kg on 5 September.

The Argus-assessed prices for 99.99pc grade metal remained stable from 5 September at Yn2,770-2,870/kg ex-works today. Export prices held unchanged at \$357-377/kg fob over the same period. Few spot deals were concluded, as key producers were primarily committed to term contracts.

### Lithium

The Argus-assessed prices for 6pc grade lithium concentrate (spodumene) dipped by \$10/t cif China from a week earlier to \$740-810/t cif China today. Lithium salts converters continued to press down spodumene prices because salts prices have been dipping since mid-April, making it difficult for salts producers to earn profits.

Prices for 99.5pc grade lithium carbonate were assessed at Yn72,000-76,000/t ex-works today stable from 9 September, down from Yn72,500-76,500/t ex-works on 3 September. A deal for 100t was concluded at Yn72,000/t ex-works today. Sufficient supply pressured prices, and many producers with

### Scrap metal price assessments

Market	Unit	Date	Low	High	±
<b>Molybdenum</b>					
Scrap 99.7% airmelt del US consumer	\$/lb	30 Aug	25.00	25.50	-0.75
Vacuum grade 99.7% del US vacuum consumer	\$/lb	30 Aug	28.00	29.00	-1.00
Scrap 99.9% pure vacuum del US processor	\$/lb	30 Aug	25.50	26.50	-1.50
Molybdenum contained in 316 stainless scrap solids del US consumer	\$/lb	15 Aug	17.95	18.05	-0.59
<b>Niobium</b>					
(columbium) scrap vacuum del US consumer	\$/lb	30 Aug	42.00	45.00	nc
(columbium) scrap vacuum del US processor	\$/lb	30 Aug	31.00	33.00	+0.50
<b>Tantalum</b>					
Scrap 99.9% vacuum melted del US consumer	\$/lb	10 Sep	145.00	150.00	nc
<b>Titanium</b>					
Scrap 6Al 4V bulk weldable del US dealer/processor	\$/lb	5 Sep	4.60	5.40	-0.10
Scrap 6Al 4V clips del US dealer/processor	\$/lb	5 Sep	3.40	3.90	-0.10
Scrap grade CP1 solids del US dealer/processor	\$/lb	5 Sep	2.50	3.05	nc
Scrap grade CP2 solids del US dealer/processor	\$/lb	5 Sep	2.05	2.25	nc
Scrap grade CP3/4 solids del US dealer/processor	\$/lb	5 Sep	1.60	1.90	nc
Scrap 6Al 4V turnings aero quality del US processor	\$/lb	5 Sep	3.00	3.15	nc
<b>Tungsten</b>					
Carbide scrap inserts fob US processor	\$/lb	30 Aug	10.00	10.50	+0.12
Carbide scrap rounds fob US processor	\$/lb	30 Aug	10.25	10.75	nc
99.9% scrap solids consumer price fob US processor	\$/lb	30 Aug	19.00	21.00	nc
99.9% scrap del US processor	\$/lb	30 Aug	15.00	16.00	nc

higher costs have yet to halt output because of many reasons, while consumers made purchases only as needed. Major producer Albemarle will on 11 September hold a tender for 200t of carbonate, which is processed by China's Hebei Jicheng Lithium, with concentrate from the Greenbushes mine in Australia.

Chinese state-owned metals and mineral company Minmetals aims to form a company China Salt Lake Group to develop salt lake brine resources in northwest China's Qinghai province. Minmetals will become Qinghai Salt Lake's controller first and then is likely to integrate lithium resources in the Qarhan salt lake area. But how and to what extent this integration will affect the supply structure and lithium

## MINOR METALS: CHINA MARKET COMMENTARY

High-temperature metals price assessments				
	Unit	10 Sep		±
		Low	High	
<b>Chromium</b>				
(alumino-thermic) min 99% dp Rotterdam	\$/t	8,500	11,400	nc
(aluminothermic) fob US warehouse (30 Aug)	\$/lb	5.35	5.75	+0.12
(aluminothermic) min 99% Cr fob China	\$/t	8,650	10,000	nc
(aluminothermic) min 99% Cr ex-works China	Yn/t	62,000	70,000	nc
<b>Hafnium</b>				
Min 99% max 0.5% Zr du Rotterdam	\$/kg	3,900.00	4,400.00	nc
Crystal bar Hf+Zr min 99.95% ex-works China (05 Sep)	Yn/kg	18,000.00	19,000.00	nc
Crystal bar Hf+Zr min 99.95% fob China (05 Sep)	\$/kg	2,700.00	2,750.00	nc
Ingot Hf+Zr min 99.95% ex-works China (05 Sep)	Yn/kg	20,000.00	21,000.00	nc
Ingot Hf+Zr min 99.95% fob China (05 Sep)	\$/kg	3,000.00	3,050.00	nc
<b>Molybdenum</b>				
Ingot min 99.8% in-warehouse Rotterdam	\$/kg	63.00	65.00	nc
Trioxide 99.9% min ex-works China	Yn/t	282,000.00	285,000.00	nc
Concentrates Mo 45% ex-works China	Yn/mtu	3,730	3,760	-30
Roasted concentrates (oxide) min 57% ex-works China	Yn/mtu	3,830	3,860	-30
Oxide min 57% Mo in-warehouse Busan	\$/lb	21	22	0
Oxide min 57% Mo du Rotterdam	\$/lb Mo	21.50	21.70	-0.30
Oxide min 57% Mo duty paid India	Rs/kg Mo	2,360	2,400	nc
Oxide min 57% fob US warehouse (05 Sep)	\$/lb	22.000	22.600	+0.200
<b>Niobium</b>				
Ingot min 99.8% in-warehouse Rotterdam (02 Sep)	\$/kg	93.00	97.00	nc
Pentoxide min 99.5% ex-works China	Yn/kg	360	370	nc
(columbite) concentrate min 50% Nb <sub>2</sub> O <sub>5</sub> cif main port	\$/lb	17.50	18.50	+0.25
<b>Rhenium</b>				
APR min 69.2% Re (basic grade) du Rotterdam	\$/kg Re	900	950	nc
APR min 69.4% Re (catalyst grade) dp Rotterdam	\$/kg Re	1,600	1,800	+10
APR min 69.4% Re ex-works China	Yn/kg	9,000	10,000	nc
APR catalyst 69.4% fob US warehouse (30 Aug)	\$/lb	720	790	+117.5
Pellets min 99.9% Re dp Rotterdam	\$/lb	700.00	850.00	nc
99.9% fob US warehouse (30 Aug)	\$/lb	750	800	+165.0
<b>Tungsten</b>				
APT du Rotterdam	\$/mtu WO <sub>3</sub>	325	335	nc
Tungsten APT fob China	\$/mtu WO <sub>3</sub>	330	335	nc
APT min 88.5% ex-works China	Yn/t	206,000	208,000	-500
Carbide min 99.7% ex-works China	Yn/kg	302	305	0
Carbide powder (3-4micron) fob China	\$/kg	43.00	44.00	nc
Ingot min 99.9% in-warehouse Rotterdam	\$/kg	47.00	48.00	nc
99.9% min Chinese bar del US consumer (30 Aug)	\$/lb	22.25	23.50	+0.62
Oxide (Yellow/Blue oxide) fob China	\$/t	33,500	34,000	nc
Oxide min 99.95% ex-works China	Yn/t	238,000	240,000	-1,000
Concentrates 55% min ex-works China	Yn/t	137,000	139,000	-1,000
Concentrates min 65% ex-works China	Yn/t	138,000	140,000	-1,000
Concentrates min 65% in-warehouse Rotterdam	\$/dmtu	250	265	+2
<b>Vanadium</b>				
Pentoxide fused flake min 98% du Rotterdam	\$/lb V <sub>2</sub> O <sub>5</sub>	5.50	6.00	nc
Pentoxide 98% V <sub>2</sub> O <sub>5</sub> fob China	\$/lb	4.90	5.30	nc
Pentoxide 98% V <sub>2</sub> O <sub>5</sub> ex-works China	Yn/t	74,000	76,000	nc

## MINOR METALS: CHINA MARKET COMMENTARY

prices is to be observed, according to market participants.

The most-traded November lithium carbonate contracts on the Guangzhou Futures Exchange rebounded slightly to Yn72,150/t today from Yn70,750/t on 5 September, but was still down from Yn76,850/t on 29 August, with traded quantities totalling 196,200t today.

Import prices for 99.5pc grade lithium carbonate held at \$9.00-9.50/kg cif China today, stable from 5 September, down from \$9.10-9.60/kg cif China on 3 September, dragged by ample supplies. China imported 130,541t of carbonate during January-July, up by 52pc from a year earlier, customs data show.

Prices for 60pc grade lithium cobalt oxide (LCO) declined to Yn143-159/kg ex-works today from Yn144-160/kg ex-works on 5 September, in line with the fall in lithium carbonate prices feedstock prices. Consumers from the consumer electronics lithium-ion battery industry continued to buy LCO only as needed, and some LCO producers cut prices to bolster sales.

Argus-assessed prices for 56.5pc grade hydroxide held stable at Yn69,000-79,000/t ex-works today from Yn70,000-80,000/t ex-works on 3 September. Producers were reluctant to reduce hydroxide prices further because they found it difficult to earn a profit, while demand stayed flat from the ternary cathode active material segment.

Export prices for hydroxide also held flat at \$11.10-11.80/kg today from 5 September. China exported 77,236t of hydroxide over January-July, up by 11pc from a year earlier, customs data show.

### Magnesium

Thin profit margins had offset tepid demand, leaving prices for 99.9pc grade metal at Yn17,900-18,400/t ex-works today, unchanged from 9 September and 5 September. Producers in the main production hub Shaanxi province maintained their offers at Yn18,000/t, with most deals done at Yn17,900/t in the past days.

Export prices were assessed stable from 9 September and 5 September at \$2,600-2,670/t fob today in line with the steady domestic prices, with most export firms committed to long-term contracts.

### Manganese

The market edged up today, as producers raised offers to deal with losses. Steel producer Xinyu Iron and Steel raised its tender price for 200t of manganese lump 97pc grade to Yn13,880/t on a delivered basis and paid by acceptance bill,

Super alloys - scrap (del US processor)				\$/lb
	Timing	Low	High	±
Hastelloy C air melted	10 Sep	6.93	7.67	-0.01
Hastelloy X air melted	10 Sep	3.94	4.13	-0.01
Inconel 600 vacuum melted	10 Sep	4.40	4.46	-0.01
Inconel 601 vacuum melted	10 Sep	3.65	3.86	-0.01
Inconel 617 vacuum melted	10 Sep	4.90	5.39	-0.01
Inconel 625 vacuum melted	10 Sep	6.86	7.25	-0.01
Inconel 718 vacuum melted	10 Sep	6.31	6.55	-0.01
Waspaloy vacuum melted	10 Sep	4.64	5.00	-0.01

Super alloys - primary			\$/lb
	Timing	Assessment	±
Inconel 625 vacuum melted ex-works Europe	09 Sep	9.59	-0.05
Inconel 625 vacuum melted del US processor	09 Sep	10.04	-0.05
Inconel 718 vacuum melted ex-works Europe	09 Sep	8.04	-0.04
Inconel 718 vacuum melted del US processor	09 Sep	8.46	-0.04
7075 aluminium ex-works Europe	09 Sep	1.26	-0.03
7075 aluminium del US processor	09 Sep	1.37	-0.02

Mineral sands price assessments				
		10 Sep		
	Unit	Low	High	±
<b>Rutile</b>				
Rutile Hainan min 90% TiO <sub>2</sub> exworks China	Yn/t	7,400	7,600	nc
Rutile Australian min 95% TiO <sub>2</sub> exworks China	Yn/t	9,300	9,800	nc
<b>Zircon sand</b>				
Zircon sand Hainan min 65% O <sub>2</sub> exworks China	Yn/t	11,800	12,000	nc
Zircon sand Australian min 66% O <sub>2</sub> cif China	\$/t	2,030	2,050	nc
<b>Monazite</b>				
Monazite REO+ThO min 60pc exworks China	Yn/t	40,500	42,500	+2,750

up by Yn680/t from a previous tender it issued at the end of August.

Domestic prices for 99.7pc grade flake were assessed at Yn11,900-12,100/t ex-works today, up by Yn100/t from 9 September and by Yn200/t from 5 September. Export prices rose to \$1,710-1,760/t fob today, up by \$10/t from 9 September and by \$30/t from 5 September. A trader purchased 300t of flake at \$1,680-1,690/t fob at the beginning of last week, but found it hard to buy at this price this week, as producers withheld material from sales while observing market trends or offering higher prices.



## MINOR METALS: CHINA MARKET COMMENTARY

### Monazite

Prices rose to Yn40,500-42,500/t ex-works today, corresponding to Yn4,921-5,164/t for the PrO + NdO value contained in the product, from Yn37,500-40,000/t ex-works on 3 September, in response to increased buying enquires from rare earth chloride producers and lower spot availability.

Some zirconium-titanium beneficiation producers were inclined to sell above Yn40,500/t ex-works on the spot market because of lower stocks and higher bid prices from rare earth chloride producers. A Guangxi-based zirconium-titanium beneficiation producer operated at lower capacity owing to reduced zircon sand prices and weak demand from the zirconium industry. A Zhanjiang-based trading house sold 100t of material to a regular consumer at Yn40,500/t ex-works on 9 September, expecting it difficult for transaction prices to exceed Yn42,500/t ex-works today, as prices for praseodymium-neodymium have begun to fall in response to weaker consumer buying.

### Nickel sulphate

Domestic prices fell to Yn26,800-27,200/t ex-works today from Yn27,200-27,600/t ex-works on 5 September because of downward pressure from falling London Metal Exchange nickel prices. "Sulphate producers faced negative profit margins most of this year, except for two months with a profit margin," a source at a nickel sulphate producer told *Argus*. Lacklustre demand from the EV sector dented market confidence, prompting some producers to lower offers to attract buying interest. Several participants expressed concerns over the longer-term price outlook, as their new production projects are scheduled to start production by the end of 2024.

Imported sulphate prices decreased to \$3,330-3,380/t cif China from \$3,380-3,430/t over the same period in line with the falling domestic prices.

### Selenium

The range for 98pc grade dioxide was assessed at Yn200-215/kg del China consumer today, unchanged from 5 September, because producers maintained their offers in line with firm production costs balancing flat demand from the downstream manganese flake industry.

*Argus* assessed prices for 99.9pc grade powder at Yn295-315/kg del China consumer today, stable from 5 September, with a few deals done at Yn315/kg in the past days.

### Titanium

The market edged down in response to weak demand and lower bid prices from dioxide producers. Prices for 46pc grade concentrate fell to Yn2,220-2,240/t ex-works with 13pc value-added tax (VAT) unpaid today from Yn2,240-2,260/t ex-works on 5 September.

Prices are unlikely to fall significantly, as supplies for medium-grade ore feedstock remained tight and some dioxide producers continued to purchase small volumes.

Prices for 99.7pc grade sponge declined to Yn43,000-44,000/t ex-works today from Yn44,000-45,000/t ex-works on 5 September. The range for 99.6pc grade fell to Yn42,000-43,000/t ex-works from Yn43,000-44,000/t ex-works over the same period in response to surplus supplies and lower demand from the chemical and civil consuming sectors.

Tetrachloride (TiCl<sub>4</sub>) prices dipped to Yn5,800-6,300/t ex-works today from Yn5,800-6,400/t ex-works on 5 September in response to weaker demand from the dioxide, sponge, pearlescent pigment, fine chemical industries.

### Tellurium

Some traders and investors cut prices to generate cash, pulling prices for 99.99pc grade metal down to Yn700-720/kg ex-works today, down by Yn20/kg from 3 September. Consumers from the refrigerator industry opted to operate from stocks while waiting for even lower prices.

### Tungsten

Lower-than-expected term bids from key consumers, including Xiamen Tungsten and Zhangyuan Tungsten weighed on spot market prices, with suppliers making price concessions to grasp deals. Prices for 65pc grade concentrate dipped to Yn138,000-140,000/t ex-works today from Yn139,000-141,000/t ex-works on 5 September, with the range for 88.5pc grade ammonium paratungstate (APT) narrowing to Yn206,000-208,000/t ex-works from Yn206,000-209,000/t ex-works during the same period. Prices for 99.7pc grade carbide fell to Yn302-305/kg from Yn302-306/kg over the same period. Terms contract commitments continued to dominate market activity, leaving few spot deals concluded because of prolonged moderate downstream demand from the manufacturing industry.

The export market remained sluggish in line with weaker international demand, which was being refrained by reduced

## MINOR METALS: CHINA MARKET COMMENTARY

usage of tungsten from gasoline vehicles because of the fast development of new energy vehicles. Supplies from other countries such as Vietnam have also reduced international consumers' demand for Chinese material. Export prices for APT were assessed at \$330-335/metric tonne unit (mtu) today, unchanged since 29 August. The export range for tungsten carbide held stable at \$43-44/kg fob since 3 September, with export firms mostly focusing on term contracts.

### Vanadium

Prices for pentoxide flake fell to Yn74,000-76,000/t ex-works today from Yn75,000-76,000/t ex-works on 5 September because alloy smelters were unwilling to purchase at higher prices given slow demand and lower tender prices from steel producers.

Small- and medium-sized flake suppliers cut offers after major Chinese vanadium pentoxide flake suppliers Sichuan Chuanwei, Sichuan Desheng and Chengde Jianlong failed to sign contracts with alloy producers for September delivery at their offer price of Yn77,500/t on a delivered basis plus value-added tax (VAT) payable by acceptance bill and at Yn76,000/t paid by cash because of limited profit margins at alloy smelters.

Export prices held stable from 5 September at \$4.90-5.30/ lb fob today, as increased buying interest and higher bid prices from international consumers offset the lower domestic prices.

### Zirconium

Higher spot supplies, reduced prices for zircon sand feedstock costs and lower prices offered by producers pulled domestic prices for 36pc oxychloride down to Yn14,200-14,500/t ex-works today from Yn14,200-14,700/t ex-works on 3 September. Export prices fell to \$2,000-2,100/t fob from \$2,020-2,120/t fob over the same period in line with the lower domestic prices.

China exported 29,448t of zirconium oxychloride in the first seven months of this year, up by 18pc compared with 25,038t in the same period of 2023.

Prices for 65pc grade silicate were assessed lower at Yn15,800-16,100/t ex-works today from Yn15,800-16,300/t ex-works over the same period in response to lower zircon sand feedstock cost and reduced demand from ceramic producers. Most of them ran at lower capacity owing to a continued slowdown in the real estate industry.

## MINOR METALS: EUROPE MARKET COMMENTARY

### Europe: Prices gain as trade picks up

Prices moved upward across a range of minor metals today, partially lifted by a slow rise in trading activity in some markets and also driven by generally tighter availability in others. Antimony, cadmium, selenium, tantalite, manganese flake and tungsten concentrate all made gains.

### Antimony

Antimony prices gained support due to thin inventories in Rotterdam and sustained buying interest, despite a recent retreat in China prices. The assessments for antimony regulus grade II and trioxide rose to \$26,000-27,000/t du Rotterdam, up from \$25,800-27,000/t previously.

In China the market remained subdued after most export firms recently suspended price quotations or shipments. There will be no metal shipments at least before the end of October because of necessary process adaptations required following the introduction of a new export licensing scheme, and China's National Day holiday over 1-7 October.

### Cadmium

European cadmium prices found support today, with 99.95pc cadmium rising to \$1.80-1.90/lb duty unpaid from \$1.75-1.85/lb on 5 September and the higher purity 99.99pc material gaining to \$1.85-1.95/lb from \$1.80-1.90/lb over the same period. There were limited inquiries in Europe but there is an active market in China and India that meant material below these new levels was no longer possible to find, market participants told *Argus*.

### Cobalt

The assessment ranges for European cobalt widened today to \$14.75-16.25/lb du Rotterdam for alloy grade and \$11-12.25/lb du Rotterdam for chemical grade.

The market remains under pressure from oversupply which shows no sign of easing, especially after the conclusion of maintenance work at some key production sites. A range of price points have been under discussion in Europe this week but firm spot deals have been relatively few and far between. Global demand continues to lag behind supply and this fundamental imbalance is fuelling expectations of further price cuts before the market eventually bottoms out.

### Germanium

*Argus* today assessed prices for germanium metal stable at \$2,800-3,100/kg cif main airport after they rose last week. One offer was heard at \$3,000/kg. The assessment for germanium dioxide was steady at \$1,900-2,100/kg. Offers

## MINOR METALS: EUROPE MARKET COMMENTARY

for both grades have increased recently following a rise in export prices from China.

### Magnesium

Magnesium prices in Europe were stable today at \$2,760-2,830/t du Rotterdam, as the market continued to hold around the cost of production. Offers were heard to be trending lower having tested higher levels last week, when the Chinese market saw an uptick as Shaanxi-province producers lifted offers to protect margins. But the European market remained quiet with no new deals reported.

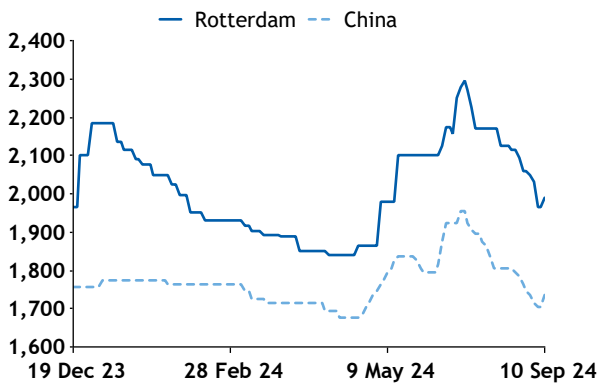
### Manganese

Manganese flake prices rose today to \$1,980-2,000/t du Rotterdam, up from \$1,950-1,980/t du Rotterdam on 5 September. A German steel mill was in the market for over 500t, purchasing material for both the fourth quarter of 2024 and first quarter of 2025. A trader sold 300t at \$1,985/t for the fourth quarter, with a \$5/t discount for the first quarter. He said all transactions for the tender went below the \$2,000/t mark.

Multiple traders said prices have rebounded after a precipitous drop at the end of August. One trader offered as high as \$2,020/t in warehouse Rotterdam today, and said prices may continue to rise. But *Argus* has yet to see evidence that transactions are occurring above \$2,000/t, with some attributing the rise in prices to hype rather than a change in market fundamentals. Demand has not increased as much as expected coming out of the summer lull, one market participant said.

Traders said freight prices from China to Rotterdam have decreased to around \$3,200-3,600/t for a twenty foot container from over \$5,000 per container earlier in the year. Softening freight costs may limit upside for manganese flake prices.

Manganese flake China vs Rotterdam \$/t



### Molybdenum

European molybdenum oxide prices dropped further to \$21.50-21.70/lb duty unpaid Rotterdam today from \$21.80-22/lb on 5 September, mirroring a decline in Asian prices. A deal was concluded at \$21.50/lb in Busan today, with offers rising throughout the day. Market participants said that they are waiting for higher levels to return. *Argus* assessed prices in Busan, South Korea, at \$21.40-21.60/lb in-warehouse today, down from \$21.80-21.90/lb on 5 September.

### Niobium

Firm downstream demand for niobium and tight availability of tantalum units prompted columbite prices to tick higher this week. *Argus* assessed prices at \$17.50-18.50/lb up from the 5 September assessment of \$17.25-18.25/lb. One container of Nigerian material sold at \$18.25/lb while offers rose above \$18.50/lb.

Downstream demand for niobium has been strong for most of this year due to increased demand for niobium alloys in some military and aerospace applications. But some smelters in China are also looking to secure more columbite units to take advantage of the contained tantalum units, due to pressure to remove DRC and Rwanda origin tantalum from their supply chains.

### Rhenium

Rhenium prices remained firm today on solid downstream demand. *Argus* assessments for catalyst grade ammonium perrhenate (APR) edged marginally up to \$1,600-1800/ up kg dp Rotterdam from \$1,600-1,780/kg previously. Meanwhile, prices for rhenium pellets remained stable at \$700-850/lb dp Rotterdam. The market remains divided, with some deals reported below and above the specified price range. However, many buyers are hesitant about accepting higher prices and are uncertain about the sustainability of the recent price increase.

### Selenium

The *Argus* selenium assessment moved up to \$14-16/lb duty unpaid, from \$14-15.20/lb late last week. Market participants noted a wide difference between powders at the lower end of the range and granules at the top. There was an offer at \$15.20/lb for 10t and another one at \$16.25/lb for granules, which was not accepted. Other sources mentioned that material at \$14/lb for powders is still available, and they find it difficult to sell to the glass sector above that level. Prices could rise further due to the European market remaining tight from solid demand from China over the past months.

## MINOR METALS: EUROPE MARKET COMMENTARY

### Silicon

All assessed silicon grade prices were flat this week as the market remained in summer shutdown mode even into the second week of September. Ranges for 5-5-3 and 4-4-1 grades stood at €2,200-2,350/t ddp Europe works and €2,300-2,500/t ddp Europe works, respectively. Prices for 3-3-0-3 and 2-2-0-2 grades were also assessed flat. There is potential downside following a dip in sea freight costs and lower replacement prices from China, but traders in Europe expect prices to trend higher in the event of higher activity over the coming weeks.

### Tantalum

Argus assessed tantalite prices higher at \$76-80/lb cif main airport, up from the 5 September assessment of \$75-77/lb, as firm local prices lifted offers above \$80/lb during an industry gathering in Tokyo.

Multiple tantalite containers sold at \$78/lb over the past few days while offers were consistently heard up to \$80/lb across the market. Some origins outside of the Democratic Republic of the Congo (DRC) and Rwanda were offered upwards of \$82/lb, but only a small number of buyers were willing to consider prices at this level.

Tantalum smelters in China were reluctant to accept the \$80/lb price level for tantalite as downstream demand for tantalum capacitors remains weak and low prices for tantalum pentoxide have squeezed profit margins. As a result, some smelters continue to target prices around \$75/lb but no sellers would accept this price level today.

At an annual tantalum industry meeting in Tokyo this week Argus heard that smelters are under pressure to reconsider sourcing material from DRC and Rwanda, as some major international consumers will not accept components with materials originating in these countries. But market participants noted that options are limited when buying outside DRC and Rwanda due to tight spot availability and high radioactivity of material originating from other sources like Mozambique and Nigeria.

### Tellurium

The Argus tellurium assessment range widened slightly today to \$100-115/kg in Rotterdam, down from \$105-115/kg on 5 September. Prices in China are dropping, which could further filter through Europe, but today there were few offers reported. Despite the price drop, it is still difficult to obtain material, market sources said. "Even after reaching out to several producers in China, I either received no feedback or was informed that only 3N purity is available," a buyer said.

### Tungsten

The tungsten concentrate assessment widened slightly today to \$250-265/dmtu in-warehouse Rotterdam from \$250-260/dmtu on 5 September as sales were concluded at the top-end of the range. Meanwhile, ammonium paratungstate (APT) prices held stable at \$325-335/mtu on thin trading in Europe, with fewer offers heard at the low-end of the range. Export prices for APT in China were assessed at \$330-335/metric tonne unit (mtu) today, unchanged since 29 August.

### Vanadium

The Argus assessment for vanadium pentoxide (V2O5) was stable at \$5.50-6/lb duty unpaid Rotterdam this week, as demand from downstream sectors remained slow. China is experiencing lower domestic prices but buying interest from international consumers persists following the US' sanctions on Russia's integrated vanadium supply lines targeting Evraz Group's operations. Included in the sanctions is Evraz's Vanadi Tula site, which turns out V2O5.



## Argus Ferrous Markets

A global service with over 1,700 ferrous assessments across the steel supply chain

#### Includes:

- Iron ore fines
- Coking coal
- Scrap prices
- Finished and semi-finished steel
- Metallics
- Export ferro-alloy prices
- Dry bulk freight rates



## Download a sample and request a trial of Argus Ferrous Markets

[view.argusmedia.com/AFM](http://view.argusmedia.com/AFM)

## MINOR METALS: US MARKET COMMENTARY

### US: Activity downshifts amid uncertainty

Spot market trading across the US was widely down across minor metal markets as a mix of already slow end-user demand blended with election and macroeconomic concerns. Still, suppliers were little moved by the lack of consumer demand as 2025 contract negotiations kicked off across several markets.

#### Antimony

Prices for 99.65pc grade antimony remained flat at \$12.70-13.30/lb cif US after surging recently.

US consumers stepped back from the spot market after a wave of spot and forward buys spurred by a combination of low-consumer stocks and China's plan to add the metal to its export control list. Traders were not in a rush to push for additional sales after broadly capitalizing on the abrupt increase, and many expect the market to pause for participants to determine if the recent upswing is sustainable.

#### Bismuth

Prices for 99.99pc grade bismuth ingot were flat at \$6.15-6.65/lb fob US warehouse, after nudging down a week earlier.

Spot market trading remained slim, sources said, with suppliers concerned over the lack of interest from the brass and bronze market, which typically increases later in the summer as maintenance and slowdowns begin to ebb.

Both consumers and suppliers eyed softening markets in Europe and China, anticipating that the simultaneous factors of slow US demand and easing offshore markets would eventually swamp efforts by suppliers to set a price floor.

#### Cobalt

Prices for 99.8pc grade cobalt was unchanged at \$16.15-16.65/lb fob US warehouse.

No new spot market greater-than-1 metric tonne (t) trades were reported in the last week – little changed from recent weeks. Melters in the superalloy and foundry markets have cut purchases since early August. Many have cited broader economic slowdowns, rising election and interest rates concerns, and a deepening impact from the aerospace market's lower-than-expected production rate. Still, a handful of 300-500kg sized inquiries and some unconfirmed purchases, achieved premiums well above \$17/lb.

Some traders subsequently maintained offers as high as \$17/lb, but in lieu of any reportable interest for volumes matching the methodology, Argus maintained its assessment on the week.

#### Indium

Prices for 99.99pc grade indium ingot were flat at \$390-420/kg fob US.

US spot market activity continued to drag on at low levels with low-melt and optical alloy producers able to draw on long-term contracts and inventories. Uncertainty over the impending Section 301 tariff decision, which was originally slated for August, has similarly left many in between a weakening market and a possible jump in the US compared to the rest of the world.

#### Ruthenium

Prices for 99.9pc grade nudged higher to \$345-355/troy ounce (ozt) fob US warehouse from \$340-350/ozt a week earlier.

Domestic spot market demand has remained little changed, but suppliers have continued gradually to lift offers mirroring increased demand from buyers in Asia-Pacific. German trader and refiner [Heraeus predicted last week that the market would rebound on the back of demand for the metal in hard-disk production.](#)

#### Silicon

Prices for 99.95pc grade fob US warehouse were steady at \$1.73-1.80/lb fob US.

Multiple consumers reported little-to-no spot market needs for the time being as 2025 contract talks slowly commenced over the past several days. Market participants anticipated automotive production – a significant consumer of silicon-bearing aluminum alloys – will rebound towards more typical levels over the next few months. This could be further elevated if the US Federal Reserve cuts its interest rates at its next meeting in mid-September. Traders have eyed relatively stable 5-5-3 prices in China and Europe for signs of the direction of the US market with most broadly expecting further weakness stemming from Chinese markets eventually to impact the domestic price.

## MINOR METALS: NEWS AND ANALYSIS

### China in talks with EU over battery EV duty cuts

China is still negotiating with the EU over the latter's countervailing duties on imports of Chinese battery electric vehicles (BEVs), against a backdrop of escalating trade friction between the two sides.

"Vice-minister Li Fei held talks with the director-general for trade of the European Commission, Sabine Weyand, in Brussels on 9 September," China's commerce ministry said today. "We cannot agree with and accept the EU's final ruling, but we still hope to resolve this friction through dialogue and consultation and seek a mutually acceptable solution."

The European Commission on 20 August proposed [definitive duties](#) for specific firms, with those for China's largest EV producer BYD set at 17pc, Geely at 19.3pc, SAIC at 36.3pc, other co-operating companies at 21.3pc and all other non-co-operating companies at 36.3pc. These definitive duties are only slightly lower than the provisional ones.

China on 9 August launched a case at the World Trade Organisation (WTO) against the EU's provisional duties on Chinese BEVs. But the EU said on 20 August that China's WTO consultation request would not affect the EU's timeline. The commission was "confident" that its investigation and provisional measures are WTO compatible.

China then launched a countervailing probe into imports of dairy products from the EU – considered by industry participants to be a countermeasure against the EV duties. Beijing in early September also discussed industry experts' proposals to raise import tariffs on large displacement fuel vehicles, for which the EU is a main exporter to China.

China in June also launched an anti-dumping probe into EU pork exports to China, the EU's largest export destination for this commodity. Pedro Sanchez, prime minister of Spain, which exports the most pork and dairy to China among all EU countries, is visiting China and met President Xi Jinping on 9 September.

Industry participants expect that the EU's duties on Chinese BEVs are likely to be reduced given the consultations between the two sides. "There are challenges for China and the EU to reach an agreement on the EV duties. But China believes that each other's concerns can be addressed through consultation as long as the EU shows sincerity and works towards the same goal," the ministry said.

China's new energy vehicle exports during January-August increased by 13pc from a year earlier to 818,000 units, according to industry data. The EU's duties are likely to slow the growth of Chinese BEV exports to Europe, according to industry participants.

### BYD launches Nanning Li carbonate plant

China's largest electric vehicle producer BYD has launched a production plant for battery-grade lithium carbonate in Nanning in south China's Guangxi province.

The 1.5bn yuan (\$211mn) plant has a capacity of 30,000 t/yr. BYD's subsidiary Nanning BYD New Material started building the plant in December 2022. BYD is planning to build 70GWh/yr of capacity for power and energy storage batteries in Nanning.

Nanning is near south China's main port Qinzhou. The country's major battery metals producer Huayou Cobalt has delivered lithium concentrate feedstock from its Arcadia mine in Zimbabwe to Qinzhou since last year.

BYD also aims to invest in lithium feedstock resources outside China, such as [the Salares Altoandinos lithium project in Chile](#). EV producers have accelerated investment in lithium feedstock production projects, including [Tesla's lithium refinery in the US' Texas](#).

BYD became the world's largest NEV producer in 2022, with market participants predicting its NEV sales will reach 4mn-4.5mn in 2024. It is also a major battery producer in China.

### CATL to expand Luoyang battery plant capacity

China's largest battery manufacturer Contemporary Amperex Technology (CATL) has started developing the second phase of a battery plant in Luoyang city in central China's Henan province.

CATL had [launched the first phase of the battery plant](#) with a production capacity of 30 GWh/yr in July. It plans to develop a second phase with a capacity of 30 GWh/yr, in response to rapid development of the new energy vehicle (NEV) industry. More details including the construction schedules and the launch dates were undisclosed.

Luoyang's local government will support CATL's new energy power generation projects, such as ensuring CATL can obtain wind power generation quotas during the country's 14th Five Year Plan during 2021-25.

CATL installed 133.7GWh of batteries during January-August, accounting for 46.2pc of the China's total volumes, data from the China Automotive Battery Innovation Alliance (Cabir) show. The company is also on track to build its [second European battery production facility in Hungary](#) to meet demand from European consumers.

CATL supplies lithium-ion batteries to domestic car manufacturers Shanghai Automotive, First Automobile, Geely, Yutong, Beijing Automotive, NIO and Xiaopeng. CATL's overseas downstream clients include Tesla, BMW, Daimler and PSA.

## MINOR METALS: NEWS AND ANALYSIS

### China's August EV output, sales rebound

China's new energy vehicle (NEV) production and sales rebounded in August after a month-on-month drop in July, with market penetration continuing to rise, data from the China Association of Automobile Manufacturers (CAAM) show.

- China produced 1.092mn NEVs in August, up by 30pc from the previous year and rising by 11pc from July, with sales increasing by 30pc from a year earlier and by 11pc from the previous month to 1.1mn.
- NEV sales accounted for 44.8pc of the country's total auto sales in August, up from 43.8pc in July, 41.1pc in June, 39.5pc in May, 36pc in April, 31.6pc in 2023 and 26pc in 2022.
- NEV production totalled 7.008mn units over January-August, up by 29pc from a year earlier, with sales rising by 31pc to 7.037mn over the same period.
- Major Chinese NEV manufacturers posted [higher sales during January-August](#) from a year earlier. Beijing authorities continued to offer supportive measures such as more subsidies to encourage trade-in of old vehicles and additional licence plate quotas.
- The country exported 110,000 NEVs in August, rising by 22pc from a year earlier and by 6.1pc from July. The European Commission from 5 July imposed provisional countervailing duties on imports of battery electric vehicles (BEVs) from China, which is likely to slow the growth of Chinese BEV exports to Europe. China's NEV exports during January-August increased by 13pc from a year earlier to 818,000 units.

China NEV production, sales					units	
	Aug '24	y-o-y ± %	m-o-m ± %	Jan-Aug '24	y-o-y ± %	
<b>Production</b>						
BEV	646,000	9.7	14	4,208,000	8.7	
Plug-in hybrids	445,000	76	7.2	2,796,000	79	
Fuel-cell	1,000	418	0	4,000	42	
Total	1,092,000	30	11	7,008,000	29	
<b>Sales</b>						
BEV	646,000	8.3	17	4,216,000	10	
Plug-in hybrids	453,000	82	3.4	2,817,000	84	
Fuel-cell	1,000	217	0	4,000	37	
Total	1,100,000	30	11	7,037,000	31	

– CAAM

### China's battery output, installed volumes rise

China's power and energy storage battery production and installed volumes rose in August as a result of firm demand from the new energy vehicle (NEV) sector.

- Lithium iron phosphate (LFP) batteries continued to take up the majority market share, with production and installed volumes in August accounting for 75pc and 74pc of the total volumes, data from China Automotive Battery Innovation Alliance (Cabir) show.
- Top three producers Contemporary Amperex Technology, BYD and CALB installed 133.7GWh, 71.7GWh and 20.2GWh in January-August, accounting for 46pc, 25pc and 7pc of the country's total volumes.
- China produced 7.01mn NEVs over January-August, up by 29pc from a year earlier, with sales during the same period rising by 31pc to 7.04mn units during the same period.
- Argus-assessed costs for cathode active material NCM811 fell to \$29.29/kWh on 3 September from \$29.44/kWh on 6 August, following falls in cobalt sulphate prices. The costs for cathode active material LFP declined to \$10.03/kWh from \$10.68/kWh over the same period on continued declines in lithium carbonate prices in China.
- Argus launched a new ex-works China price for cathode active material LFP, which fell to Yn34.0-39.0/kg on 4 September from Yn35.5-40.7/kg on 7 August, in line with the decline of lithium carbonate feedstock prices.

China's battery output and newly installed volumes					
Type	Aug'24, GWh	y-o-y ± %	m-o-m ± %	Jan-Aug 24, GWh	y-o-y ± %
<b>Power and energy storage battery production</b>					
NCM/NCA	24.8	7.5	7.8	174.8	21.4
LFP	76.3	50.2	11.3	446.9	43.0
Total production	101.3	36.8	10.4	623.1	36.3
<b>Power battery newly-installed volume</b>					
NCM/NCA	12.1	12.3	6.8	85.7	23.6
LFP	35.0	45.6	16.1	206.2	37.8
Total newly-installed volume	47.2	35.3	13.5	292.1	33.2

– CABIR

## MINOR METALS: PRICE INDEXES

Argus minor metals indexes (monthly averages)					
	Unit	MTD Sep 2024 low	MTD Sep 2024 high	Month Average Aug 2024 final low	Month Average Aug 2024 final high
<b>Electronic metals</b>					
<b>Bismuth</b>					
Min 99.99% du Rotterdam	\$/lb	6.20	6.87	6.20	6.87
Min 99.99% fob China	\$/lb	5.72	5.84	6.04	6.16
Ingot min 99.99% fob US warehouse	\$/lb	6.15	6.65	6.25	6.75
<b>Gallium</b>					
Min 99.99% ex-works China	Yn/kg	2,516.67	2,600.00	2,534.44	2,628.89
Min 99.99% fob China	\$/kg	406.67	415.00	408.33	417.78
Min 99.99% cif Main Airport	\$/kg	500.00	550.00	500.00	550.00
Min 99.9999% fob China	\$/kg	385.00	415.00	388.75	418.75
<b>Germanium</b>					
Dioxide min 99.999% fob China	\$/kg	1,630.00	1,680.00	1,517.78	1,567.78
Dioxide min 99.999% cif main airport Europe	\$/kg	1,900.00	2,100.00	1,527.78	1,672.22
Metal min 99.999% cif main airport Europe	\$/kg	2,800.00	3,100.00	2,500.00	2,688.89
Dioxide min 99.999% fob China	\$/kg	1,630.00	1,680.00	1,517.78	1,567.78
Min 99.999% fob China	\$/kg	2,430.00	2,530.00	2,237.00	2,337.00
<b>Indium</b>					
Min 99.99% du Rotterdam	\$/kg	370.00	400.00	372.22	400.00
Min 99.99% fob China	\$/kg	357.00	377.00	358.00	378.00
Ingot min 99.99% fob US warehouse	\$/kg	390.00	420.00	390.00	420.00
<b>Selenium</b>					
Min 99.5% du Rotterdam	\$/lb	14.00	15.47	13.22	14.80
Min 99.5% fob US warehouse	\$/lb	11.00	11.50	10.81	11.31
<b>Tantalum</b>					
Tantalite basis 25% Ta <sub>2</sub> O <sub>5</sub> cif main port	\$/lb	75.17	77.83	72.00	74.78
Min 99.8% du Rotterdam	\$/kg	290.00	305.00	295.00	310.00
<b>Tellurium</b>					
Min 99.99% du Rotterdam	\$/kg	103.33	115.00	105.00	115.00
Min 99.95% fob US warehouse	\$/kg	75.00	80.00	75.00	80.00
<b>Zirconium</b>					
Carbonate 40% Zr (Hf)O <sub>2</sub> 0.2% Cl fob China	\$/t	2,860.00	2,930.00	2,895.00	2,965.00
Carbonate 40% Zr (Hf)O <sub>2</sub> 0.005% Cl fob China	\$/t	3,010.00	3,080.00	3,045.00	3,115.00
Oxychloride 36% Zr(Hf)O <sub>2</sub> fob China	\$/t	2,010.00	2,110.00	2,020.00	2,120.00
<b>Argus minor metals indexes (monthly averages)</b>					
	Unit	MTD Sep 2024 low	MTD Sep 2024 high	Month Average Aug 2024 final low	Month Average Aug 2024 final high
<b>Battery metals</b>					
<b>Antimony</b>					
Ingot min 99.65% fob China	\$/t	24,500.00	25,700.00	23,688.89	24,255.56
Min 99.65% cif US	\$/lb	12.70	13.30	9.80	10.00
Regulus grade II min 99.65% Sb du Rotterdam	\$/t	25,766.67	26,833.33	24,044.44	24,744.44
Regulus Trioxide grade min 99.65% Sb du Rotterdam	\$/t	25,766.67	26,833.33	24,044.44	24,755.56
Trioxide min 99.5% fob China	\$/t	19,700.00	19,800.00	19,411.11	19,600.00
<b>Cadmium</b>					
Min 99.95% du Rotterdam	\$/lb	1.77	1.87	1.76	1.86
Min 99.95% cif India	Rs/kg	391.67	400.00	385.00	393.89
Min 99.99% fob US warehouse	\$/lb	2.20	2.40	2.20	2.40
Min 99.99% du Rotterdam	\$/lb	1.82	1.92	1.81	1.91
Min 99.95% fob US warehouse	\$/lb	2.10	2.20	2.10	2.20
Min 99.99% cif India	Rs/kg	391.67	400.00	385.00	393.89
<b>Cobalt</b>					
Min 99.8% alloy grade du Rotterdam	\$/lb	14.96	16.32	15.00	16.50
Cobalt hydroxide payable indicator 30% min Co cif China (pc Argus cobalt metal)	pct	53.00	55.00	52.94	54.56
Min 99.8% fob US warehouse	\$/lb	16.15	16.65	16.08	16.58
Min 99.8% chemical grade du Rotterdam	\$/lb	11.37	12.46	11.85	12.75
Cobalt oxide 72% ex-works China	Yn/kg	113.00	118.00	115.78	120.33



## MINOR METALS: PRICE INDEXES

Argus minor metals indexes (monthly averages)					
	Unit	MTD Sep 2024 low	MTD Sep 2024 high	Month Average Aug 2024 final low	Month Average Aug 2024 final high
<b>Light metals</b>					
<b>Magnesium</b>					
Alloy min 90% Mg AZ91 fob China	\$/t	2,864.29	2,934.29	2,839.09	2,909.09
Min 99.9% fob US warehouse	\$/t	7,165.00	8,267.00	7,165.00	8,267.00
Min 99.9% du Rotterdam	\$/t	2,760.00	2,830.00	2,793.33	2,863.33
Min 99.9% fob China	\$/t	2,594.00	2,664.00	2,569.00	2,639.00
Powder 99.9% Mg 20-80 mesh fob China	\$/t	2,804.29	2,874.29	2,779.09	2,849.09
<b>Manganese</b>					
Briquette 97% Mn fob China	\$/t	1,730.00	1,780.00	1,786.36	1,842.73
Electrolytic metal min 99.7% fob US warehouse	\$/lb	1.16	1.23	1.17	1.25
Flake min 99.7% fob China	\$/t	1,690.00	1,740.00	1,746.36	1,796.36
Flake min 99.7% du Rotterdam	\$/t	1,960.00	1,986.67	2,056.67	2,115.56
Lump 95% Mn fob China	\$/t	1,740.00	1,790.00	1,796.36	1,846.36
<b>Silicon</b>					
5-5-3 min 98.5% Si fob China	\$/t	1,640.00	1,670.00	1,651.11	1,681.11
5-5-3 min 98.5% Si ddp Europe works	€/t	2,200.00	2,350.00	2,300.00	2,450.00
5-5-3 min 98.5% Si fob US warehouse	\$/lb	1.73	1.80	1.78	1.85
4-4-1 min 99% Si fob China	\$/t	1,710.00	1,740.00	1,721.11	1,751.11
4-4-1 min 99% Si ddp Europe works	€/t	2,300.00	2,500.00	2,433.33	2,566.67
3-3-0-3 min 99% Si fob China	\$/t	1,810.00	1,840.00	1,817.78	1,847.78
3-3-0-3 min 99% Si fca Europe works	€/t	2,500.00	2,700.00	2,566.67	2,766.67
2-2-0-2 min 99.5% Si fob China	\$/t	2,620.00	2,650.00	2,620.00	2,650.00
2-2-0-2 min 99.5% Si fca Europe works	€/t	2,700.00	2,800.00	2,766.67	2,866.67
<b>Titanium</b>					
Concentrate Australia origin min 50% TiO <sub>2</sub> CIF China	\$/t	300.00	330.00	300.00	330.00
Dioxide 93pc min rutile grade fob China	\$/t	2,000.00	2,150.00	2,000.00	2,150.00
Scrap 6Al 4V bulk weldable del US dealer/processor	\$/lb	4.60	5.40	4.70	5.40
Scrap 6Al 4V clips del US dealer/processor	\$/lb	3.40	3.90	3.50	4.00
Scrap grade CP1 solids del US dealer/processor	\$/lb	2.50	3.05	2.58	3.13
Scrap grade CP2 solids del US dealer/processor	\$/lb	2.05	2.25	2.09	2.29
Scrap grade CP3/4 solids del US dealer/processor	\$/lb	1.60	1.90	1.64	1.96
Scrap 6Al 4V turnings aero quality del US processor	\$/lb	3.00	3.15	3.02	3.17
Sponge TG-Tv 10x30mm du Rotterdam	\$/kg	5.50	6.00	5.37	5.90
<b>High-temperature metals</b>					
<b>Chromium</b>					
(alumino-thermic) min 99% dp Rotterdam	\$/t	8,316.67	11,433.33	8,316.67	11,500.00
Min 99.9999% fob China	\$/kg	385.00	415.00	388.75	418.75
<b>Hafnium</b>					
Min 99% max 0.5% Zr du Rotterdam	\$/kg	3,900.00	4,400.00	4,275.00	4,850.00
<b>Molybdenum</b>					
Oxide min 57% Mo in-warehouse Busan	\$/lb	21.61	21.80	21.02	21.23
Oxide min 57% Mo du Rotterdam	\$/lb Mo	21.73	21.93	21.02	21.31
Oxide min 57% fob US warehouse	\$/lb	22.00	22.60	21.80	22.40
<b>Niobium</b>					
(columbite) concentrate min 50% Nb <sub>2</sub> O <sub>5</sub> cif main port	\$/lb	17.33	18.33	17.28	18.28
<b>Rhenium</b>					
APR min 69.2% Re (basic grade) du Rotterdam	\$/kg Re	900.00	950.00	850.00	950.00
APR min 69.4% Re (catalyst grade) dp Rotterdam	\$/kg Re	1,600.00	1,790.00	1,537.50	1,750.00
Pellets min 99.9% Re dp Rotterdam	\$/lb	700.00	850.00	645.00	812.50
<b>Tungsten</b>					
APT du Rotterdam	\$/mtu WO <sub>3</sub>	325.00	335.00	325.00	335.00
APT fob China	\$/mtu WO <sub>3</sub>	330.00	335.00	320.00	325.00
Carbide powder (3-4micron) fob China	\$/kg	43.00	44.00	41.89	42.89
Oxide (Yellow/Blue oxide) fob China	\$/t	33,500.00	34,000.00	32,500.00	33,000.00
<b>Vanadium</b>					
Pentoxide fused flake min 98% du Rotterdam	\$/lb V <sub>2</sub> O <sub>5</sub>	5.50	6.00	5.59	6.09
Pentoxide 98% V <sub>2</sub> O <sub>5</sub> fob China	\$/lb	4.90	5.30	5.03	5.23

## BASE METALS: MARKET COMMENTARY

### Metal futures: Prices mostly dip on weak China

Base metals on the London Metal Exchange (LME) mostly declined in Tuesday's official morning session with the latest trade data released today out of top consumer, China, continuing to point to weak domestic consumption.

Supply risks and rising costs of production shored up aluminum, while pockets of dip buying limited downside for the rest of the complex. A strong US dollar limited risk appetite, with a corresponding rally in bond markets indicating concerns over economic growth in major economies.

Three-month LME aluminum benefited from supply risks after reports of a fire at Malaysian producer Press Metal's Sarawak smelter, with broker Marex pegging its annual capacity at around 1.3mn metric tonnes (t). The contract rose by 0.5pc to \$2,344/t.

Data released today showed China's exports reached a two-year high of \$309bn in August, growing by 8.7pc year on year in US dollar terms to its highest since September 2022. But the debt-laden property market and heightened risks of a slowdown weighed on imports which missed expectations, rising by just 0.5pc over the same period. Markets viewed this as a sign of underlying weakness in demand for industrial metals.

Investors and traders are keeping a close eye on Wednesday's US consumer price index report from the Labor Department, which analysts surveyed by Trading Economics forecast will show inflation slowed to an annual 2.6pc in August, the lowest since early 2021, from 2.9pc in July. Another report the following day may show prices paid to producers also slowed.

Three-month LME zinc fell by the most on the day, shedding by 1.3pc to \$2,698.50/t. The metal is hovering near a one-month low, with a bearish ferrous space and declines in key commodities like iron ore weighing on galvanized zinc demand.

Three-month LME copper fell by 0.6pc to \$9,064.50/t, mostly on the Chinese weakness, but falling stocks in Chinese warehouses continued to limit downside. In the US, the copper contract on the Chicago Mercantile Exchange fell by 1.1pc to \$4.10/lb.

Benchmark nickel fell by 0.4pc to \$15,830/t, with analysts indicating the metal was also being pushed lower because of the weakness in ferrous markets. A price level of less than \$16,000/t threatens the shuttering of ex-Indonesia mines. While short positions continue to build, pockets of dip-buying were heard among physical end-users to suggest the metal may be close to bottoming out.

In a blow to nickel demand, Swedish battery and cathode active material (CAM) producer Northvolt said on Monday

Aluminium					
	Unit	Date of assessment	Low	High	±
<b>Premiums</b>					
P1020 US midwest premium	\$/lb	4 Sep	0.1935	0.2000	nc
P1020 US midwest premium monthly avg	\$/lb	30 Aug	0.1935	0.2000	+0.0005
P1020 US midwest transaction	\$/lb	10 Sep	1.2467	1.2537	+0.0023
6061 billet US premium	\$/lb	4 Sep	0.0900	0.1100	nc
6063 billet del US premium	\$/lb	4 Sep	0.0900	0.1100	nc
6063 billet del US transaction	\$/lb	10 Sep	1.3367	1.3637	+0.0023
6063 extrusion premium billet del Italy	\$/t	4 Sep	600	630	-10.0
6063 extrusion premium billet del Germany	\$/t	4 Sep	600	630	-10.0
6063 extrusion duty paid premium in-warehouse Rotterdam	\$/t	4 Sep	550	580	-10.0
P1020 duty paid 3-month premium in-warehouse Rotterdam	\$/t	4 Sep	320	340	nc
P1020 duty paid premium cif Japan forward quarter	\$/t	17 Jul	172	172	na
P1020 duty paid spot premium in-warehouse Rotterdam	\$/t	4 Sep	320	340	nc
P1020 duty unpaid 3-month premium in-warehouse Rotterdam	\$/t	4 Sep	250	270	nc
P1020 duty unpaid spot premium in-warehouse Rotterdam	\$/t	4 Sep	250	270	nc
Aluminium-alloy die castings 12 ADC12 cif Japan	\$/t	5 Sep	2,400	2,450	nc
<b>Copper concentrates TC/RCs, cif China</b>					
	Unit	Timing	Assessment	±	
Smelter purchase treatment charges	\$/t	6 Sep	5.00	0.00	
Smelter purchase refining charges	€/lb	6 Sep	0.50	0.00	
Trader purchase treatment charges	\$/t	6 Sep	-10.20	-0.40	
Trader purchase refining charges	€/lb	6 Sep	-1.02	-0.04	
<b>Averages</b>					
Smelter purchase Treatment charges MTD	\$/t	6 Sep	5.00	-0.52	
Smelter purchase Treatment charges monthly average	\$/t	August	5.52	1.12	
Smelter purchase Refining charges MTD	€/lb	6 Sep	0.50	-0.05	
Smelter purchase Refining charges monthly average	€/lb	August	0.55	0.11	
Trader purchase treatment charges MTD	\$/t	6 Sep	-10.20	-0.92	
Trader purchase treatment charges monthly average	\$/t	August	-9.28	-1.18	
Trader purchase refining charges MTD	€/lb	6 Sep	-1.02	-0.09	
Trader purchase refining charges monthly average	€/lb	August	-0.93	-0.12	

that it would **halt cathode active material (CAM) production** at its plant and scale back expansion plans amid a wider slowdown of the European EV market.

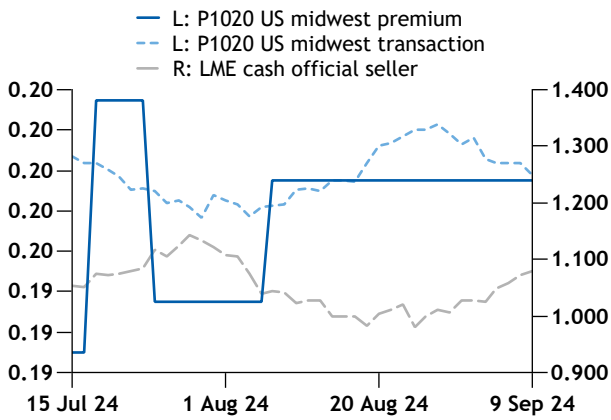
**BASE METALS: MARKET COMMENTARY**

Three-month LME lead edged up by 0.2pc to \$1,957/t, while three-month LME tin shed by 0.5pc to \$2,200/t.

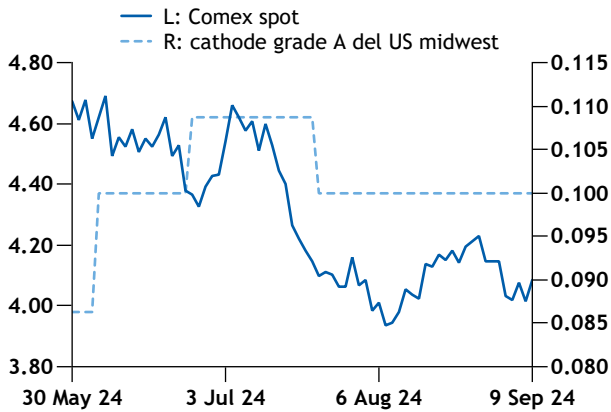
The US dollar index, which measures the dollar against a basket of six peer currencies, was range-bound at 101.650 at the end of the LME ring session, moving from 101.620 at the same time on Monday.

The October forward contract for WTI, the US crude benchmark, dropped \$2.96/bl to \$65.75/bl.

**US aluminum**

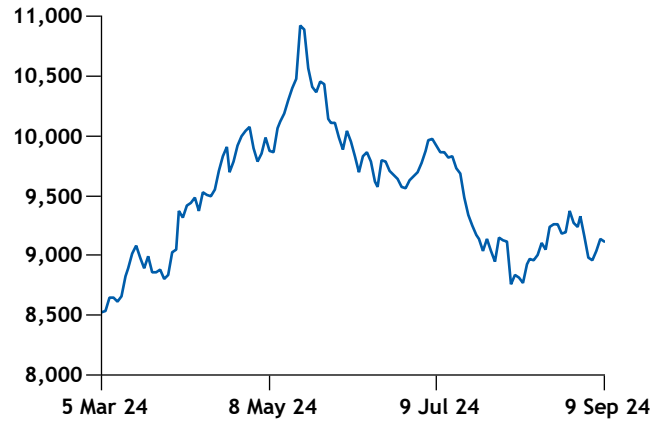


**US copper cathode premium**



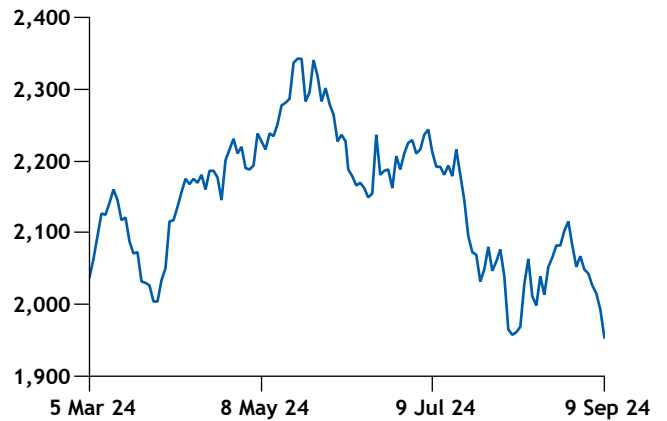
**Copper LME 3 months official**

\$/t



**Lead LME 3 months official**

\$/t



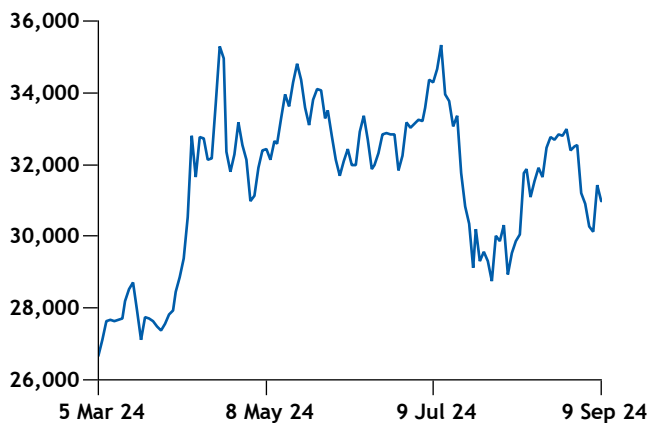
Copper cathodes and brass					
	Unit	Timing	Low	High	±
<b>Copper cathode premiums</b>					
Cathode grade A del US midwest	\$/lb	4 Sep	0.0800	0.1200	nc
Cathode grade A del US midwest transaction	\$/lb	10 Sep	4.1205	4.1605	-0.0440
Cathode grade A delivered Germany	\$/t	10 Sep	180.00	200.00	nc
Cathode grade A cif Rotterdam	\$/t	10 Sep	110.00	135.00	nc
Cathode grade A del southern Europe	\$/t	10 Sep	150.00	170.00	nc
Grade A cathode cif Shanghai	\$/t	10 Sep	65.00	70.00	nc
<b>Brass/bronze alloys del US</b>					
C89833	\$/lb	5 Sep	5.2500	5.3500	nc
C89836	\$/lb	5 Sep	5.2500	5.3500	nc

Zinc					
	Unit	Timing	Low	High	±
Special high grade in-warehouse Rotterdam premium	\$/t	9 Sep	190.00	210.00	nc
Special high grade del US premium	\$/lb	9 Sep	0.1700	0.1900	+0.0150
Special high grade del US transaction	\$/lb	10 Sep	1.3734	1.3934	-0.0131

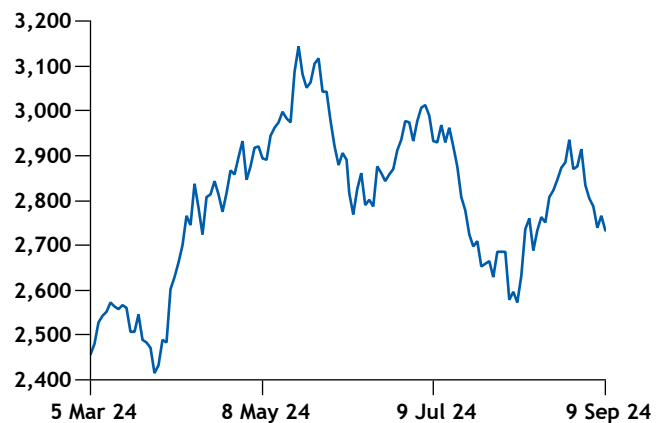
Lead					
	Unit	Timing	Low	High	±
Ingot primary 99.97% premium del US	\$/lb	10 Sep	0.1200	0.1500	nc
Ingot primary 99.97% del US transaction	\$/lb	10 Sep	0.9873	1.0173	-0.0013

Nickel					
	Unit	Timing	Low	High	±
<b>Europe</b>					
Briquette min 99.8% in-warehouse Rotterdam	\$/t	5 Sep	250.00	350.00	nc
Cathode full-plate premium (non-Russian origin) in-warehouse Rotterdam	\$/t	5 Sep	250.00	300.00	nc
Cathode full-plate premium (Russian origin) in-warehouse Rotterdam	\$/t	5 Sep	50.00	100.00	nc
Cathode 4x4 inch premium (non-Russian origin) in-warehouse Rotterdam	\$/t	5 Sep	450.00	500.00	nc
Cathode 4x4 inch premium (Russian origin) in-warehouse Rotterdam	\$/t	5 Sep	250.00	300.00	nc
Cathode full-plate (non-Russian origin) in-warehouse Rotterdam transaction	\$/t	10 Sep	15,850.00	15,910.00	-47.50
Cathode full-plate (Russian origin) in-warehouse Rotterdam transaction	\$/t	10 Sep	15,650.00	15,710.00	-47.50
Cathode 4x4 inch (non-Russian origin) in-warehouse Rotterdam transaction	\$/t	10 Sep	16,050.00	16,110.00	-47.50
Cathode 4x4 inch (Russian origin) in-warehouse Rotterdam transaction	\$/t	10 Sep	15,850.00	15,910.00	-47.50
Briquette in-warehouse Rotterdam transaction	\$/t	10 Sep	15,850.00	15,960.00	-47.50
<b>US</b>					
Briquette premium del US	\$/lb	5 Sep	0.30	0.35	nc
Cathode 4x4inch premium (small lots) del US	\$/lb	5 Sep	0.70	0.75	nc
Cathode 4x4inch premium (truckloads) del US	\$/lb	5 Sep	0.65	0.70	nc
Cathode 4x4inch (truckloads) del US transaction	\$/lb	10 Sep	7.7306	7.7806	-0.0204
Cathode 1x1inch premium (small lots) del US	\$/lb	30 Aug	1.20	1.25	nc
Cathode 1x1inch premium (truckloads) del US	\$/lb	30 Aug	1.15	1.20	-0.05
<b>China</b>					
Cathode full plate premium cif Shanghai	\$/t	5 Sep	50	100	nc
Full plate premium ex-warehouse Shanghai Jinchuan-produced	Yn/t	10 Sep	1,700	1,900	+450
Full plate premium ex-warehouse Shanghai imported	Yn/t	10 Sep	-300	100	+25
Ore min 1.8% Ni fca China	Yn/wmt	10 Sep	620	630	nc
Philippine ore min 1.3% Ni cif China	\$/wmt	5 Sep	41	42	nc
Pig iron min 10% ex-works China	Yn/mtu	10 Sep	980	1,000	-18
Nickel pig iron 10-14% cif China main port duty unpaid	\$/mtu	6 Sep	124	124	0
Mixed hydroxide precipitate (MHP) payable indicator 30-40% Ni cif China	pct	5 Sep	81.00	82.00	nc
Mixed hydroxide precipitate (MHP) 37% min cif China main port duty unpaid	\$/mtu	6 Sep	132.0	132.0	-4.3
Matte payable indicator 70% min Ni cif China	pct	5 Sep	84	85	nc
Nickel matte 70% cif China main port duty unpaid	\$/mtu	6 Sep	135.0	135.0	-6.4
Sulphate min 22% ex-works China excl. VAT USD/t	\$/t	10 Sep	3,331.62	3,381.35	-60.47
Sulphate min 22% ex-works China	Yn/t	10 Sep	26,800	27,200	-400
Sulphate min 22% cif China	\$/t	10 Sep	3,330	3,380	-45

Tin LME 3 months official



Zinc LME 3 months official



## FERRO-ALLOYS: BULK ALLOY MARKET COMMENTARY

### China: Weak demand curbs Mn alloys, FeSi

Ferro-manganese prices fell, as suppliers cut their offers to reduce inventory pressure and raise cash flow. Sufficient spot availability and slower steel demand weighed on silico-manganese and 72pc grade ferro-silicon. Ferro-chrome prices held stable in response to limited spot liquidity.

#### Ferro-chrome

Argus-assessed prices for high-carbon ferro-chrome held flat from 5 September at 8,500-8,600 yuan/t today, or Yn17.00-17.20/kg (\$1.08-1.10/lb) for contained chromium, in line with thin trading activity. Most producers quoted Yn8,500-8600/t but some traders were willing to sell at lower prices to generate cash. Muted consumer demand for stainless steel during the traditional peak season was expected to pressure alloy prices in the short term, according to market participants.

Argus-assessed prices for the main downstream product 2mm 304 stainless steel cold-rolled coil declined to Yn13,800-13,900/t ex-warehouse today from Yn14,000-14,100/t ex-warehouse on 5 September. A major stainless steel producer cut its nickel pig iron (NPI) feedstock purchase price by Yn10/ metric tonne unit (mtu) to Yn980/mtu on 9 September from 6 September; it also lowered the stainless steel ex-warehouse price by Yn100/t on 9 September. Demand in the traditional peak season has been below market expectations this year, such as from the chemical, liquor and real estate decoration industries, a source at a stainless steel processing center told Argus.

Import prices for 50-55pc grade South African charge chrome remained unchanged from 5 September at \$0.96-0.97/lb cif China today, as producers focused on fulfilling their long-term contracts. Prices for 65-70pc Kazakh alloy remained at \$1.01-1.04/lb cif China, with Indian alloy prices holding flat at \$0.96-0.97/lb cif China over the same period in response to thin trading activity.

Port prices for South African UG2 40-42pc grade concentrate, the indicator for all chrome ore prices, fell by Yn0.5/mtu from 5 September to Yn61-61.5/mtu today, in response to muted demand from ferro-chrome producers. Most trading houses quoted at Yn61.5/mtu but some traders were willing to sell at Yn61/mtu to boost sales. Chrome ore stocks at Tianjin port, which account for more than 70pc of domestic port inventories, jumped by 21.4pc compared with 29 August to 1.9mn t on 5 September, following a flurry of cargo arrivals from South Africa, data from a logistics company show. Import prices narrowed from \$300-310/t to \$300-305/t cif China over the same period in line with lower port prices.

#### Bulk alloy and feedstock prices

Market	Unit	10 Sep		±
		Low	High	
<b>Ferro-chrome</b>				
Charge chrome 52% Cr ddp Europe	\$/lb Cr	1.52	1.52	nc
HC basis 60-64.99% Cr 6-8% C ddp NWE	\$/lb Cr	1.20	1.25	nc
HC min 65% Cr 6-8% C ddp NWE	\$/lb Cr	1.50	1.70	nc
LC Cr min 65% 0.10% C ddp Europe works	\$/lb Cr	2.25	2.55	nc
LC 60-64.99% Cr. 0.10pc C ddp Europe works (per lb Cr)	\$/lb Cr	2.05	2.20	nc
Charge chrome fob US warehouse (30 Aug)	\$/lb	1.30	1.45	-0.03
HC min 62% Cr 6-8% C fob US warehouse (05 Sep)	\$/lb Cr	1.60	1.77	-0.01
LC min 65% Cr 0.05% C max 1.5% Si fob US warehouse (05 Sep)	\$/lb Cr	3.25	3.40	-0.05
LC min 65% Cr 0.10% C max 1.5% Si fob US warehouse (05 Sep)	\$/lb Cr	2.60	2.80	-0.10
LC 60% Cr 0.15% C fob US warehouse (05 Sep)	\$/lb	2.45	2.60	-0.10
HC 50% Cr ex-works China	Yn/t	8,500	8,600	nc
HC 50% Cr ex-works China USD/lb	\$/lb	0.96	0.97	nc
HC min 60% Cr ex-works India	Rs/t	106,000	107,000	-1,500
Charge chrome 50-55% Cr 6-10% C cif China	\$/lb	0.96	0.97	nc
HC Indian 60-62% Cr 6-10% C cif China	\$/lb	0.96	0.97	nc
HC Kazakh 65-70% Cr 6-8% C cif China	\$/lb	1.01	1.04	nc
<b>Chrome ore</b>				
Ore Cr <sub>2</sub> O <sub>3</sub> 48-49.99% (South Katiapani mines) OMC price ex-works India	Rs/t	25,886	25,886	nc
Ore Cr <sub>2</sub> O <sub>3</sub> 50-52% (Sukrangi mines) OMC price ex-works India	Rs/t	24,181	24,181	nc
Ore South African concentrate 42-44% Cr <sub>2</sub> O <sub>3</sub> cif China	\$/t	340.00	345.00	-5.00
Ore South African concentrate 42-44% Cr <sub>2</sub> O <sub>3</sub> fca China	Yn/mtu	63.00	63.50	nc
Ore Turkish lump 40-42% cif China	\$/t	345	350	nc
Ore Turkish lump 40-42% fca China	Yn/mtu	72.00	74.00	nc
Ore Turkish concentrate 46-48% Cr <sub>2</sub> O <sub>3</sub> cif China	\$/t	420	425	nc
Ore Turkish concentrate 46-48% Cr <sub>2</sub> O <sub>3</sub> fca China	Yn/mtu	75.00	76.00	nc
Ore South African UG2 concentrate 40-42% Cr <sub>2</sub> O <sub>3</sub> cif China main ports	\$/t	300.00	305.00	-2.50
Ore South African UG2 concentrate 40-42% Cr <sub>2</sub> O <sub>3</sub> fca China ports	Yn/mtu	61.00	61.50	-0.50
<b>Ferro-manganese</b>				
HC Mn 78% ddp Europe works	€/t	1,150	1,250	nc
MC 78% Mn 1.5-2% C 0.15-0.20 P ddp Europe works	€/t	1,550	1,600	-50
HC min 80% Mn 6-8% C fob North America warehouse (05 Sep)	\$/t	1,375	1,475	nc
MC 80% Mn 1-2% C fob North America warehouse (30 Aug)	\$/lb	0.95	1.00	nc
HC 65% Mn ex-works China	Yn/t	5,550	5,750	-50
HC 75% fob China	\$/t	1,200	1,220	-30
HC 75% Mn ex-works China	Yn/t	6,600	6,800	-200
HC 70% Mn ex-works India	Rs/t	72,000	74,000	-500
HC 75% Mn ex-works India	Rs/t	77,000	80,000	nc

## FERRO-ALLOYS: BULK ALLOY MARKET COMMENTARY

Prices for South African 42-44pc grade concentrate held unchanged from 3 September at Yn63-63.5/mtu today in response to limited market activity. Import prices fell by \$5/t to \$340-345/t cif China over the same period, in line with the fall in the UG2 import prices.

Port prices for Turkish 40-42pc lumpy remained unchanged from 5 September at Yn72-74/mtu today, while import prices were assessed flat at \$345-350/t cif China over the same period given limited market activity.

Argus launched a new port price and a new import price for Turkish 46-48pc grade concentrate on 6 August. Port prices for Turkish 46-48pc grade concentrate held flat from 5 September at Yn75-76/mtu today, while import prices were assessed flat at \$420-425/t cif China over the same period given thin trading activity. Turkish chrome ore supply was limited now because dealing in it had thin profit margins, according to trading houses.

### Ferro-manganese

The market moved down, as more suppliers cut their offers to reduce inventory pressure and raise cash flow. But spot demand showed no signs of rebounding, with more buyers still on the market sidelines while awaiting a further downtrend. Prices for 65pc grade alloy were assessed lower by Yn50/t from 5 September at Yn5,550-5,750/t ex-works today, with the range for 75pc grade alloy falling by Yn200/t to Yn6,600-6,800/t ex-works during the same period.

Chinese state-owned steel producer Hebei Iron and Steel (HBIS) cut its tender price for 2,950t of 65pc grade alloy to Yn5,700/t delivered and paid by acceptance bill for September delivery, down by Yn100/t from August.

Export prices for 75pc grade alloy fell to \$1,200-1,220/t fob China today from \$1,230-1,250/t fob on 3 September, in line with falling domestic prices and weaker export orders.

### Silico-manganese

Prices for 65/17 grade alloy were assessed lower at Yn5,800-5,950/t ex-works today against the 5 September range of Yn5,900-6,050/t ex-works, pressured by sufficient spot supplies and slower steel demand.

A Ningxia-based alloy plant, with a current output of 15,000 t/month, offered Yn5,800-5,850/t ex-works for 65/17 grade alloy, but more buyers postponed spot purchases while awaiting the release of September-delivery tender prices from HBIS.

Export prices fell to \$1,040-1,060/t fob China today from \$1,050-1,070/t fob China on 3 September, in response to a fall in domestic prices and weaker export purchases.

Manganese ore				
Ore 44-46% lumpy ore fca China	Yn/mtu	44.00	46.00	-0.50
Ore 36-38% Mn cif China (05 Sep)	\$/dmu	5.00	5.20	nc
Ore 48-50% Mn cif China (05 Sep)	\$/dmu	6.80	7.00	nc
Ore 44-46% Mn cif China (05 Sep)	\$/dmu	7.00	7.20	nc
Silico-manganese				
65% Mn ddp Europe works	€/t	1,150.00	1,190.00	nc
min 65% Mn 16% Si fob North America warehouse (05 Sep)	\$/lb	0.62	0.65	nc
65% Mn 17% Si fob China	\$/t	1,040.00	1,060.00	-10.00
65% Mn 17% Si ex-works China	Yn/t	5,800	5,950	-100
60% Mn 14% Si ex-works India	Rs/t	66,500	67,500	-500
60% Mn 14% Si fob India East Coast	\$/t	820.00	830.00	-5.00
65% Mn 16% Si fob India East Coast	\$/t	930	950	-5
Ferro-silicon				
75% Si ddp NWE	€/t	1,350	1,400	nc
min 75% Si max 0.1% C fob US warehouse (05 Sep)	\$/lb Si	1.12	1.22	-0.02
72% Si fob China	\$/t	1,200	1,250	-10
72% Si ex-works China	Yn/t	6,000	6,200	-100
75% Si fob China	\$/t	1,280	1,330	nc
75% Si ex-works China	Yn/t	6,500	6,700	nc
Low aluminium 75% Si 0.1% Al fob China	\$/t	1,430	1,480	nc
Low aluminium 75% Si 0.5% Al fob China	\$/t	1,330	1,380	nc
70% Si ex-works India	Rs/t	86,000	88,000	nc
Calcium-silicon				
min 28% Ca 55-60% Si fob China (05 Sep)	\$/t	1,630	1,640	+30
min 28% Ca 55-60% Si ex-works China (05 Sep)	Yn/t	11,200	11,300	nc
min 30% Ca 55-60% Si fob China (05 Sep)	\$/t	1,650	1,660	+30
min 30% Ca 55-60% Si ex-works China (05 Sep)	Yn/t	11,400	11,500	nc

\* Quarterly benchmark price

Prices for Australian lumpy 44-46pc grade ore were assessed lower at Yn44-46/mtu deq today compared with the 5 September range of Yn44-47/mtu deq. More trading firms were in a hurry to cut their offers to destock material in view of higher inventories and more concerns about a further downtrend.

### Ferro-silicon

The range for 72pc grade alloy fell to Yn6,000-6,200/t ex-works today, down by Yn100/t from 5 September in line with weaker demand from the downstream steel industries, with a few deals done at Yn6,000/t today.

Prices for 75pc grade alloy were assessed at Yn6,500-6,700/t ex-works today, the same as 5 September, with most producers maintaining their offers in line with stable demand from the downstream magnesium industry.

The most traded October future contracts for 72pc grade alloy on the Zhengzhou Commodity Exchange closed at Yn6,020/t today, down from Yn6,050/t on 9 September and

## FERRO-ALLOYS: BULK ALLOY MARKET COMMENTARY

from Yn6,134/t on 5 September.

Export prices kept unchanged from 5 September at \$1,280-1,330/t fob today for 75pc grade alloy but fell by \$10/t to \$1,200-1,250/t fob for 72pc grade alloy over the same period, following lower domestic prices.

### Europe: MC FeMn falls

Medium carbon ferro-manganese prices slipped today, during an otherwise quiet period for the bulk alloys market. Ferro-chrome prices stayed firm today, but remain under pressure from lower cost Indian material. Indian ferro-chrome has flooded the European market, with Indian producers moving aggressively to gain market share, although some European end users do not purchase the material because of concerns about quality and sustainability.

### Ferro-chrome

Argus assessed high carbon ferro-chrome min 60-64.99pc prices at \$1.20-1.25/lb ddp NWE, flat from 5 September. A trader said cheaper Indian material is pushing prices down, but congestion at ports has restricted movement of material from India to Europe. Indian prices have continued to decrease, with Argus-assessed Indian export and domestic ferro-chrome prices falling in the most recent assessment period.

European high carbon ferro-chrome min 65pc prices were also unchanged today at \$1.50-1.70/lb ddp NWE. One trader sold material with a phosphorus content of 0.020pc at \$1.74/lb ddp. Low phosphorus content sells at a premium, and he said that prices of standard grade material are around \$1.60/lb. The European high carbon ferro-chrome market remains weak, and significant quantities of material remains available in European warehouses. There have been fewer than expected enquiries coming out of the summer period, a trader said, and those enquiries have been for small quantities of material, around 20-50t. Another trader pegged prices of high carbon ferro-chrome min 65pc above the assessed range, but it remains to be seen if prices higher than \$1.70/lb ddp are achievable.

The Argus assessed prices of low carbon ferro-chrome min 60-64.99pc remained flat today at \$2.05-2.20/lb ddp Europe works. One trader pegged prices at or above \$2.10/lb.

Argus assessed low carbon ferro-chrome min 65pc at \$2.25-2.55/lb ddp Europe works. A trader sold 25t of Indian

material at \$2.34/lb ddp. Indian material, which trades below Kazakh, Albanian, and Turkish ferro-chrome because of concerns about quality and ESG metrics, has been flooding the European market in recent months and putting downward pressure on ferro-chrome prices.

### Ferro-manganese

High carbon ferro-manganese prices stayed flat today at €1,150-1,250/t ddp Europe works. One trader pegged prices at €1,170-1,200/t ddp. No index-relevant transactions were reported.

Medium carbon ferro-manganese prices decreased today to €1,550-1,600/t ddp Europe works because of multiple indications that buyers will no longer purchase above €1,600/t ddp. One trader said a customer purchased medium carbon material at €1,600/t ddp.

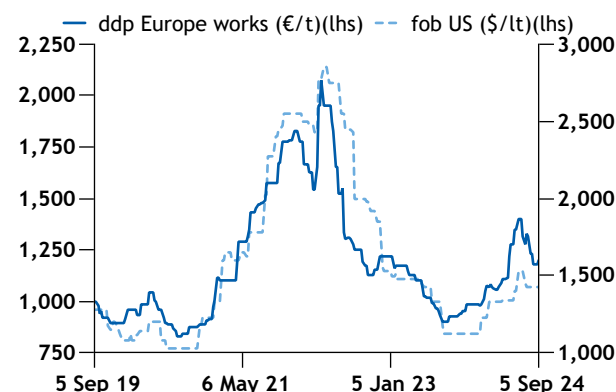
### Silico-manganese

The Argus assessed prices of silico-manganese stayed firm today at €1,150-1,190/t ddp Europe works. A trader said that there has been limited activity and no significant tenders in this pricing period, with steel mills not yet back in the European market at full scale.

### Ferro-silicon

Ferro-silicon prices were flat today at €1,350-1,400/t ddp NWE. A trader said ferro-silicon prices are hovering around €1,300/t ddp. Another pegged prices in line with the Argus range. No market relevant transactions were reported.

### HC Ferro-manganese 78% Mn Europe v USA



## FERRO-ALLOYS: NOBLE ALLOY MARKET COMMENTARY

### China: FeMo, FeW, FeV prices fall

Weaker demand and lower tender prices from steel mills weighed on ferro-molybdenum, ferro-tungsten and ferro-vanadium.

#### Ferro-molybdenum

Domestic prices for 60pc grade alloy were assessed at 240,000-243,000 yuan/t (\$33,705-34,126/t) ex-works today, or Yn400-405/kg for contained molybdenum, down by Yn2,000/t against 5 September, in response to lower-than-expected tender prices from steelmakers. Export prices dropped to \$56.50-57/kg fob from \$57-57.50/kg fob during the same period.

Chinese steelmakers have purchased around 6,000t of the alloy so far this month. Many steelmakers were reluctant to purchase the alloy at higher prices in view of thin profit margins and limited steel orders, and they concluded tenders at Yn238,000-240,000/t on a delivery basis in the recent two days. Several alloy suppliers lowered their offers by Yn2,000-3,000/t from late last week to Yn242,000-243,000/t ex-works in the past couple of days. However, most market participants expected prices to stay firm in the coming two days because of sustained restocking activity from steel producers.

Prices for 45pc grade concentrate were assessed at Yn3,730-3,760/mtu ex-works today, down by Yn30/mtu against 5 September, in response to weak buying interest from alloy producers. The range for 57pc grade roasted concentrate moved down to Yn3,830-3,860/mtu ex-works from Yn3,860-3,890/mtu during the same period.

#### Ferro-tungsten

Prices for 75pc grade alloy dipped by Yn1,000/t from a week earlier to Yn215,000-217,000/t ex-works today, with lower offers and bids heard in the spot market. There were deals done at Yn215,00/t over the past week, while most alloy producers were still offering at Yn216,000-217,000/t in response to slim profit margins squeezed by firm concentrate costs. There are further downside risks in the coming days if concentrate costs slip and steelmakers continue to operate from stocks, sources said. Only one steelmaker issued a 5t buying

Noble-alloy and feedstock prices				
Market	Unit	10 Sep		±
		Low	High	
<b>Ferro-boron</b>				
17% B fob US warehouse (30 Aug)	\$/lb	1.80	2.00	-0.22
<b>Ferro-molybdenum</b>				
65-70% Mo dp Rotterdam	\$/kg Mo	51.50	52.00	-0.30
min 65% Mo max 1.5% Si fob North America warehouse (05 Sep)	\$/lb Mo	23.900	24.300	+0.075
60% Mo fob China	\$/kg	56.50	57.00	nc
60% Mo ex-works China	Yn/t	240,000	243,000	nc
60% Mo ex-works India	Rs/kg	2,550	2,600	+25.00
<b>Ferro-niobium</b>				
min 65% Nb du Rotterdam	\$/kg Nb	45.60	46.50	nc
65% Nb fob US warehouse (30 Aug)	\$/lb	21.00	22.00	nc
min 66% Nb Brazilian Imports fca China port	Yn/t	233,000	235,000	-1,000
<b>Ferro-tungsten</b>				
min 75% W du Rotterdam	\$/kg W	42.00	43.00	+0.25
75% W fob North America warehouse (30 Aug)	\$/lb	21.75	23.00	+1.12
75% W ex-works China	Yn/t	215,000	217,000	-1,000
min 75% W fob China	\$/kg	41.00	42.00	nc
<b>Ferro-titanium</b>				
Russian min 70% Ti dap Europe	\$/kg Ti	5.60	6.00	-0.25
min 70% Ti dp/duty-free Rotterdam	\$/kg Ti	6.60	6.80	nc
UK min 70% Ti ex-works	\$/kg Ti	6.60	6.80	nc
70% Ti fob North America warehouse (05 Sep)	\$/lb	3.15	3.25	nc
30% Ti ex-works China	Yn/t	12,200	12,400	nc
70% scrap grade ex-works China	Yn/t	29,000	30,000	-500
<b>Titanium</b>				
Turnings 90/6/4 max 0.5% Sn ddp NWE	\$/kg	3.85	4.25	nc
Scrap min 85% Ti tin-bearing mixed turnings del US dealer/processor (05 Sep)	\$/lb	1.05	1.15	nc
Scrap min 85% Ti non-tin-bearing mixed turnings del US dealer/processor (05 Sep)	\$/lb	1.15	1.30	nc
<b>Ferro-vanadium</b>				
78-82% V dp Rotterdam	\$/kg V	26.25	27.00	+0.12
78-82% V max 1.5% Si fob North America warehouse (05 Sep)	\$/lb V	12.450	12.700	nc
50% V ex-works China	Yn/t	83,000	85,000	nc
80% V fob China	\$/kg	25.00	25.50	nc
50% V ex-works India	Rs/kg	1,120	1,150	-5.00
<b>Vanadium-nitrogen alloy</b>				
Vanadium-nitrogen alloy 77% V 18% N ex-works China	Yn/t	112,000	114,000	nc



tender in September, while other steelmakers seemed not interested in building up stocks or were well covered by term supplies, according to market participants.

Export prices for the alloy remained stable from the same period in the range of \$41-42/kg fob, as exporters were holding their offers stable despite a fall in domestic prices. This was also owing to robust buying interest from international buyers who must seek the alloy from China after the US sanctions on Russia since 2022. China exported 1,424t of ferro-tungsten in the first seven months, up from 1,264t during the same period a year earlier, customs data showed.

### Ferro-vanadium

The market weakened further in response to slow demand and lower tender prices from steel mills for September delivery. Prices for 50pc grade alloy widened to Yn83,000-85,000/t ex-works today from Yn84,000-85,000/t ex-works on 5 September.

Most steel mills continued to lower tender prices to save their production costs, with mainstream tender prices falling to Yn84,500-85,000/t on a delivered basis and paid by acceptance bill with value-added tax (VAT) today from Yn85,000-86,000/t on 5 September.

Some alloy smelters cut their offers because of lower demand and falling bid prices from steel producers, coupled with reduced pentoxide flake feedstock costs. Several alloy smelters suspended operations in response to narrower profit margins and weaker steel demand.

A Liaoning-based alloy smelter was inclined to sell the alloy at Yn83,000/t ex-works paid by cash on the spot market because buyers did not accept higher prices given slow purchases from steel mills and lower steel prices. A Shanghai-based trading house delayed purchasing the alloy, expecting spot alloy prices to move lower in the coming days because of a weaker steel market.

Prices for pentoxide flake fell to Yn74,000-76,000/t ex-works today from Yn75,000-76,000/t ex-works on 5 September, as alloy smelters were unwilling to purchase flake at higher prices caused by slow demand and lower tender prices from steel producers.

Small- and medium-sized flake suppliers cut their offers following major Chinese vanadium pentoxide flake suppliers Sichuan Chuanwei, Sichuan Desheng and Chengde Jianlong did not ink any contracts with regular consumers for September delivery at Yn77,500/t on a delivered basis plus VAT payable by acceptance bill and at Yn76,000/t paid by cash.

Export prices for 80pc grade held stable from 5 September at \$25-25.50/kg fob China today, as increased buying interest and higher bid prices from international consumers offset the reduced domestic prices.

### Europe: FeW, FeV up but FeMo down

European ferro-vanadium and ferro-tungsten prices edged up as traders are testing out higher offers, but ferro-molybdenum prices fell further as European spot demand remained subdued.

### Ferro-molybdenum

European ferro-molybdenum prices dropped further to \$51.50-52/kg duty paid Rotterdam today from \$51.80-52.30/kg on 5 September on slow demand. Trade in Europe calmed at the end of last week ahead of an industry conference this week in Tokyo, but prices experienced a slight rebound today from Monday. Although some higher offers are still being reported, the overall lack of spot enquiries ensured prices remained below the levels of last week.

Chinese steelmakers have purchased around 6,000t of the alloy so far this month. Export prices also dropped to \$56.50-57/kg fob China from \$57-57.50/kg fob on 5 September.

### Ferro-niobium

Ferro-niobium prices have been stable at \$45.60-46.50/kg duty unpaid since 25 July due to slow spot activity in Europe and limited competition in a market with fewer participants compared to other noble alloys. No new index-relevant deals were confirmed to *Argus* as most demand is covered by long term contracts, but some lower offers are now being heard.

### Ferro-titanium

Russian ferro-titanium prices in Europe moved lower today, pressured by stronger availability as urgency grows for sellers of approved material to close trades before the final ban on all sales kicks in from December. The *Argus* assessment for Russian ferro-titanium moved down to \$5.60-6/kg Ti dap Europe (import duty unpaid) from \$5.80-6.30/kg on 5 September, with some traders stating there is availability below this level.

European and UK ferro-titanium prices were stable as firm raw material costs continued to balance out weak demand. The Europe assessment was flat at \$6.60-6.80/kg Ti dp/df Rotterdam and the UK assessment was unmoved at \$6.60-6.80/kg Ti ex-works.

The assessment for 90/6/4 titanium turnings was steady at \$3.85-4.20/kg ddp northwest Europe.

One trader said it was in no hurry to sell ferro-titanium at current low prices because there is not enough scrap available to push down input costs to an equivalent level. Another trader said some European producers are mitigating high raw material costs by purchasing low-cost titanium sponge from China, which allows them to utilise lower-grade and cheaper scrap in their melt.

## FERRO-ALLOYS: NOBLE ALLOY MARKET COMMENTARY

### Ferro-tungsten

European ferro-tungsten prices edged up to \$42-43/kg duty paid Rotterdam today from \$42-42.50/kg on 5 September as higher offers circulated due to a tightening of general concentrate supply. A 5t deal was heard at \$43/kg, and material is also available at the lower end of the range, driven by ongoing speculation and market uncertainty.

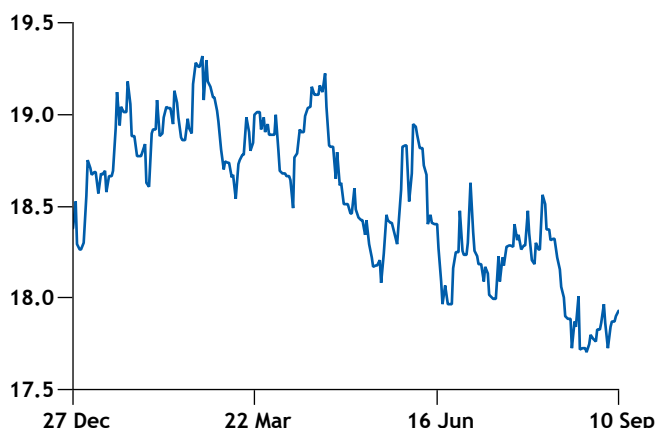
China's tungsten market is under downside pressure following lower than expected term bids updated by key consumers including Xiamen Tungsten and Zhangyuan Tungsten. Asian steelmakers do not currently seem interested in building up stocks or are well covered by term supplies, according to market participants.

### Ferro-vanadium

Argus' European ferro-vanadium assessment continued to gradually rise, reaching \$26.25-27/kg duty paid Rotterdam today from \$26.25-26.75/kg on 5 September. Small tonnage deals were reported above the given range, while market participants continued to peg the market around \$26.50/kg. Suppliers maintained elevated offers following the announcement of US sanctions on Russia's vanadium supply lines targeting the Evraz Group's operations. Some sellers sought to capitalise on uncertainty induced by the new measure by offering above \$27/kg, but others considered the bump to be short lived and speculative.

Chinese export prices for 80pc grade held stable from 5 September at \$25-25.50/kg fob China today, as increased buying interest and higher bid prices from international consumers offset the reduced domestic prices.

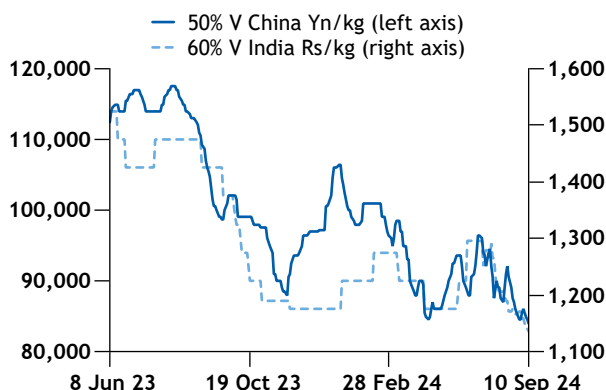
### USD v ZAR



### Stainless steel scrap prices

Market	Unit	5 Sep		±
		Low	High	
<b>Nickel</b>				
Nickel-Cobalt refinery scrap nickel contained del US processor (30 Aug)	\$/lb	3.00	3.50	nc
<b>Stainless steel scrap</b>				
Stainless steel scrap 304 (18-8) solids cif Rotterdam	\$/lb	0.619	0.644	-0.041
Stainless steel scrap 304 (18-8) solids cif Rotterdam EUR/t	€/t	1,230.0	1,280.0	-85.0
Stainless steel scrap 304 (18-8) solids cif Japan	\$/lb	0.60	0.61	nc
Stainless steel scrap 304 (18-8) solids cif South Korea	\$/lb	0.57	0.58	nc
Stainless steel scrap 304 (18-8) solids cif Taiwan	\$/lb	0.57	0.58	nc
Stainless steel scrap 409/410 solids del US processor	\$/t	448.00	493.00	nc
Stainless steel scrap 430 solids del US processor	\$/t	560.00	605.00	-11.00
<b>Finished stainless steel</b>				
Stainless steel 304/2B cold rolled coil 2mm ex-warehouse China (10 Sep)	Yn/t	13,800.00	13,900.00	-200.00
Stainless steel 304 cold rolled 2mm sheet delivered northwest Europe month (30 Aug)	€/t	2,850.00	2,900.00	-25.00
Stainless steel 316 cold rolled 2mm sheet delivered northwest Europe month (30 Aug)	€/t	4,200.00	4,300.00	-50.00
Stainless steel 304 cold rolled 2mm sheet surcharge ex-works Europe month (30 Aug)	€/t	2,021.67	2,021.67	-119.33
Stainless steel 316 cold rolled 2mm sheet surcharge ex-works Europe month (30 Aug)	€/t	3,374.00	3,374.00	-225.00
Stainless steel 430 cold rolled 2mm sheet surcharge ex-works Europe month (30 Aug)	€/t	994.67	994.67	-31.33

### Ferro-vanadium ex-works, 50% V China v 60% V India



## FERRO-ALLOYS: PRICE INDEXES

Monthly averages					
	Unit	Month Average Sep 2024 low	Month Average Sep 2024 high	Month Average Aug 2024 final low	Month Average Aug 2024 final high
<b>Ferro-chrome</b>					
HC basis 60-64.99% Cr 6-8% C ddp NWE	\$/lb Cr	1.20	1.25	1.24	1.29
HC min 65% Cr 6-8% C ddp NWE	\$/lb Cr	1.53	1.70	1.59	1.70
LC Cr min 65% 0.10% C ddp Europe works	\$/lb Cr	2.25	2.58	2.25	2.62
LC 60-64.99% Cr. 0.10% C ddp Europe works (per lb Cr)	\$/lb Cr	2.05	2.20	2.05	2.20
HC min 62% Cr 6-8% C fob US warehouse	\$/lb Cr	1.60	1.77	1.68	1.86
LC min 65% Cr 0.05% C max 1.5% Si fob US warehouse	\$/lb Cr	3.25	3.40	3.34	3.49
LC min 65% Cr 0.10% C max 1.5% Si fob US warehouse	\$/lb Cr	2.60	2.80	2.70	2.90
LC 60% Cr 0.15% C fob US warehouse	\$/lb	2.45	2.60	2.55	2.70
<b>Ferro-manganese</b>					
HC Mn 78% ddp Europe works	€/t	1,146.67	1,240.00	1,151.67	1,245.56
MC 78% Mn 1.5-2% C 0.15-0.20 P ddp Europe works	€/t	1,575.00	1,625.00	1,600.00	1,650.00
HC min 80% Mn 6-8% C fob North America warehouse	\$/t	1,375.00	1,475.00	1,375.00	1,475.00
<b>Manganese ore</b>					
Ore 44-46% lumpy ore fca China	Yn/mtu	44.00	46.67	52.00	54.11
<b>Silico-manganese</b>					
65% Mn ddp Europe works	€/t	1,150.00	1,190.00	1,158.89	1,206.67
min 65% Mn 16% Si fob North America warehouse	\$/lb	0.62	0.65	0.62	0.65
65% Mn 17% Si fob China	\$/t	1,045.00	1,065.00	1,110.00	1,130.00
60% Mn 14% Si fob India East Coast	\$/t	820.00	836.67	838.33	853.89
<b>Ferro-silicon</b>					
75% Si ddp NWE	€/t	1,350.00	1,400.00	1,383.33	1,440.00
Low aluminium 75% Si 0.1% Al fob China	\$/kg	1,430.00	1,480.00	1,453.33	1,503.33
Low aluminium 75% Si 0.5% Al fob China	\$/kg	1,330.00	1,380.00	1,353.33	1,403.33
72% Si fob China	\$/t	1,206.67	1,256.67	1,226.67	1,276.67
75% Si fob China	\$/t	1,283.33	1,333.33	1,308.89	1,358.89
min 75% Si max 0.1% C fob US warehouse	\$/lb Si	1.12	1.22	1.12	1.21
<b>Calcium-silicon</b>					
min 28% Ca 55-60% Si fob China	\$/t	1,630.00	1,640.00	1,616.00	1,648.00
min 30% Ca 55-60% Si fob China	\$/t	1,650.00	1,660.00	1,636.00	1,668.00
<b>Ferro-molybdenum</b>					
65-70% Mo dp Rotterdam	\$/kg Mo	51.77	52.27	50.55	51.07
min 65% Mo max 1.5% Si fob North America warehouse	\$/lb Mo	23.90	24.30	23.91	24.27
60% Mo fob China	\$/kg	56.69	57.19	54.17	55.08
<b>Ferro-niobium</b>					
min 65% Nb du Rotterdam	\$/kg Nb	45.60	46.50	45.60	46.50
min 66% Nb Brazilian Imports fca China port	Yn/t	233,000.00	236,000.00	233,500.00	237,000.00
<b>Ferro-tungsten</b>					
min 75% W du Rotterdam	\$/kg W	42.00	42.67	41.06	41.83
min 75% W fob China	\$/kg	41.00	42.00	40.70	41.70
<b>Ferro-titanium</b>					
Russian min 70% Ti dap Europe	\$/kg Ti	5.73	6.20	5.69	6.33
min 70% Ti dp/duty-free Rotterdam	\$/kg Ti	6.60	6.80	6.69	6.92
UK min 70% Ti ex-works	\$/kg Ti	6.60	6.80	6.69	6.92
70% Ti fob North America warehouse	\$/lb	3.15	3.25	3.19	3.34
<b>Ferro-Vanadium</b>					
78-82% V dp Rotterdam	\$/kg V	26.17	26.75	25.42	25.79
78-82% V max 1.5% Si fob North America warehouse	\$/lb V	12.450	12.700	12.350	12.620
80% V fob China	\$/kg	24.94	25.44	24.56	25.09

## RARE EARTHS: MARKET COMMENTARY

### China: Prices fall as ore imports resume

Prices for most light, medium and heavy rare earths fell after short-lived steep hikes over the past few days, pressured by the lifting of China’s ban on ore feedstock imports from Myanmar and consumers’ resistance in accepting rare earth products at much higher offers. Spot demand was muted, with more buyers opting to take a wait-and-see approach for a clear price direction.

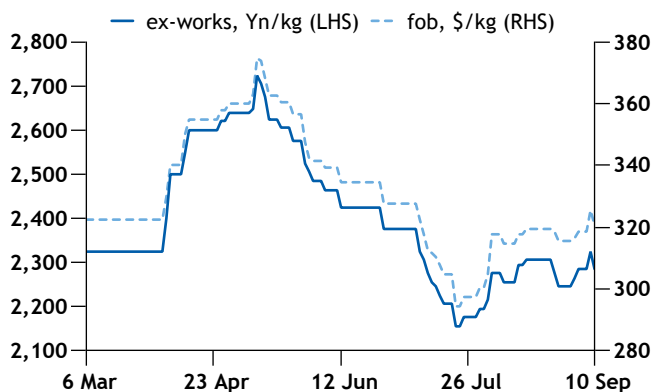
Major Chinese light rare earth producer Northern Rare Earth (NRE) on 9 September launched an auction for 50t of 99pc praseodymium-neodymium metal on the Baotou Rare Earth Products Exchange (Repe), but the firm concluded deals for only 5t of the material at a starting price of Yn525,000/t today. The smaller auction volumes and weaker consumer demand dented market sentiment and exerted a downward pressure on the spot market.

Some market participants remain bearish on the short-term medium and heavy rare earth market, as a potential rise in ore feedstock imports from Myanmar after the end of the rainy season in the country, as well as sufficient spot supplies of rare earth products and no signs of stockpiling activity from large rare earth companies, are more likely to further pressure spot prices.

#### Light rare earths

Argus assessed domestic prices for 99pc praseodymium-neodymium oxide at 420-425 yuan/kg (\$58.99-59.69/kg) ex-works today, down from the 5 September assessment of Yn427-430/kg, in response to a slowdown in purchases from metal and magnet producers. Oxide suppliers cut offers to promote sales and ensure profit on the back of reduced buying interest from metal producers, after prices rose late last week because of a rising number of metal transactions. The market heard transactions at Yn420/kg ex-works today, down from Yn440/kg on 9 September. Export prices fell to \$59.20-60.20/kg fob today from \$60.30-60.80/kg fob on 5

#### Chinese dysprosium 99.5% min export and ex-works



China export and delivered Europe prices					
Element	units	Date	Low	High	±
<b>Cerium</b>					
Carbonate min 45% REO fob China	\$/kg	10 Sep	0.54	0.64	nc
Metal min 99% fob China	\$/kg	10 Sep	5.10	5.40	nc
Metal min 99.9% C 0.03% max. Fe 0.2% max fob China	\$/kg	10 Sep	6.70	6.90	nc
Oxide 99.5-99.9% fob China	\$/t	10 Sep	1,230	1,280	nc
Oxide 99.5-99.9% cif Europe	\$/kg	2 Sep	1.60	2.10	nc
<b>Dysprosium</b>					
Metal min 99% fob China	\$/kg	10 Sep	318.00	323.00	-5.00
Dysprosium oxide min 99.5% fob China	\$/kg	10 Sep	253.00	258.00	-7.00
Oxide min 99.5% cif Europe	\$/kg	2 Sep	260.00	280.00	nc
<b>Europium</b>					
Metal min 99.9% fob China	\$/kg	2 Sep	265.00	275.00	nc
Oxide min 99.99% fob China	\$/kg	2 Sep	25.50	28.50	nc
<b>Erbium</b>					
Oxide min 99.5% cif Europe	\$/kg	2 Sep	45.00	47.00	+0.50
<b>Ferro-dysprosium</b>					
min 80% Dy fob China	\$/kg	10 Sep	248.00	253.00	-2.00
<b>Gadolinium</b>					
Metal min 99% fob China	\$/kg	10 Sep	45.50	50.50	nc
Oxide min 99.99% fob China	\$/t	10 Sep	28,500.00	29,500.00	nc
Oxide min 99.999% fob China	\$/t	10 Sep	30,500.00	32,500.00	nc
<b>Holmium</b>					
Oxide min 99.5% fob China	\$/t	10 Sep	74,500.00	75,500.00	nc
<b>Lanthanum</b>					
Metal min 99% fob China	\$/kg	10 Sep	4.80	5.10	nc
Metal min 99.9% C 0.03% max. Fe 0.2% max fob China	\$/kg	10 Sep	6.70	6.90	nc
Oxide 99.5-99.9% fob China	\$/t	10 Sep	950	1,000	nc
Oxide min 99.999% fob China	\$/kg	10 Sep	2.60	2.80	nc
<b>Lutetium</b>					
Oxide min 99.99% fob China	\$/kg	10 Sep	750.00	780.00	nc
<b>Mischmetal</b>					
35% La 65% Ce fob China	\$/kg	2 Sep	5.30	5.60	nc
Low Zn and Mg fob China	\$/kg	2 Sep	24	27	nc
<b>Neodymium</b>					
Metal min 99% fob China	\$/kg	10 Sep	74.70	75.70	-2.50
Oxide 99.5-99.9% fob China	\$/t	10 Sep	60,300	60,800	-2,450
Metal 99% cif Europe	\$/kg	2 Sep	75.00	79.00	+9.00
Oxide 99.5-99.9% cif Europe	\$/kg	2 Sep	60.00	65.00	+6.50
<b>Praseodymium</b>					
Metal min 99% fob China	\$/kg	10 Sep	77.70	78.70	-2.80
Oxide 99.5-99.9% fob China	\$/t	10 Sep	60,300	60,800	-2,450
<b>Praseodymium-Neodymium</b>					
Metal min 99% fob China	\$/kg	10 Sep	74.00	75.00	-2.80
Praseodymium-Neodymium oxide min 99% fob China	\$/t	10 Sep	59,200	60,200	-2,800
<b>Samarium</b>					
Metal min 99% fob China	\$/kg	10 Sep	12.00	12.50	nc
Oxide min 99.5% fob China	\$/kg	10 Sep	1.88	2.13	nc
<b>Terbium</b>					
Metal min 99.9% fob China	\$/kg	10 Sep	1,040.00	1,060.00	-15.00
Oxide min 99.99% fob China	\$/kg	10 Sep	850.00	870.00	-15.00
Oxide min 99.99% cif Europe	\$/kg	2 Sep	770.00	860.00	+15.00
<b>Ytterbium</b>					
Oxide min 99.99% fob China	\$/t	10 Sep	12,600.00	14,800.00	nc
<b>Yttrium</b>					
Metal min 99.9% fob China	\$/kg	10 Sep	32.00	34.50	nc
Oxide min 99.999% fob China	\$/t	10 Sep	6,000	6,300	nc
Oxide 99.999% cif Europe	\$/kg	2 Sep	6.10	6.70	-0.05

## RARE EARTHS: MARKET COMMENTARY

September.

The range for 99pc praseodymium-neodymium metal was assessed at Yn525-530/kg ex-works today, down by Yn2/kg from the low end against 5 September, following a fall in oxide feedstock prices and limited demand from magnet producers. Magnet manufacturing plants were reluctant to replenish more metal feedstock at higher prices in view of squeezed profit margins after a sustained rise in prices. The market reported transactions at Yn530/kg paid by cash within 30 days over the past two days. Export prices fell to \$74-75/kg fob today from \$74.50-75/kg fob on 5 September.

Domestic prices for 99.5-99.9pc neodymium oxide were assessed at Yn427-430/kg ex-works today, down by Yn3/kg against 5 September, in line with falling praseodymium-neodymium oxide prices and weak demand from metal producers. Export prices fell to \$60.30-60.80/kg fob from \$60.80-61.30/kg fob on 5 September.

Prices for 99pc neodymium metal remained flat from 5 September at Yn530-535/kg ex-works today, but down by Yn18/kg from 9 September, in line with a fall in oxide feedstock prices and limited enquiries from magnet producers.

Lower praseodymium-neodymium oxide prices and subdued demand from metal producers weighed on the praseodymium oxide market, pushing prices for 99.5-99.9pc praseodymium oxide down to Yn427-430/kg ex-works today from Yn430-433/kg on 5 September. Export prices fell to \$60.30-60.80/kg fob from \$60.80-61.30/kg fob during the same period.

### Monazite

Prices rose to Yn40,500-42,500/t ex-works today, corresponding to Yn4,921-5,164/t for the PrO + NdO value contained in the product, from Yn37,500-40,000/t ex-works on 3 September, in response to increased buying enquires from rare earth chloride producers and lower spot availability.

Some zirconium-titanium beneficiation producers were inclined to sell above Yn40,500/t ex-works on the spot market because of lower stocks and higher bid prices from rare earth chloride producers. A Guangxi-based zirconium-titanium beneficiation producer operated at lower capacity because of reduced zircon sand prices and weak demand from the zirconium industry. A Zhanjiang-based trading house sold 100t of the material to a regular consumer at Yn40,500/t ex-works on 9 September, as the firm expects it will be unlikely for transaction prices to exceed Yn42,500/t ex-works today as prices for praseodymium-neodymium have begun to fall in response to weaker consumer buying.

China domestic ex-works prices					
Element	units	Freq.	Low	High	±
<b>Cerium</b>					
Carbonate min 45% REO ex-works	Yn/t	10 Sep	3,200	3,700	nc
Metal min 99.9% C 0.03% max. Fe 0.2% max ex-works	Yn/t	10 Sep	39,000	41,000	nc
Metal min 99% ex-works	Yn/t	10 Sep	26,000	28,000	nc
Oxide 99.5-99.9% ex-works	Yn/t	10 Sep	7,300	7,800	nc
<b>Dysprosium</b>					
Metal min 99% ex-works	Yn/kg	10 Sep	2,260	2,310	-40
Oxide min 99.5% ex-works	Yn/kg	10 Sep	1,790	1,810	-50
<b>Erbium</b>					
Oxide min 99.5% ex-works	Yn/t	10 Sep	305,000	310,000	nc
<b>Europium</b>					
Oxide min 99.99% ex-works	Yn/kg	2 Sep	175	185	nc
<b>Ferro-dysprosium</b>					
min 80% Dy ex-works	Yn/kg	10 Sep	1,760	1,780	-20
<b>Ferro-gadolinium</b>					
min 75% Gd ex-works	Yn/t	10 Sep	175,000	179,000	nc
<b>Gadolinium</b>					
Metal min 99% ex-works	Yn/t	10 Sep	325,000	345,000	nc
Oxide 99.5-99.9% ex-works	Yn/t	10 Sep	181,000	185,000	nc
Oxide min 99.99% ex-works	Yn/t	10 Sep	200,000	210,000	nc
<b>Holmium</b>					
Oxide min 99.5% ex-works	Yn/t	10 Sep	530,000	535,000	nc
<b>Lanthanum</b>					
Metal min 99% ex-works	Yn/t	10 Sep	24,000	26,000	nc
Metal min 99.9% C 0.03% max. Fe 0.2% max ex-works	Yn/t	10 Sep	39,000	41,000	nc
Oxide min 99.999% ex-works	Yn/t	10 Sep	12,500	14,500	nc
Oxide 99.5-99.9% ex-works	Yn/t	10 Sep	4,200	4,700	nc
Ce chloride min 45% REO ex-works	Yn/t	2 Sep	2,000	2,500	nc
<b>Lutetium</b>					
Oxide min 99.99% ex-works	Yn/kg	10 Sep	5,300	5,500	nc
<b>Mischmetal</b>					
35% La 65% Ce ex-works	Yn/t	2 Sep	26,000	27,000	nc
Low Zn and Mg ex-works	Yn/t	2 Sep	160,000	180,000	nc
<b>Neodymium</b>					
Metal min 99% ex-works	Yn/t	10 Sep	530,000	535,000	-18,000
Oxide 99.5-99.9% ex-works	Yn/t	10 Sep	427,000	430,000	-17,000
<b>Praseodymium</b>					
Metal min 99% ex-works	Yn/t	10 Sep	550,000	560,000	-20,000
Oxide 99.5-99.9% ex-works	Yn/t	10 Sep	427,000	430,000	-17,000
<b>Praseodymium-Neodymium</b>					
Metal min 99% ex-works	Yn/t	10 Sep	525,000	530,000	-20,000
Oxide min 99% ex-works	Yn/t	10 Sep	420,000	425,000	-20,000
<b>Samarium</b>					
Metal min 99% ex-works	Yn/t	10 Sep	84,000	87,000	nc
Oxide min 99.5% ex-works	Yn/t	10 Sep	12,000	14,000	nc
<b>Terbium</b>					
Metal min 99.9% ex-works	Yn/kg	10 Sep	7,400	7,500	-200
Oxide min 99.99% ex-works	Yn/kg	10 Sep	6,000	6,100	-200
<b>Ytterbium</b>					
Oxide min 99.99% ex-works	Yn/t	10 Sep	90,000	105,000	nc
<b>Yttrium</b>					
Metal min 99.9% ex-works	Yn/kg	10 Sep	210.00	225.00	nc
Oxide min 99.999% ex-works	Yn/t	10 Sep	42,000	45,000	nc

## RARE EARTHS: MARKET COMMENTARY

### Medium and heavy rare earths

Prices for dysprosium and terbium fell significantly today after sharp rises on 9 September, as the Chinese government lifted its bans on ore feedstock imports from Myanmar and a great number of consumers were reluctant to make spot purchases at higher offers.

The range for 99.5pc dysprosium oxide was assessed at Yn1,790-1,810/kg ex-works today, down from Yn1,840-1,860/kg ex-works on 9 September, but up from the 5 September range of Yn1,780-1,800/kg ex-works. There were no deals closed over the past two days, as more buyers were inclined to take a wait-and-see approach for further market developments. Export prices were assessed at \$253-258/kg fob today, down from \$260-265/kg fob on 9 September, but up from \$251-256/kg fob on 5 September.

The range for 80pc ferro-dysprosium was assessed at Yn1,760-1,780/kg ex-works today, down from Yn1,780-1,800/kg ex-works on 9 September, but up from Yn1,750-1,770/kg ex-works on 5 September, in line with price fluctuations in the oxide feedstock market. But more magnet plants withheld material from spot purchases while they await even lower prices in the near term. Export prices were assessed at \$248-253/kg fob today, down from \$250-255/kg fob on 9 September, but up from \$247-252/kg fob on 5 September, following price volatility in the domestic market.

The range for 99.99pc terbium oxide was assessed at Yn6,000-6,100/kg ex-works today, down from Yn6,100-6,400/

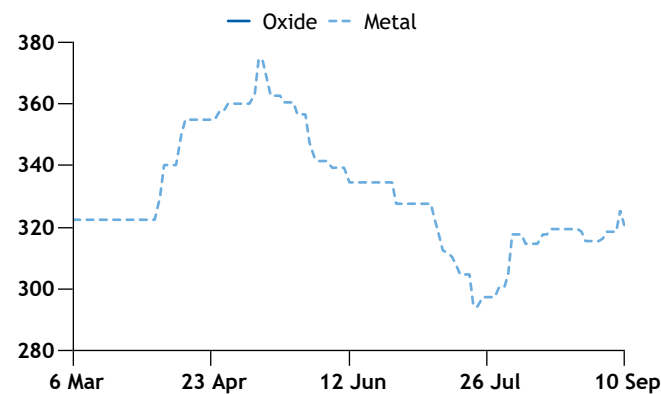
kg ex-works on 9 September, but higher than Yn5,650-5,750/kg ex-works on 5 September. But more metal plants postponed feedstock purchase, especially when the market had entered a price downtrend. More market participants expect prices to drop further in view of higher spot supplies and more ore feedstock imports from Myanmar after the end of the rainy season.

Price fluctuations in the oxide feedstock market and weaker magnet demand pushed down the range for 99.9pc terbium metal to Yn7,400-7,500/kg ex-works today from the 9 September range of Yn7,500-7,800/kg ex-works. But it remained higher than the 5 September range of Yn7,000-7,100/kg ex-works, as more suppliers were reluctant to sell lower in anticipation of further market developments. More magnet plants showed almost no interest in restocking material at such high prices, opting to operate from their inventories and postpone spot purchases.

The export market was muted, with more seaborne buyers inclined to do back-to-back purchases or withdraw from spot purchases. Export prices for 99.99pc terbium oxide were assessed at \$850-870/kg fob today, down from \$860-890/kg fob on 9 September, but up from \$800-820/kg fob on 5 September. The export range for 99.9pc terbium metal was assessed at \$1,040-1,060/kg fob today, down from \$1,050-1,080/kg fob on 9 September, but higher than \$990-1,010/kg fob on 5 September.

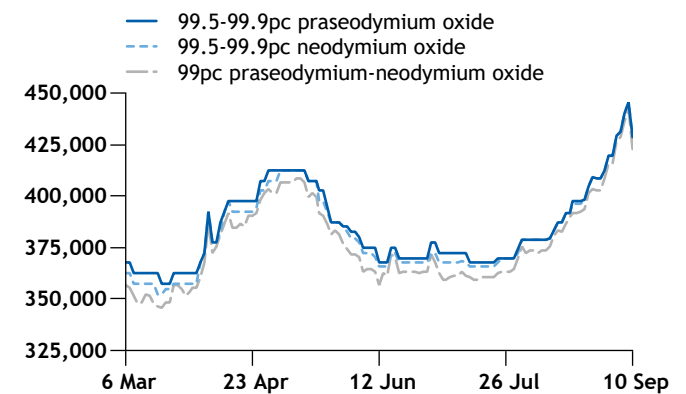
Dysprosium oxide and metal fob China

\$/kg



Praseodymium and neodymium ex-works China

Yn/t



## RARE EARTHS: NEWS AND ANALYSIS

### Rare Earth Salts wins US funds for Tb oxide

Nebraska-based Rare Earth Salts has been awarded \$4.2mn by the US defence department to develop and increase production of terbium oxide and other rare earth materials from recycled fluorescent light bulbs.

Terbium is a key input to make neodymium iron boron (NdFeB) magnets and – alongside dysprosium – has a particularly China-centric supply chain that is difficult to diversify owing in large part to the requirement for specific types of ore deposit.

"This award adds a domestic source for one of the most difficult-to-obtain rare earth elements," Dr Laura Taylor-Kale, assistant defence secretary for industrial base policy said yesterday. The award is funded through the Defense Production Act Investment office and aligns with the US goal of bolstering supply chains by expanding domestic production of critical materials.

Alongside terbium, Rare Earth Salts will also recover more lanthanum, cerium, europium and yttrium as co-products.

The company, located in Beatrice near the Nebraska-Kansas border, has developed non-solvent extraction technology to produce oxides for neodymium, praseodymium and terbium – three of the four highly sought-after rare earth magnet materials – alongside several other rare earths.

In August 2023, it began commercial-scale production and sales – domestic and international – of high-purity terbium and yttrium oxides extracted from recycled feedstock, making it the only fully US-based source of heavy rare earth oxides. It also began producing light rare earth oxides last year – cerium, europium and lanthanum – from recycled feedstock.

By Ellie Saklatvala

### China's NRE rolls over Pr/Nd auction prices

Chinese light rare earths producer Northern Rare Earth (NRE) today concluded an auction sale for 50t of praseodymium-neodymium metal on the Baotou Rare Earth Products Exchange.

NRE sold only 5t of the metal in the auction, unchanged from its starting prices of 525 yuan/kg (\$74/kg). It failed to close the auction sale for the remaining 45t of the metal. It did not disclose more details about buyers.

Several metal trading firms cut offers by Yn20/kg from 9 September to Yn525/kg ex-works today, while most metal producers stopped quoting for new deals to await the auction sale.

The conclusion of the auction met most market partici-

pants' expectations. "Prices are likely to move down further on the back of weak magnet demand," a source from a metal producing plant said.

NRE is on schedule to launch a new auction sale for 50t of the metal on 11 September. It has maintained the starting prices at Yn525/kg.

Argus assessed domestic prices for 99pc praseodymium-neodymium metal at Yn525-530/kg ex-works today, down by Yn20/kg against 9 September in line with falling oxide feedstock prices and limited buying interest from magnet producers. Prices for 99pc oxide were assessed lower by Yn20/kg at Yn420-425/kg ex-works during the same period.

NRE [increased its sales](#) for rare earth oxide, metal and other related products during January-June. It sold 16,925t of rare earth metal in the first half, up by 23.5pc from a year earlier.

### China's January-August rare earth exports rise

China's rare earth exports during January-August increased compared with a year earlier, as export price falls raised buying appetite among seaborne buyers for Chinese-origin volumes.

January-August shipments rose by 6pc from a year earlier to 38,755t, customs data show. The average export price during this period fell to \$8,804/t from \$15,668/t a year earlier.

August exports fell by 1pc on the year and by 4pc on the month to 4,722t. The average export price in August fell by 36pc on the year and by 3pc on the month to \$8,661/t.

Rare earths are the main feedstock in magnet manufacturing, and the new energy vehicle (NEV) industry accounts for 35-40pc of magnet consumption in China.

China produced 1.092mn NEVs in August, up by 30pc from the previous year and by 11pc from July, with sales increasing by 30pc from a year earlier and by 11pc from the previous month to 1.1mn, according to data from the China Association of Automobile Manufacturers. NEV production totalled 7.008mn units over January-August, up by 29pc from a year earlier, with sales increasing by 31pc to 7.037mn over the same period.

NEV sales accounted for 26pc of the country's total automotive sales in 2022, and this share rose to 31.6pc in 2023. In 2024, the share of NEV sales in total automotive sales has risen further to 36pc in April, 39.5pc in May, 41.1pc in June, 43.8pc in July and 44.8pc in August.

## RARE EARTHS: PRICE INDEXES

Argus rare earths indexes (cumulative averages)					
element		MTD	MTD	Month Average	Month Average
	Unit	Sep 2024 low	Sep 2024 high	Aug 2024 final low	Aug 2024 final high
<b>Cerium</b>					
Metal min 99.9% C 0.03% max. Fe 0.2% max fob	\$/kg	6.70	6.90	6.70	6.90
Metal min 99% fob	\$/kg	5.10	5.40	5.10	5.40
Oxide 99.5-99.9% fob	\$/t	1,230.00	1,280.00	1,230.00	1,280.00
<b>Dysprosium</b>					
Metal min 99% fob	\$/kg	316.57	321.57	313.50	318.50
Oxide min 99.5% fob	\$/kg	249.71	254.71	243.50	248.50
<b>Ferro-dysprosium</b>					
min 80% Dy fob	\$/kg	244.14	249.14	238.68	243.68
<b>Gadolinium</b>					
Metal min 99% fob	\$/kg	45.43	50.43	44.14	49.14
Oxide min 99.99% fob	\$/t	28,214.30	29,214.30	27,068.20	28,250.00
Oxide min 99.999% fob	\$/t	30,333.33	32,333.33	30,000.00	32,000.00
<b>Holmium</b>					
Oxide min 99.5% fob	\$/t	73,857.10	74,642.90	71,772.70	72,272.70
<b>Lanthanum</b>					
Metal min 99.9% C 0.03% max. Fe 0.2% max fob	\$/kg	6.70	6.90	6.70	6.90
Metal min 99% fob	\$/kg	4.80	5.10	4.80	5.10
Oxide 99.5-99.9% fob	\$/t	950.00	1,000.00	950.00	1,000.00
Oxide min 99.999% fob	\$/kg	2.60	2.80	2.60	2.80
<b>Lutetium</b>					
Oxide min 99.99% fob	\$/kg	750.00	780.00	757.50	787.50
<b>Neodymium</b>					
Metal min 99% fob	\$/kg	74.80	75.73	67.38	68.08
Oxide 99.5-99.9% fob	\$/t	60,585.71	61,228.57	54,581.82	55,172.73
<b>Praseodymium</b>					
Metal min 99% fob	\$/kg	77.97	78.76	72.21	73.21
Oxide 99.5-99.9% fob	\$/t	60,585.71	61,228.57	54,581.82	55,240.91
<b>Praseodymium-Neodymium</b>					
Metal min 99% fob	\$/kg	74.16	74.94	66.85	67.57
Oxide min 99% fob	\$/t	60,028.57	60,671.43	54,090.91	54,581.82
<b>Samarium</b>					
Metal min 99% fob	\$/kg	12.00	12.50	12.00	12.50
Oxide min 99.5% fob	\$/kg	1.88	2.13	1.88	2.13
<b>Terbium</b>					
Metal min 99.9% fob	\$/kg	989.29	1,010.71	927.50	947.50
Oxide min 99.99% fob	\$/kg	802.14	823.57	748.18	768.18
<b>Ytterbium</b>					
Oxide min 99.99% fob	\$/t	12,600.00	14,800.00	12,600.00	14,800.00
<b>Yttrium</b>					
Metal min 99.9% fob	\$/kg	32.00	34.50	32.00	34.50
Oxide min 99.999% fob	\$/t	6,000.00	6,300.00	6,033.33	6,366.67



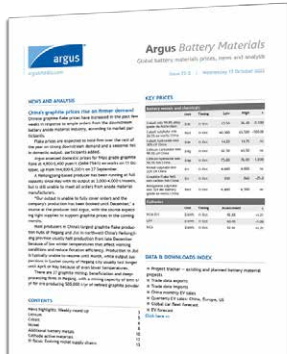


## Argus Battery Materials

Over 130 price battery material prices, decades of historical data, forecasts for key battery metals and chemicals

### Includes:

- Lithium, cobalt, nickel and other battery materials
- Cathodes (NCM 811, NCA, LFP)
- Downloadable analytics for EVs, renewables and more
- Assessments for key inputs, e.g. sulphuric acid



Download a sample and request a trial of Argus Battery Materials

[view.argusmedia.com/BatteryMaterials](http://view.argusmedia.com/BatteryMaterials)

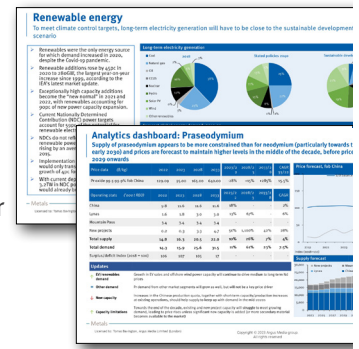


## Argus Rare Earths Analytics

Detailed market analysis and 10-year forecasts for supply, demand, prices and projects for rare earths

### Includes:

- Analytics on Nd, Pr, Dy, Tb & more
- 10 year market and price outlooks
- Industry outlooks for EVs, magnets and more
- Supply, demand and trade data



Request a demo for an introduction to Argus Rare Earths Analytics

[view.argusmedia.com/RareEarthsAnalytics](http://view.argusmedia.com/RareEarthsAnalytics)



Argus Non-Ferrous Markets is published by Argus Media group

Registered office  
Lacoin House, 84 Theobald's Road,  
London, WC1X 8NL  
Tel: +44 20 7780 4200

ISSN: 2755-9610

Copyright notice  
Copyright © 2024 Argus Media group  
All rights reserved

All intellectual property rights in this publication and the information published herein are the exclusive property of Argus and/or its licensors (including exchanges) and may only be used under licence from Argus. Without limiting the foregoing, by accessing this publication you agree that you will not copy or reproduce or use any part of its contents (including, but not limited to, single prices or any other individual items of data) in any form or for any purpose whatsoever except under valid licence from Argus. Further, your access to and use of data from exchanges may be subject to additional fees and/or execution of a separate agreement, whether directly with the exchanges or through Argus.

**Trademark notice**  
ARGUS, the ARGUS logo, ARGUS MEDIA, INTEGER, ARGUS NON-FERROUS MARKETS, other ARGUS publication titles and ARGUS index names are trademarks of Argus Media Limited.  
Visit [www.argusmedia.com/Ft/trademarks](http://www.argusmedia.com/Ft/trademarks) for more information.

**Disclaimer**  
The data and other information published herein (the "Data") are provided on an "as is" basis. Argus and its licensors (including exchanges) make no warranties, express or implied, as to the accuracy, adequacy, timeliness, or completeness of the Data or fitness for any particular purpose. Argus and its licensors (including exchanges) shall not be liable for any loss, claims or damage arising from any party's reliance on the Data and disclaim any and all liability related to or arising out of use of the Data to the full extent permissible by law.

All personal contact information is held and used in accordance with Argus Media's Privacy Policy <https://www.argusmedia.com/en/privacy-policy>

**Publisher**  
Adrian Banks

**Global compliance officer**  
Vladas Stankevicius

**Chief commercial officer**  
Jo Loudiadis

**President, Expansion Sectors**  
Christopher Flook

**Global head of editorial**  
Neil Fleming

**Editor in chief**  
Jim Washer

**Managing editor**  
Andrew Bonnington

**Editor**  
Ronan Murphy  
Tel: +44 20 7199 6535  
[nonferrous@argusmedia.com](mailto:nonferrous@argusmedia.com)

### Customer support and sales:

[support@argusmedia.com](mailto:support@argusmedia.com)  
[sales@argusmedia.com](mailto:sales@argusmedia.com)

London, Tel: +44 20 7780 4200

Houston, Tel: +1 713 968 0000

Singapore, Tel: +65 6496 9966



Metals

illuminating the markets®