Non-ferrous Prices

Methodology and price specifications – March 2019
Contents

3 Mission statement
   Introduction
4 Price discovery and methodology
6 Price specifications
   Base metals
   6 Alumina
   6 Aluminium
   10 Aluminium billet
   11 Aluminium foundry alloys
   12 Copper concentrate
   12 Blister copper
   13 Refined copper
   16 Copper rod
   17 Lead concentrate
   17 Refined lead
   20 Nickel
   22 Tin
   23 Zinc concentrate
   24 Refined zinc

   Bulk alloys
   28 Ferro-chrome
   30 Ferro-manganese
   31 Ferro-silicon
   31 Silico-manganese
   32 Ferro-nickel
   32 Nickel Pig Iron

   Noble alloys
   33 Molybdenum
   33 Titanium
   34 Tungsten
   34 Ferro-tungsten
   35 Vanadium

   Ores
   36 Bauxite
   36 Chrome ore
   37 Manganese ore
   37 Manganese ore stocks
   37 Nickel ore

   Minor metals
   39 Antimony
   39 Arsenic
   40 Bismuth
   40 Cadmium
   40 Chromium
   41 Cobalt
   41 Cobalt sulfate
   41 Gallium
   42 Germanium
   42 Hafnium
   43 Indium
   43 Magnesium
   43 Manganese
   44 Mercury
   44 Rhenium
   44 Selenium
   45 Silicon
   45 Tellurium

   Battery Raw Materials
   46 Aluminium
   46 Copper
   47 Lead
   47 Tin

   Scrap
   48 Copper scrap
   48 Aluminium scrap
   50 Secondary aluminium
   50 Titanium
Mission statement

Fastmarkets is a leading commodity price reporting agency (PRA) covering the metals, mining, minerals and forest products industries. Our products include Fastmarkets MB, Fastmarkets AMM, Fastmarkets IM, Fastmarkets RISI, Fastmarkets FOEX and Random Lengths. For more than 100 years we have been providing commodities price reporting services for use by market participants in their day-to-day commercial activities. These services include assessments and indices of commodity prices as well as news, research and commentary on the underlying markets.

Our mission is to meet the market’s data requirements honestly and independently, acting with integrity and care to ensure that the trust and confidence placed in the reliability of our pricing methodologies is maintained. We do not have a vested interest in the markets on which we report.

Introduction

Fastmarkets MB is the leading global provider of pricing intelligence for the non-ferrous metal, steel, steelmaking raw materials, industrial minerals, ferrous and non-ferrous scrap markets, producing price assessments since 1913.

Fastmarkets MB reporters are required to abide by a code of conduct and clear pricing procedures during their market reporting and pricing activities. Fastmarkets is completely independent and has no vested commercial interest in any of the markets it prices.

We are the world’s largest dedicated metals price reporting team. We have offices in London, New York, Pittsburgh, Shanghai, Hong Kong, Sao Paulo, Melbourne, Singapore, Mumbai, Dnep, Istanbul and five other US locations.

The aim of this document is to provide a clear overview of Fastmarkets MB’s methodology and specifications for the prices it assesses.

If you have any questions, please contact Fastmarkets Editorial Director Alex Harrison at aharrison@fastmarkets.com.
Price discovery and methodology

Methodology rationale
Fastmarkets MB produces independent, fair and representative price assessments and indices of non-ferrous prices on a daily, bi-weekly, weekly or monthly basis.

Fastmarkets MB’s rationale is to adopt and develop the price discovery process and methodology described in this guide to produce assessments that are a consistent and representative indicator of value of the market to which they relate for the trading period they cover.

During the price discovery process, the price reporter’s goal is to discover at what representative level market participants have concluded business, made offers or received bids over a certain defined trading period – this is generally the period since the conclusion of the previous price quotation (if, for instance, the last price assessment published by Fastmarkets MB was on Friday 2-3pm London time and our next assessment is due on the following Friday at 2-3pm London time, we will accept price data for business conducted and reported to Fastmarkets MB between Friday afternoon and the following Friday morning).

The time period, or window, identified to assess a market (eg, daily, bi-weekly, weekly, monthly) is determined by Fastmarkets MB after considering the number of data points that Fastmarkets MB can reasonably expect to collect on a consistent basis over the selected period to support the price assessment process.

Data collection criteria
Fastmarkets MB reporters aim to talk to a broad sample of market participants specifically involved in the buying and selling of the non-ferrous product of interest, with a good representation of both sides of the market, including producers and consumers, as well as traders.

Data is collected from market participants directly involved in spot business primarily by telephone but also by email, digital messaging or by direct submission. All input data received is kept confidential and stored on a secure network.

Fastmarkets MB encourages organisations to submit all their pricing data, especially all the concluded transactions.

Depending on market liquidity, Fastmarkets MB reserves the right to also base its prices on bids, offers, deals heard and market participants’ assessments or indications of prevailing values.

Fastmarkets MB welcomes organisations to submit transaction data from authorised back-office functions.

Price specifications and reference units
Fastmarkets MB has clear specifications for all the price points that it covers. All the reference units, such as currency and volume, are in line with the trading conventions used in the recognised non-ferrous metals markets.

Fastmarkets MB’s specifications detail the material’s characteristics or quality, location, incoterm, payment terms and the minimum volume accepted. These specifications are determined in consultation with market participants and follow industry convention. Reporters ensure that the information they receive matches these specifications.

Guidelines that control the exercise of judgment by price reporters during the assessment process
To produce the price assessment, greater weighting is generally given to actual concluded transaction data; bids/offers are second in order of importance; followed by data sources’ own assessment of the market when they have no business to report. But other considerations might also intervene such as, the trustworthiness of a data source based on past data submissions or their willingness to provide data on a consistent basis.

All Fastmarkets MB price specifications define the minimum lot size accepted. When volume information is available, this is also taken into consideration in the assessment process. For instance, a deal with a bigger volume will typically carry more weight than a smaller-volume transaction. But price reporters will also consider, for instance, normalizing or discarding a price reported for a deal with an abnormally large or small volume.

Since commodity markets differ in liquidity levels at different periods, the methodology does not set any minimum number, or threshold, of transactions to be gathered on which to base the assessment.
Third-party price data

Fastmarkets also publishes prices from external sources including:

Exchange prices – London Metal Exchange, Comex and the Shanghai Futures Exchange

For contract specifications and pricing information on these prices please refer to the individual company’s website.

Fastmarkets MB indices

Fastmarkets MB’s prices also include the following non-ferrous indices:

- Fastmarkets MB Alumina Index
- Fastmarkets MB Manganese Ore Indices
- Fastmarkets MB Copper Concentrates Index
- Fastmarkets MB Lithium Carbonate Index
- Fastmarkets MB Ferro-chrome Index
- Fastmarkets MB Chrome Ore Index

The methodologies are available on the Fastmarkets MB website.
Base metals

Bauxite

Please see Ores section.

Alumina

CHINA

Assessment: Alumina metallurgical grade DDP China
Grade: Smelter-grade alumina, minimum purity of 98.5% Al2O3
Quantity: 10,000 tonnes
Location: FOB Bunbury/Kwinana (other ports normalized)
Timing: Within 2 months
Unit: USD/dry metric tonne
Payment Terms: 30 days after loading
Publication: Daily at 4pm London time
Notes: Full methodology available here

AUSTRALIA

Assessment: Alumina fob Bunbury, Australia, Index, single figure
Grade: Smelter-grade alumina, minimum purity of 98.5% Al2O3
Quantity: 10,000 tonnes
Location: FOB Bunbury/Kwinana (other ports normalized)
Timing: Within 2 months
Unit: USD/dry metric tonne
Payment Terms: 30 days after loading
Publication: Daily at 4pm London time
Notes: Full methodology available here

BRAZIL

Assessment: Alumina fob Vila do Conde, Brazil (Adjustment), index, single figure
Grade: Smelter grade alumina, minimum purity of 98.5% Al2O3
Quantity: 10,000 tonnes
Location: FOB Vila do Conde, Brazil (other ports normalized)
Timing: Within 2 months
Unit: USD/dry metric tonne
Payment Terms: 30 days after loading
Publication: Fortnightly. Thursday at 4pm London time
Notes: Full methodology available here

Aluminium

JAPAN

Assessment: Aluminium P1020A quarterly cif main Japanese ports (MJP), single number or range
Grade: P1020A or 99.7 % Minimum Al purity (Si 0.10% max, Fe 0.20% max)
Quantity: 500 tonnes
Location: cif main Japanese ports (Yokohama, Nagoya and Osaka), premium on top of LME cash prices
Timing: Within the quarter
Unit: USD/tonne
Form: Ingot, T-bar, sow
Payment terms: Cash against documents (2 days after Bill of lading date)
Publication: Quarterly
Notes: Full methodology available here

Assessment: Aluminium P1020A, spot cif main Japanese ports (MJP)
Grade: P1020A or 99.7 % Minimum Al purity (Si 0.10% max, Fe 0.20% max) in line with LME specifications
Quantity: 100 tonnes
Location: cif in main Japanese ports at Yokohama, Nagoya and Osaka, premium on top of LME cash prices
Unit: USD/tonne
Origin: Excluding metal from LME warehouses and metal subject to international sanctions
Timing: Within 4 weeks
Form: Ingot, T-bar, sow
Payment terms: Cash against documents (2 days after Bill of lading date)
Publication: Twice weekly. Tuesday and Friday by 4pm London time
Notes: Assessed by Metal Bulletin's Singapore office
### SOUTH KOREA

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Aluminium P1020A cif South Korea, single number and range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade:</td>
<td>P1020A or 99.7 % Minimum Al purity (Si 0.10% max, Fe 0.20% max)</td>
</tr>
<tr>
<td>Quantity:</td>
<td>100 tonnes</td>
</tr>
<tr>
<td>Location:</td>
<td>Cif in main South Korean ports (Gwangyang, Busan or Incheon), premium on top of LME cash prices</td>
</tr>
<tr>
<td>Unit:</td>
<td>USD/tonne</td>
</tr>
<tr>
<td>Timing:</td>
<td>Within 4 weeks</td>
</tr>
<tr>
<td>Form:</td>
<td>Ingot, T-bar, sow</td>
</tr>
<tr>
<td>Payment terms:</td>
<td>Cash against documents (2 days after Bill of lading date)</td>
</tr>
<tr>
<td>Publication:</td>
<td>Weekly. Tuesday 3-4pm London</td>
</tr>
</tbody>
</table>

### CHINA

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Aluminium P1020A fca South Korea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade:</td>
<td>P1020A or 99.7 % Minimum Al purity (Si 0.10% max, Fe 0.20% max)</td>
</tr>
<tr>
<td>Quantity:</td>
<td>100 tonnes</td>
</tr>
<tr>
<td>Location:</td>
<td>FCA South Korea (Gwangyang, Busan or Incheon), premium on top of LME cash prices</td>
</tr>
<tr>
<td>Unit:</td>
<td>USD/tonne</td>
</tr>
<tr>
<td>Timing:</td>
<td>Within 4 weeks</td>
</tr>
<tr>
<td>Form:</td>
<td>Ingot, T-bar, sow</td>
</tr>
<tr>
<td>Payment terms:</td>
<td>Cash against documents (2 days after Bill of lading date)</td>
</tr>
<tr>
<td>Publication:</td>
<td>Weekly. Tuesday 3-4pm London</td>
</tr>
</tbody>
</table>

### TAIWAN

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Aluminium P1020A cif Taiwan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade:</td>
<td>P1020A or 99.7 % Minimum Al purity (Si 0.10% max, Fe 0.20% max)</td>
</tr>
<tr>
<td>Quantity:</td>
<td>100 tonnes</td>
</tr>
<tr>
<td>Location:</td>
<td>Cif main Taiwanese ports (Taipei, Kaohsiung or Keelung), premium on top of LME cash prices</td>
</tr>
<tr>
<td>Unit:</td>
<td>USD/tonne</td>
</tr>
<tr>
<td>Form:</td>
<td>Ingot</td>
</tr>
<tr>
<td>Payment terms:</td>
<td>Letter of Credit or Telegraphic Transfer, other payment terms normalised</td>
</tr>
<tr>
<td>Publication:</td>
<td>Weekly. Tuesday 3-4pm London</td>
</tr>
</tbody>
</table>

### SOUTHEAST ASIA

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Aluminium P1020A in-warehouse Southeast Asian warrants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade:</td>
<td>P1020A or 99.7 % Minimum Al purity (Si 0.10% max, Fe 0.20% max)</td>
</tr>
<tr>
<td>Quantity:</td>
<td>25 tonnes</td>
</tr>
<tr>
<td>Location:</td>
<td>In any LME-approved warehouse in Singapore and in Malaysia (Johor, Port Klang), premium on top of LME cash prices</td>
</tr>
<tr>
<td>Unit:</td>
<td>USD/tonne</td>
</tr>
<tr>
<td>Timing:</td>
<td>Prompt release</td>
</tr>
<tr>
<td>Form:</td>
<td>Ingot, T-bars, Sow</td>
</tr>
<tr>
<td>Payment terms:</td>
<td>Letter of Credit or Telegraphic Transfer, other payment terms normalised</td>
</tr>
<tr>
<td>Publication:</td>
<td>Weekly. Tuesday 3-4pm London</td>
</tr>
</tbody>
</table>
### EAST ASIA

**Assessment**  
Aluminium P1020A in-warehouse East Asian warrants

**Location:** In any LME-approved warehouse in Taiwan (Kaohsiung) and South Korea (Gwangyang, Busan or Incheon), premium on top of LME cash prices

**Grade:** P1020A or 99.7 % Minimum Al purity (Si 0.10% max, Fe 0.20% max)

**Unit:** USD/tonne

**Quantity:** 25 tonnes

**Timing:** Prompt release

**Form:** Ingot, T-bars, Saw

**Payment terms:** Cash against documents (7 days after bill of lading date); other terms normalised

**Publication:** Weekly, Tuesday 3-4pm London time

---

**Assessment**  
Aluminium P1020A fca Italy duty-paid

**Grade:** P1020A or 99.7 % Minimum Al purity (Si 0.10% max, Fe 0.20% max)

**Location:** Free-carrier duty-paid Italy (north and south of country), premium on top of LME cash prices

**Quantity:** 100 tonnes

**Timing:** Within 4 weeks

**Unit:** USD/tonne

**Form:** Ingot

**Payment terms:** Cash against documents (7 days after bill of lading date); other terms normalised

**Publication:** Weekly. Tuesday 3-4pm London time

---

**Assessment**  
Aluminium P1020A fca Spain duty-paid

**Location:** free-carrier duty-paid Spain, premium on top of LME cash prices

**Grade:** P1020A or 99.7 % Minimum Al purity (Si 0.10% max, Fe 0.20% max)

**Quantity:** 100 tonnes

**Timing:** Within 4 weeks

**Unit:** USD/tonne

**Form:** Ingot

**Payment terms:** Cash against documents (7 days after bill of lading date); other terms normalised

**Publication:** Weekly. Tuesday 3-4pm London time

---

### EUROPE

**Assessment**  
Aluminium P1020A in-warehouse Rotterdam duty-unpaid

**Type:** Assessed single number and range

**Grade:** P1020A or 99.7 % Minimum Al purity (Si 0.10% max, Fe 0.20% max)

**Quantity:** 100 tonnes

**Location:** In-warehouse Rotterdam duty-unpaid, premium on top of LME cash prices

**Unit:** USD/tonne

**Timing:** Within 4 weeks

**Form:** Ingot

**Payment terms:** Cash against documents (7 days after bill of lading date); other terms normalised

**Publication:** Daily. 3-4pm London time

---

**Assessment**  
Aluminium P1020A in-warehouse Rotterdam duty-paid

**Grade:** P1020A or 99.7 % Minimum Al purity (Si 0.10% max, Fe 0.20% max)

**Quantity:** 100 tonnes

**Location:** In-warehouse Rotterdam duty-paid, premium on top of LME cash prices

**Unit:** USD/tonne

**Timing:** Within 4 weeks

**Form:** Ingot

**Payment terms:** Cash against documents (7 days after bill of lading date); other terms normalised

**Publication:** Twice weekly. Tuesday and Friday 3-4pm London time

---

### TURKEY

**Assessment**  
Aluminium P1020A cif duty-unpaid Turkey

**Grade:** P1020A or 99.7 % Minimum Al purity (Si 0.10% max, Fe 0.20% max)

**Location:** CIF duty-unpaid Turkey (Marmara region), premium on top of LME cash prices

**Quantity:** 100 tonnes

**Timing:** Within 4 weeks

**Unit:** USD/tonne

**Form:** Ingot

**Payment terms:** Cash against documents (7 days after bill of lading date); other terms normalised

**Publication:** Weekly. Tuesday, 3-4pm London time
### UNITED STATES

**Assessment**
Aluminium P1020A in-warehouse US warrants

**Grade:** P1020A or 99.7 % Minimum Al purity (Si 0.10% max, Fe 0.20% max)

**Location:** In any LME-approved warehouse in the USA (10 delivery points in June 2017), premium on top of LME cash prices

**Quantity:** 25 tonnes

**Unit:** USD per tonne

**Timing:** Prompt Release

**Form:** Ingot, T-bars, Sow

**Payment terms:** Cash against documents (7 days after bill of lading date); other terms normalised

**Publication:** Weekly. Tuesday 3-4pm London time

### BRAZIL

**Assessment**
Aluminium P1020A cif Brazil main ports

**Location:** CIF Brazil ports duty unpaid, excluding VAT, premium on top of LME cash prices

**Origin:** Except China

**Grade:** P1020A or 99.7 % Minimum Al purity (Si 0.10% max, Fe 0.20% max)

**Unit:** USD/tonne

**Quantity:** 100 tonnes

**Payment terms:** Cash against documents (7 days after bill of lading date); other payment terms normalised

**Publication:** Weekly. Tuesday 3-4pm London

### UNITED STATES

**Assessment**
Aluminum P1020A delivered US Midwest

**Location:** Delivered consumer works Midwest USA, premium on top of LME cash prices

**Grade:** P1020A or 99.7 % Minimum Al purity (Si 0.10% max, Fe 0.20% max)

**Unit:** USD per lb

**Quantity:** 25 tonnes

**Payment terms:** 30 days, other payment terms normalised

**Timing:** Within 4 weeks

**Form:** Ingot

**Publication:** Weekly. Tuesday 3-4pm London time

### BRAZIL

**Assessment**
Aluminium P1020A DDP Domestic Brazil

**Location:** Delivered in São Paulo region duty-paid, VAT not included, premium on top of LME cash prices

**Grade:** P1020A or 99.7 % Minimum Al purity (Si 0.10% max, Fe 0.20% max)

**Unit:** USD/tonne

**Min quantity:** 100 tonnes

**Payment terms:** Cash against documents (7 days after bill of lading date); other payment terms normalised

**Timing:** Within 4 weeks

**Form:** Ingot

**Publication:** Weekly. Tuesday 3-4pm London

### UNITED STATES

**Assessment**
Aluminum P1020 cif Baltimore ports premium

**Location:** Shipped to ports in Baltimore, Maryland, premium on top of London Metal Exchange cash prices, net back to Baltimore

**Grade:** P1020A or 99.7% minimum aluminium purity (silicon 0.10% maximum, iron 0.20% maximum)

**Unit:** US cents per lb

**Min quantity:** 100 tonnes

**Payment terms:** 30 days, other payment terms normalised

**Timing:** Within 4 weeks

**Form:** Ingot

**Publication:** Weekly

---

www.fastmarkets.com

9
### Aluminium billet

#### EUROPE

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Aluminium 6063 extrusion billet in-warehouse Rotterdam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td>In-warehouse Rotterdam duty-paid premium on top of LME cash prices</td>
</tr>
<tr>
<td>Grade:</td>
<td>Aluminium Assn specification AA6063: Si 0.2-0.6% max, Mg 0.45-0.9% max, Fe 0.35% max, Cu 0.1% max, Cr 0.1% max, Zn 0.1% max, Ti 0.1% max, Others each 0.05% max, total 0.15% max</td>
</tr>
<tr>
<td>Unit:</td>
<td>USD/tonne</td>
</tr>
<tr>
<td>Quantity:</td>
<td>100 tonnes</td>
</tr>
<tr>
<td>Payment terms:</td>
<td>Cash against documents (7 days after bill of lading date)</td>
</tr>
<tr>
<td>Timing:</td>
<td>Within 2 months</td>
</tr>
<tr>
<td>Form:</td>
<td>Extrusion billet with outside diameter of 6&quot;, 7&quot; and 8&quot;</td>
</tr>
<tr>
<td>Publication:</td>
<td>Weekly. Friday 3-4pm London</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Aluminium 6063 extrusion billet DDP North Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td>Delivered in North Germany (Ruhr region) duty-paid premium on top of LME cash price</td>
</tr>
<tr>
<td>Grade:</td>
<td>Extrusion billet AA6063: Si 0.2-0.6% max, Mg 0.45-0.9% max, Fe 0.35% max, Cu 0.1% max, Cr 0.1% max, Zn 0.1% max, Ti 0.1% max, others each 0.05% max, total 0.15% max</td>
</tr>
<tr>
<td>Unit:</td>
<td>USD/tonne</td>
</tr>
<tr>
<td>Quantity:</td>
<td>100 tonnes</td>
</tr>
<tr>
<td>Payment terms:</td>
<td>30-day payment terms, other payment terms normalised</td>
</tr>
<tr>
<td>Timing:</td>
<td>Within 2 months</td>
</tr>
<tr>
<td>Form:</td>
<td>Billet with diameter of 6&quot;, 7&quot; and 8&quot;</td>
</tr>
<tr>
<td>Publication:</td>
<td>Weekly. Friday between 3pm and 4pm London time</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Aluminium 6063 extrusion billet DDP Spain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td>Delivered in Spain (Bilbao region), duty-paid premium on top of LME cash prices</td>
</tr>
<tr>
<td>Grade:</td>
<td>Extrusion billet AA6063</td>
</tr>
<tr>
<td>Unit:</td>
<td>USD/tonne</td>
</tr>
<tr>
<td>Quantity:</td>
<td>100 tonnes</td>
</tr>
<tr>
<td>Payment terms:</td>
<td>60-day payment, other payments terms normalised</td>
</tr>
<tr>
<td>Timing:</td>
<td>Within 2 months</td>
</tr>
<tr>
<td>Form:</td>
<td>Billet with diameter of 6&quot;, 7&quot; and 8&quot;</td>
</tr>
<tr>
<td>Publication:</td>
<td>Fortnightly. Friday between 3pm and 4pm London time</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Aluminium 6063 extrusion billet DDP Italy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td>Delivered in Italy (Brescia region) duty-paid premium on top of LME cash prices</td>
</tr>
<tr>
<td>Grade:</td>
<td>Extrusion billet AA6063</td>
</tr>
<tr>
<td>Unit:</td>
<td>USD/tonne</td>
</tr>
<tr>
<td>Quantity:</td>
<td>25 tonnes</td>
</tr>
<tr>
<td>Payment terms:</td>
<td>60-day payment, other payments terms normalised</td>
</tr>
<tr>
<td>Timing:</td>
<td>Within 2 months</td>
</tr>
<tr>
<td>Form:</td>
<td>Billet with diameter of 6&quot;, 7&quot; and 8&quot;</td>
</tr>
<tr>
<td>Publication:</td>
<td>Weekly. Friday between 3pm and 4pm London time</td>
</tr>
</tbody>
</table>

#### UNITED STATES

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Aluminium 6063 extrusion billet delivered US Midwest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td>Delivered into US Midwest region, duty-unpaid premium on top of the P1020A ingot Midwest premium and LME cash prices</td>
</tr>
<tr>
<td>Grade:</td>
<td>Extrusion billet AA6063</td>
</tr>
<tr>
<td>Currency:</td>
<td>US cents</td>
</tr>
<tr>
<td>Unit:</td>
<td>lb</td>
</tr>
<tr>
<td>Quantity:</td>
<td>100 tonnes</td>
</tr>
<tr>
<td>Payment terms:</td>
<td>30-day payment, other payments terms normalised</td>
</tr>
<tr>
<td>Timing:</td>
<td>Within 2 months</td>
</tr>
<tr>
<td>Form:</td>
<td>Billet with diameter of 6&quot;, 7&quot; and 8&quot;</td>
</tr>
<tr>
<td>Publication:</td>
<td>Fortnightly. Friday between 3pm and 4pm London time</td>
</tr>
</tbody>
</table>
SOUTHEAST ASIA
Assessment  | Aluminium 6063 extrusion billet cif Thailand
Location:   | Cif delivery into main Thai ports, duty-paid premium on top of LME cash prices
Grade:     | Extrusion billet AA6063
Unit:      | USD/tonne
Quantity:  | 100 tonnes
Payment terms: | Cash against documents (7 days after bill of lading date), other payments terms normalised
Timing:    | Within 2 months
Form:      | Billet with diameter of 6”, 7” and 8”
Publication: | Every 28 days. Friday between 3pm and 4pm London time

JAPAN
Assessment  | Aluminium 6063 extrusion billet cif MJP
Location:   | CIF in Major Japanese Ports (MJP), duty-paid premium on top of the P1020A ingot MJP premium and LME cash prices
Grade:     | Extrusion billet AA6063
Unit:      | USD/tonne
Quantity:  | 100 tonnes
Payment terms: | Cash against documents (7 days after bill of lading date), other payments terms normalised
Timing:    | Within 2 months
Form:      | Billet with diameter of 6”, 7” and 8”
Publication: | Monthly. 3rd Friday of the month between 3pm and 4pm London time

TURKEY
Assessment  | Aluminium 6063 extrusion billet cif Turkey
Location:   | Cif delivery in Turkey (Marmara region), duty-paid premium on top of LME cash prices
Grade:     | Extrusion billet AA6063
Unit:      | USD/tonne
Quantity:  | 100 tonnes
Payment terms: | Cash, other payments terms normalised
Timing:    | Within 2 months
Form:      | Billet with diameter of 6”, 7” and 8”
Publication: | Fortnightly. Friday between 3pm and 4pm London time

BRASIL
Assessment  | Aluminium extrusion billet 6063 and 6060 cif Brazilian ports
Location:   | CIF Brazil
Grade:     | Extrusion billet AA6063 and AA6060
Unit:      | USD/tonne
Quantity:  | 100 tonnes
Payment terms: | Cash against documents (7 days after bill of lading date), other payments terms normalised
Timing:    | Within 2 months
Form:      | Billet with diameter of 6”, 7” and 8”
Publication: | Fortnightly. Friday between 3pm and 4pm London time

EUROPE
Assessment  | Aluminium wheel alloy silicon 7 DDP
Germany     | Delivered in Germany, duty paid premium on top of LME cash prices
Grade:     | Primary Foundry Alloy silicon 7 AlSi7Mg0.3-0.6 for wheel production
Unit:      | USD/tonne
Quantity:  | 100 tonnes
Payment terms: | 30-day payment terms, other payments terms normalised
Timing:    | Within 2 months
Form:      | Ingot
Publication: | Monthly. 2nd Friday of the month between 3pm and 4pm London time
Copper concentrate

**ASIA PACIFIC**

**Copper Concentrate TC/RC Index**

- **Index:** Copper content 28%; Au 1.1g/dmt; Ag 75g/dmt; S 32%; Fe 28%; Pb 0.07%; Zn 2%; As 0.17%; Sb 0.018%; Hg 2.5ppm; Bi 145ppm
- **Grade:** Primary Foundry Alloy silicon 7 AlSi7Mg0.3-0.6 for wheel production
- **Quantity:** 5,000 tonnes
- **Location:** Treatment and refining charge (TC/RC) on cif basis delivery in Asia Pacific region
- **Unit:** TC in USD/tonne, RC in US cents/lb
- **Timing:** Within 13 weeks
- **Form:** Concentrate
- **Payment terms:** Letter of Credit, quotation period M+3
- **Publication:** Twice-monthly. Every 15th and last day of the month 3pm London time
- **Notes:** Full methodology available [here](#).

**Blister copper**

**CHINA**

- **Assessment:** Blister copper 98-99% spot RC cif China
- **Type:** Single number and range
- **Chemistry:** Blister copper of 98-99% copper content, with varying payables
- **Location:** CIF China
- **Unit:** USD per tonne
- **Delivery:** Within 2 months
- **Publication:** Monthly, last day of the month, 3-4pm London time

- **Assessment:** Blister copper 98-99% annual benchmark RC cif China
- **Type:** Single number and range
- **Chemistry:** Blister copper of 98-99% copper content, with varying payables
- **Location:** CIF China
- **Unit:** USD per tonne
- **Publication:** Annually, January or February
Refined copper

Assessment Copper Grade A cathode in-warehouse Shanghai
Type: Assessed range and assessed single number
Location: In-warehouse Shanghai port, duty-unpaid premium on top of LME cash prices
Grade: Grade A 99.9935% min copper conforming to LME specifications BS EN 1978:1998 – Cu-CATH-1
Unit: USD/tonne
Quantity: 25 tonnes
Payment terms: Letter of credit, telegraphic transfer or documents against payment, other payment terms normalised
Timing: Within 6 weeks
Form: Cathode
Publication: Daily. Between 3pm and 4pm London time

Assessment Copper Grade A ER cathode in-warehouse Shanghai
Location: In-warehouse Shanghai port, duty-unpaid premium on top of LME cash prices
Grade: Electro-Refined Grade A 99.9935% min conforming to LME specifications BS EN 1978:1998 (Cu-CATH-1)
Unit: USD/tonne
Quantity: 25 tonnes
Payment terms: Letter of credit, telegraphic transfer or documents against payment, other payment terms normalised
Timing: Within 6 weeks
Form: Cathode
Publication: Daily. Between 3pm and 4pm London time

Assessment Copper Grade A SX-EW cathode in-warehouse Shanghai
Location: In-warehouse Shanghai port, duty-unpaid premium on top of LME cash prices
Grade: Solvent Extraction-Electro winning Grade A cathode 99.9935% min conforming to LME specifications BS EN 1978:1998 (Cu-CATH-1)
Unit: USD/tonne
Quantity: 25 tonnes
Payment terms: Letter of credit, telegraphic transfer or documents against payment, other payment terms normalised
Timing: Within 6 weeks
Form: Cathode
Publication: Daily. Between 3pm and 4pm London time

Assessment Copper Grade A cathode cif Shanghai
Location: CIF Shanghai port, duty-unpaid premium on top of LME cash prices
Grade: Grade A 99.9935% min copper conforming to LME specifications BS EN 1978:1998 – Cu CATH-1
Unit: USD/tonne
Quantity: 25 tonnes
Payment terms: Letter of credit, telegraphic transfer or documents against payment, other payment terms normalised
Timing: Within 6 weeks
Form: Cathode
Publication: Daily, 3-4pm London time

Assessment Copper Grade A ER cathode cif Shanghai
Location: CIF Shanghai port, duty-unpaid premium on top of LME cash prices
Grade: Electro-Refined Grade A 99.9935% min conforming to LME specifications BS EN 1978:1998 (Cu-CATH-1)
Unit: USD/tonne
Quantity: 25 tonnes
Payment terms: Letter of credit, telegraphic transfer or documents against payment, other payment terms normalised
Timing: Within 6 weeks
Form: Cathode
Publication: Daily, 3-4pm London time

Assessment Copper Grade A SX-EW cathode cif Shanghai
Location: CIF Shanghai port, duty-unpaid premium on top of LME cash prices
Grade: Solvent Extraction-Electro winning Grade A cathode 99.9935% min conforming to LME specifications BS EN 1978:1998 (Cu-CATH-1)
Unit: USD/tonne
Quantity: 25 tonnes
Payment terms: Letter of credit, telegraphic transfer or documents against payment, other payment terms normalised
Timing: Within 6 weeks
Form: Cathode
Publication: Daily, 3-4pm London time
**Copper Grade A SX-EW cathode cif Shanghai**

**Grade:** Solvent Extraction-Electro winning
Grade A cathode 9.9935% min conforming to LME specifications BS EN 1978:1998 (Cu-CATH-1)

**Location:** Cif delivery in Shanghai port, duty-unpaid premium on top of LME cash prices

**Unit:** USD/tonne
**Quantity:** 25 tonnes

**Payment terms:** Letter of credit, telegraphic transfer or documents against payment, other payment terms normalised

**Timing:** Within 6 weeks
**Form:** Cathode
**Publication:** Daily. Between 3pm and 4pm London time

---

**SOUTHEAST ASIA**

**Copper Grade A Cathode cif Southeast Asia**

**Location:** Cif delivery in ports of Vietnam (Ho Chi Minh/Haiphong), Thailand (Bangkok, Laem Chabang), Malaysia (Johor, Port Klang), Indonesia (Jakarta), duty-unpaid premium on top of LME cash prices

**Type:** Assessed range and assessed single number
**Location:** Cif delivery in main South Korean ports (Busan, Incheon, Gwangyang, Onsan), duty-unpaid premium on top of LME cash prices
**Grade:** Grade A 99.9935% min copper conforming to LME specifications BS EN 1978:1998 – Cu-CATH-1
**Unit:** USD/tonne
**Quantity:** 25 tonnes

**Payment terms:** Letter of credit, telegraphic transfer or documents against payment, other payment terms normalised

**Timing:** Within 6 weeks
**Form:** Cathode
**Publication:** Weekly. Tuesday 3-4pm London time

---

**Copper Grade A Cathode cif Taiwan**

**Location:** Cif delivery in Taiwanese ports, duty-unpaid premium on top of LME cash prices
**Grade:** Grade A 99.9935% min copper conforming to LME specifications BS EN 1978:1998 – Cu-CATH-1
**Unit:** USD/tonne
**Quantity:** 25 tonnes

**Payment terms:** Letter of credit, telegraphic transfer or documents against payment, other payment terms normalised

**Timing:** Within 6 weeks
**Form:** Cathode
**Publication:** Weekly. Tuesday 3-4pm London time
<table>
<thead>
<tr>
<th>Assessment</th>
<th>Copper Grade A cathode in-warehouse Southeast Asian warrants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td>In any LME-approved warehouse in Singapore and in Malaysia (Johor, Port Klang), premium on top of LME cash prices</td>
</tr>
<tr>
<td>Grade:</td>
<td>Grade A 99.9935% min copper conforming to LME specifications BS EN 1978:1998 – Cu-CATH-1</td>
</tr>
<tr>
<td>Unit:</td>
<td>USD/tonne</td>
</tr>
<tr>
<td>Quantity:</td>
<td>25 tonnes</td>
</tr>
<tr>
<td>Payment terms:</td>
<td>Cash, other payment terms normalised</td>
</tr>
<tr>
<td>Timing:</td>
<td>Prompt release</td>
</tr>
<tr>
<td>Form:</td>
<td>Cathode</td>
</tr>
<tr>
<td>Publication:</td>
<td>Weekly. Tuesday 3-4pm London time</td>
</tr>
</tbody>
</table>

**EUROPE**

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Copper Grade A cathode Cif Rotterdam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td>CIF delivery in Rotterdam, duty unpaid premium on top of LME cash prices</td>
</tr>
<tr>
<td>Grade:</td>
<td>Grade A 99.9935% min copper conforming to LME specifications BS EN 1978:1998 – Cu-CATH-1</td>
</tr>
<tr>
<td>Unit:</td>
<td>USD/tonne</td>
</tr>
<tr>
<td>Quantity:</td>
<td>25 tonnes</td>
</tr>
<tr>
<td>Payment terms:</td>
<td>Cash, other payment terms normalised</td>
</tr>
<tr>
<td>Timing:</td>
<td>Within 4 weeks</td>
</tr>
<tr>
<td>Form:</td>
<td>Cathode</td>
</tr>
<tr>
<td>Publication:</td>
<td>Weekly. Tuesday 3-4pm London time</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Copper Grade A cathode Cif Leghorn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type:</td>
<td>Assessed range and single number</td>
</tr>
<tr>
<td>Location:</td>
<td>Cif delivery in Leghorn (Italy), duty unpaid premium on top of LME cash prices</td>
</tr>
<tr>
<td>Grade:</td>
<td>Grade A 99.9935% min copper conforming to LME specifications BS EN 1978:1998 – Cu-CATH-1</td>
</tr>
<tr>
<td>Unit:</td>
<td>USD/tonne</td>
</tr>
<tr>
<td>Quantity:</td>
<td>25 tonnes</td>
</tr>
<tr>
<td>Payment terms:</td>
<td>Cash, other payment terms normalised</td>
</tr>
<tr>
<td>Timing:</td>
<td>Within 4 weeks</td>
</tr>
<tr>
<td>Form:</td>
<td>Cathode</td>
</tr>
<tr>
<td>Publication:</td>
<td>Weekly. Tuesday 3-4pm London time</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Copper Grade A cathode delivered Germany</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td>Delivered consumer works in Germany, duty unpaid premium on top of LME cash prices</td>
</tr>
<tr>
<td>Grade:</td>
<td>Grade A 99.9935% min copper conforming to LME specifications BS EN 1978:1998 – Cu-CATH-1</td>
</tr>
<tr>
<td>Unit:</td>
<td>USD/tonne</td>
</tr>
<tr>
<td>Quantity:</td>
<td>25 tonnes</td>
</tr>
<tr>
<td>Payment terms:</td>
<td>Cash, other payment terms normalised</td>
</tr>
<tr>
<td>Timing:</td>
<td>Within 4 weeks</td>
</tr>
<tr>
<td>Form:</td>
<td>Cathode</td>
</tr>
<tr>
<td>Publication:</td>
<td>Weekly. Tuesday 3-4pm London time</td>
</tr>
</tbody>
</table>
Copper Grade A cathode in-warehouse North European warrants

**Location:** In any LME-approved warehouse in North Europe (Belgium, Germany, the Netherlands, Sweden and the UK), premium on top of LME cash prices

**Grade:** Grade A 99.9935% min copper conforming to LME specifications BS EN 1978:1998 – Cu-CATH-1

**Unit:** USD/tonne

**Quantity:** 25 tonnes

**Payment terms:** Cash, other payment terms normalised

**Timing:** Prompt release

**Form:** Cathode

**Publication:** Weekly. Tuesday 3-4pm London time

Copper Grade A cathode in-warehouse South European warrants

**Location:** In any LME-approved warehouse in South Europe (Spain, Italy), premium on top of LME cash prices

**Grade:** Grade A 99.9935% min copper conforming to LME specifications BS EN 1978:1998 – Cu-CATH-1

**Unit:** USD/tonne

**Quantity:** 25 tonnes

**Payment terms:** Cash, other payment terms normalised

**Timing:** Prompt release

**Form:** Cathode

**Publication:** Weekly. Tuesday 3-4pm London time

Copper Grade A cathode US warrants

**Location:** Any LME-approved warehouse in the US, premium on top of LME cash prices

**Grade:** Grade A 99.9935% min copper conforming to LME specifications BS EN 1978:1998 – Cu-CATH-1

**Unit:** USD/tonne

**Quantity:** 25 tonnes

**Payment terms:** Cash, other payment terms normalised

**Timing:** Prompt release

**Form:** Cathode

**Publication:** Weekly. Tuesday 3-4pm London time

Copper Grade A cathode delivered US Midwest

**Location:** Delivered consumer works Midwest US

**Grade:** Grade A 99.9935% min copper conforming to LME specifications BS EN 1978:1998 – Cu-CATH-1 or Grade 1 Electrolytic Copper Cathode ASTM B115-00

**Unit:** USD/lb

**Quantity:** 25 tonnes

**Timing:** Within 4 weeks

**Form:** Cathode

**Payment:** 30 days, other payment terms normalised

**Publication:** Weekly. Tuesday 3-4pm London time

**Copper rod**

**INDIA**

**Assessment**

**Annual copper wire rod cif Nhava Sheva**

**Grade:** 8mm copper wire rod conforming to the ASTM B49-98 / BS-EN 1977-1998 standard chemical specification; copper content min 99.9%

**Quantity:** 100 tonnes

**Location:** CIF Nhava Sheva (India), premium on top of LME cash prices

**Timing:** Within 6 weeks

**Unit:** USD/tonne

**Payment terms:** Cash against documents or letter of credit, quotation period

**Publication time:** Annual, after deals for long-term contracts completed between Indian buyers and international producers and traders.
Non-ferrous Prices

Lead concentrate

CHINA
Assessment: Lead Concentrate spot TC High Silver cif China
Location: Treatment Charge on cif basis delivery to Chinese ports
Grade: 55-65% lead content, high silver 2-4kg, arsenic below 0.7%, mercury below 0.05%
Unit: USD/tonne
Quantity: 2,000 tonnes
Payment terms: Letter of Credit, quotation period M+3
Timing: Within 13 weeks
Form: Concentrate
Publication: Monthly. Last Friday of every month

Assessment: Lead Concentrate spot TC Low Silver Cif China
Location: Treatment Charge on cif basis delivery to Chinese ports
Grade: 55-65% lead content, low silver below 1kg, arsenic below 0.7%, mercury below 0.05%
Unit: USD/tonne
Quantity: 2,000 tonnes
Payment terms: Letter of Credit, quotation period M+3
Timing: Within 13 weeks
Form: Concentrate
Publication: Monthly. Last Friday of every month

Refined lead

INDIA
Assessment: Lead 99.97% ingot Cif India
Location: CIF delivery in Nhava Sheva (India), premium on top of LME cash prices
Grade: Lead of 99.97% to 99.99% purity conforming to LME specification BS EN 12659:1999, GB/T 469/2005 or ASTM B29-03 (2009)
Unit: USD/tonne
Quantity: 25 tonnes
Payment terms: Letter of credit, telegraphic transfer or cash against documents, other terms normalised
Timing: Within 5 weeks
Form: Ingot
Publication: Weekly. Tuesday 3-4pm London time

SOUTHEAST ASIA
Assessment: Lead 99.97% ingot cif Southeast Asia
Location: CIF Nhava Sheva (India), duty-unpaid premium on top of LME cash prices
Unit: USD/tonne
Quantity: 25 tonnes
Payment terms: Letter of credit, telegraphic transfer or cash against documents, other terms normalised
Timing: Within 5 weeks
Form: Ingot
Publication: Weekly. Tuesday 3-4pm London time
### Non-ferrous Prices

**Assessment**

**Lead 99.99% ingot cif Southeast Asia**

- **Location:** CIF ports of Vietnam (Ho Chi Minh/ Haiphong), Thailand (Bangkok, Laem Chabang), Malaysia (Johor, Port Klang), Indonesia (Jakarta), duty-unpaid premium on top of LME cash prices
- **Grade:** Lead of 99.99% min purity conforming to LME specification BS EN 12659:1999, GB/T 469/2005 or ASTM B29-03 (2009)
- **Unit:** USD/tonne
- **Quantity:** 25 tonnes
- **Timing:** Within 5 weeks
- **Form:** Ingot
- **Payment terms:** Letter of credit, telegraphic transfer or cash against documents, other terms normalized
- **Publication:** Weekly. Tuesday 3-4pm London time

**Assessment**

**Lead 99.97% ingot cif Taiwan**

- **Location:** Cif delivery in main Taiwanese ports (Taipei, Kaohsiung or Keelung), duty-unpaid premium on top of LME cash prices
- **Grade:** Lead of 99.97% to 99.99% purity conforming to LME specification BS EN 12659:1999, GB/T 469/2005 or ASTM B29-03 (2009)
- **Unit:** USD/tonne
- **Quantity:** 25 tonnes
- **Timing:** Within 5 weeks
- **Form:** Ingot
- **Payment terms:** Letter of credit, telegraphic transfer or cash against documents, other terms normalized
- **Publication:** Weekly. Tuesday 3-4pm London time

**Assessment**

**Lead 99.99% ingot cif Taiwan**

- **Location:** CIF main Taiwanese ports (Taipei, Kaohsiung or Keelung), duty-unpaid premium on top of LME cash prices
- **Grade:** Lead of 99.99% minimum purity conforming to LME specification BS EN 12659:1999, GB/T 469/2005 or ASTM B29-03 (2009)
- **Unit:** USD/tonne
- **Quantity:** 25 tonnes
- **Timing:** Within 5 weeks
- **Form:** Ingot
- **Payment terms:** Letter of credit, telegraphic transfer or cash against documents, other terms normalized
- **Publication:** Weekly. Tuesday 3-4pm London time

**Assessment**

**Lead 99.97% ingot in-warehouse Southeast Asian warrants**

- **Location:** In any LME-approved warehouse in Singapore and in Malaysia (Johor, Port Klang), premium on top of LME cash prices
- **Grade:** Lead of 99.97% to 99.99% purity conforming to LME specification BS EN 12659:1999, GB/T 469/2005 or ASTM B29-03 (2009)
- **Unit:** USD/tonne
- **Quantity:** 25 tonnes
- **Timing:** Prompt release
- **Form:** Ingot
- **Payment terms:** Cash, other payment terms normalised
- **Publication:** Weekly. Tuesday 3-4pm London time

**Assessment**

**Lead 99.97% ingot in-warehouse East Asian warrants**

- **Location:** In any LME-approved warehouse in Taiwan (Kaohsiung) and South Korea (Gwangyang, Busan or Incheon), premium on top of LME cash prices
- **Grade:** Lead of 99.97% to 99.99% purity conforming to LME specification BS EN 12659:1999, GB/T 469/2005 or ASTM B29-03 (2009)
- **Unit:** USD/tonne
- **Quantity:** 25 tonnes
- **Timing:** Prompt release
- **Form:** Ingot
- **Payment terms:** Cash, other terms normalised
- **Publication:** Weekly. Tuesday 3-4pm London time

**Assessment**

**Lead 99.97% ingot in-warehouse North European warrants**

- **Location:** In any LME-approved warehouse in North Europe (Belgium, Germany, the Netherlands, Sweden and the UK), premium on top of LME cash prices
- **Grade:** Lead of 99.97% to 99.99% purity conforming to LME specification BS EN 12659:1999, GB/T 469/2005 or ASTM B29-03 (2009)
- **Unit:** USD/tonne
- **Quantity:** 25 tonnes
- **Timing:** Prompt release
- **Form:** Cathode
- **Payment terms:** Cash, other payment terms normalised
- **Publication:** Weekly. Tuesday 3-4pm London time
<table>
<thead>
<tr>
<th>Assessment</th>
<th>Lead 99.97% ingot in-warehouse South European warrants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td>In any LME-approved warehouse in South Europe (Spain, Italy), premium on top of LME cash prices</td>
</tr>
<tr>
<td>Grade:</td>
<td>Lead of 99.97% to 99.99% purity conforming to LME specification BS EN 12659:1999, GB/T 469/2005 or ASTM B29-03 (2009)</td>
</tr>
<tr>
<td>Unit:</td>
<td>USD/tonne</td>
</tr>
<tr>
<td>Quantity:</td>
<td>25 tonnes</td>
</tr>
<tr>
<td>Payment terms:</td>
<td>Cash, other payment terms normalised</td>
</tr>
<tr>
<td>Form:</td>
<td>Cathode</td>
</tr>
<tr>
<td>Publication:</td>
<td>Weekly. Tuesday 3-4pm London time</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Lead 99.97% ingot US warrants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td>In any LME-approved warehouse in the USA, premium on top of LME cash prices</td>
</tr>
<tr>
<td>Grade:</td>
<td>Lead of 99.97% to 99.99% purity conforming to LME specification BS EN 12659:1999, GB/T 469/2005 or ASTM B29-03 (2009)</td>
</tr>
<tr>
<td>Unit:</td>
<td>USD/tonne</td>
</tr>
<tr>
<td>Quantity:</td>
<td>25 tonnes</td>
</tr>
<tr>
<td>Payment terms:</td>
<td>Cash, other payment terms normalised</td>
</tr>
<tr>
<td>Timing:</td>
<td>Prompt release</td>
</tr>
<tr>
<td>Form:</td>
<td>Cathode</td>
</tr>
<tr>
<td>Publication:</td>
<td>Weekly. Tuesday 3-4pm London time</td>
</tr>
</tbody>
</table>

**UNITED STATES**

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Lead 99.97% ingot delivered US Midwest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td>Delivered consumer works, US Midwest</td>
</tr>
<tr>
<td>Grade:</td>
<td>Lead of 99.97% to 99.99% purity conforming to LME specification BS EN 12659:1999, GB/T 469/2005 or ASTM B29-03 (2009)</td>
</tr>
<tr>
<td>Currency:</td>
<td>US cents</td>
</tr>
<tr>
<td>Unit:</td>
<td>lb</td>
</tr>
<tr>
<td>Quantity:</td>
<td>25 tonnes</td>
</tr>
<tr>
<td>Payment terms:</td>
<td>30 days, other payment terms normalised</td>
</tr>
<tr>
<td>Timing:</td>
<td>Within 5 weeks</td>
</tr>
<tr>
<td>Form:</td>
<td>Ingot</td>
</tr>
<tr>
<td>Publication:</td>
<td>Weekly. Tuesday 3-4pm London time</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Lead 99.99% ingot delivered US Midwest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td>Delivered consumer works, US Midwest</td>
</tr>
<tr>
<td>Currency:</td>
<td>US cents</td>
</tr>
<tr>
<td>Unit:</td>
<td>lb</td>
</tr>
<tr>
<td>Quantity:</td>
<td>25 tonnes</td>
</tr>
<tr>
<td>Payment terms:</td>
<td>30 days, other payment terms normalized</td>
</tr>
<tr>
<td>Timing:</td>
<td>Within 5 weeks</td>
</tr>
<tr>
<td>Form:</td>
<td>Ingot</td>
</tr>
<tr>
<td>Publication:</td>
<td>Weekly. Tuesday 3-4pm London time</td>
</tr>
</tbody>
</table>
Nickel ore
Please see Ores section.

Nickel

CHINA
Assessment: Nickel full plate in-warehouse Shanghai
Type: Assessed range and single number
Location: In-warehouse (Shanghai bonded zone, premium on top of LME cash prices
Grade: 99.80% min primary nickel conforming to LME specification: ASTM B39-79 (2013) or GB/T 6516-2010 - Ni9990 grade
Unit: USD/tonne
Quantity: 10 tonnes (under consultation to increase to 60 tonnes)
Payment terms: Cash against document, Letter of credit, telegraphic transfer, other terms normalised
Timing: With 2 weeks
Form: Full plate
Publication: Weekly. Tuesday 3-4pm London time

Assessment: Nickel full plate cif Shanghai
Type: Assessed range and single number
Location: Cif delivery basis Shanghai port, premium on top of LME cash prices
Grade: 99.80% min primary nickel conforming to LME specification: ASTM B39-79 (2013) or GB/T 6516-2010 - Ni9990 grade
Unit: USD/tonne
Quantity: 10 tonnes (under consultation to increase to 60 tonnes)
Payment terms: Cash against document, Letter of credit, telegraphic transfer, other terms normalised
Timing: With 6 weeks
Form: Full plate
Publication: Weekly. Tuesday 3-4pm London time

SOUTHEAST ASIA
Assessment: Nickel full plate in-warehouse Southeast Asian warrants
Location: Any LME-approved warehouse in Singapore and Malaysia (Johor, Port Klang), premium on top of LME cash prices
Grade: 99.80% min primary nickel conforming to LME specification: ASTM B39-79 (2013) or GB/T 6516-2010 - Ni9990 grade
Unit: USD/tonne
Quantity: 6 tonnes
Payment terms: Cash, other terms normalised
Timing: Prompt release
Form: Full-plate cathode
Publication: Weekly. Tuesday 3-4pm London time

Assessment: Nickel briquette in-warehouse Southeast Asian warrants
Grade: 99.80% min primary nickel conforming to LME specification: ASTM B39-79 (2013) or GB/T 6516-2010 - Ni9990 grade
Quantity: 6 tonnes
Location: Any LME-approved warehouse in Singapore/Malaysia (Johor, Port Klang), premium on top of LME cash prices
Unit: USD/tonne
Timing: Prompt release
Form: Briquette
Payment terms: Cash, other terms normalised
Publication: Weekly. Tuesday 3-4pm London time

Assessment: Duty-free nickel briquette cif Shanghai premium
Grade: Nickel content 99.8% in line with LME specifications
Min quantity: 6 tonnes
Location: FOB China
Origin: Australia and Madagascar
Unit: USD/tonne
Delivery: Within 8 weeks
Payment terms: Letter of credit and telegraphic transfer
Publication: Last Tuesday of each month
EAST ASIA
Assessment: Nickel full plate in-warehouse East Asian warrants
Grade: 99.80% min primary nickel conforming to LME specification: ASTM B39-79 (2013) or GB/T 6516-2010 - Ni9990 grade
Quantity: 6 tonnes
Location: In any LME-approved warehouse in Taiwan (Kaohsiung) and South Korea (Gwangyang, Busan or Incheon), premium on top of LME cash prices
Unit: USD/tonne
Payment terms: Cash, other terms normalised
Timing: Prompt release
Form: Full-plate cathode
Publication: Weekly. Tuesday 3-4pm London time

Assessment: Nickel briquette in-warehouse East Asian warrants
Grade: 99.80% min primary nickel conforming to LME specification: ASTM B39-79 (2013) or GB/T 6516-2010 - Ni9990 grade
Quantity: 6 tonnes
Location: In any LME-approved warehouse in Taiwan (Kaohsiung) and South Korea (Gwangyang, Busan or Incheon), premium on top of LME cash prices
Unit: USD/tonne
Payment terms: Cash, other payment terms normalised
Timing: Prompt release
Form: Briquette
Publication: Weekly. Tuesday 3-4pm London time

EUROPE
Assessment: Nickel full plate in-warehouse Rotterdam
Location: In-warehouse Rotterdam, premium on top of LME cash prices
Grade: 99.80% min primary nickel conforming to LME specification: ASTM B39-79 (2013) or GB/T 6516-2010 - Ni9990 grade
Quantity: 20 tonnes
Unit: USD/tonne
Payment terms: Cash, other payment terms normalised
Timing: Within one week
Form: Full-plate cathode
Publication: Weekly. Tuesday 3-4pm London time

Assessment: Nickel 4x4 cathode in-warehouse Rotterdam
Location: In-warehouse Rotterdam, premium on top of LME cash prices
Grade: 99.80% min primary nickel conforming to LME specification: ASTM B39-79 (2013) or GB/T 6516-2010 - Ni9990 grade
Quantity: 20 tonnes
Unit: USD/tonne
Payment terms: Cash, other payment terms normalised
Timing: Within one week
Form: 4x4 cut cathode
Publication: Weekly. Tuesday 3-4pm London time

Assessment: Nickel briquette in-warehouse Rotterdam 5/tonne
Location: In-warehouse Rotterdam, premium on top of LME cash prices
Grade: 99.80% min primary nickel conforming to LME specification: ASTM B39-79 (2013) or GB/T 6516-2010 - Ni9990 grade
Quantity: 20 tonnes
Unit: USD/tonne
Payment terms: Cash, other payment terms normalised
Timing: Within one week
Form: Briquette
Publication: Weekly. Tuesday 3-4pm London time

Assessment: Nickel in-warehouse North European warrants
Location: Any LME-approved warehouse in North Europe (Belgium, Germany, the Netherlands, Sweden and the UK), premium on top of LME cash prices
Grade: 99.80% min primary nickel conforming to LME specification: ASTM B39-79 (2013) or GB/T 6516-2010 - Ni9990 grade
Quantity: 6 tonnes
Unit: USD/tonne
Payment terms: Cash, other terms normalized
Timing: Prompt release
Form: Cathode (full-plate, cut), pellet or briquette
Publication: Weekly. Tuesday 3-4pm London time
# United States

**Assessment:** Nickel 4x4 cathode delivered US premium

**Grade:** 99.8% minimum primary nickel conforming to LME specification:
ASTM B39-79 (2013) or GB/T 6516-2010 - Ni9990 grade specification:
ASTM B39-79 (2013) or GB/T 6516-2010 - Ni9990 grade

**Min quantity:** 20 tonnes

**Location:** Delivered consumer works US

**Timing:** Within four weeks

**Unit:** US cents per lb

**Form:** 4x4 cut cathode

**Payment terms:** 30 days, other payment terms normalized

**Publication:** Weekly. Tuesday 3-4pm London time

# China

**Assessment:** Tin 99.9% ingot cif Shanghai

**Location:** Cif delivery basis Shanghai port, premium on top of LME cash prices

**Grade:** 99.9% tin purity conforming to LME specification: BS EN 610:1996 with 100-300 ppm lead content

**Unit:** USD/tonne

**Quantity:** 5 tonnes

**Payment terms:** Cash against document, telegraphic transfer, other terms normalised

**Timing:** Within 2 weeks

**Form:** Ingot

**Publication:** Weekly. Tuesday 3-4pm London time

**Assessment:** Tin 99.9% Low Lead ingot cif Shanghai

**Location:** Cif delivery basis Shanghai port, premium on top of LME cash prices

**Grade:** 99.9% tin purity conforming to LME specification: BS EN 610:1996 with less than 100 ppm lead content

**Unit:** USD/tonne

**Quantity:** 5 tonnes

**Payment terms:** Cash against document, telegraphic transfer, other terms normalised

**Timing:** Within 2 weeks

**Form:** Ingot

**Publication:** Weekly. Tuesday 3-4pm London time

# Southeast Asia

**Assessment:** Tin 99.9% ingot cif Taiwan

**Location:** Cif delivery basis Taiwanese ports (Taipei, Kaohsiung or Keelung), premium on top of LME cash prices

**Grade:** 99.9% tin purity conforming to LME specification: BS EN 610:1996 with 100-300 ppm lead content

**Unit:** USD/tonne

**Quantity:** 5 tonnes

**Payment terms:** Cash against document, telegraphic transfer, other terms normalised

**Timing:** Within 2 weeks

**Form:** Ingot

**Publication:** Weekly. Tuesday 3-4pm London time
**Non-ferrous Prices**

**Assessment**

Tin ingot 99.85% minimum in-warehouse Southeast Asian warrants

**Location:** In any LME-approved warehouse in Singapore and in Malaysia (Johor, Port Klang), premium on top of LME cash prices

**Grade:** Minimum 99.85% tin purity conforming to LME specification: BS EN 610:1996, max 500ppm lead

**Unit:** USD/tonne

**Quantity:** 5 tonnes

**Payment terms:** Cash, other payment terms normalised

**Timing:** Prompt release

**Form:** Ingot

**Publication:** Weekly. Tuesday 3-4pm London time

---

**EUROPE**

**Assessment**

Tin 99.9% ingot in-warehouse Rotterdam

**Location:** In-warehouse Rotterdam, premium on top of LME cash prices

**Grade:** 99.9% tin purity conforming to LME specification: BS EN 610:1996 with 100-300 ppm lead content

**Unit:** USD/tonne

**Quantity:** 20 tonnes

**Payment terms:** Cash against conditional release, other payment terms normalised

**Timing:** Within 2 weeks

**Form:** Ingot

**Publication:** Weekly. Tuesday 3-4pm London time

---

**Assessment**

Tin 99.9% Low Lead ingot in-warehouse Rotterdam

**Location:** In-warehouse Rotterdam, premium on top of LME cash prices

**Grade:** 99.9% tin purity conforming to LME specification: BS EN 610:1996 with less than 100 ppm lead content

**Unit:** USD/tonne

**Quantity:** 20 tonnes

**Payment terms:** Cash against conditional release, other payment terms normalised

**Timing:** Within 2 weeks

**Form:** Ingot

**Publication:** Weekly. Tuesday 3-4pm London time

---

**CHINA**

**Assessment**

Zinc Concentrate spot TC cif China

**Location:** Treatment Charge on cif basis delivery to Chinese ports

**Grade:** 45-55% zinc content, low silver (0-170g/t), silica 3.5-4.5%, copper below 3% (high copper 4-5%), lead below 3.5% (total copper, lead, silica at max 6-7%), arsenic below 0.6%, cadmium below 0.33% and mercury below 0.06%

**Unit:** USD/tonne

**Quantity:** 2,000 tonnes

**Payment terms:** Letter of Credit, quotation period M+3

**Timing:** Within 13 weeks

**Form:** Concentrate

**Publication:** Monthly. Last Friday of every month.

---

**UNITED STATES**

**Assessment**

Tin 99.85% delivered US Midwest

**Location:** Delivered consumer works USA

**Grade:** Min 99.85% purity conforming to LME specification BS EN 610:1996 and ASTM grade A, max 500ppm lead

**Unit:** USD/tonne

**Quantity:** 20 tonnes

**Payment terms:** 30 days, other payment terms normalised

**Timing:** Within 2 weeks

**Form:** Ingot

**Publication:** Weekly. Tuesday 3-4pm London time

---

**Assessment**

Tin 99.85% ingot in-warehouse Baltimore

**Location:** In-warehouse Baltimore, premium on top of LME cash prices

**Grade:** Minimum 99.85% tin purity conforming to LME specification: BS EN 610:1996, max 500ppm lead, total impurities must not exceed 0.15%

**Unit:** USD/tonne

**Quantity:** 20 tonnes

**Payment terms:** Cash against documents, other payment terms normalised

**Form:** Ingot

**Publication:** Weekly. Tuesday 3-4pm London time

---

**Zinc concentrate**
Non-ferrous Prices

Assessment: **Zinc Concentrate spot TC delivered North China**
Location: Treatment Charge on delivered basis
Grade: Zn 50%, As <0.4%, Hg <100ppm, Si <6%, S >26%, Pb <3%, Fe <8%.
Currency: CNY
Unit: Tonne
Quantity: 100 tonnes
Payment terms: Cash against document or prepayment
Form: Concentrate
Publication: Monthly. Last Friday of every month.

Assessment: **Zinc Concentrate spot TC delivered South China**
Location: Treatment Charge on delivered basis
Grade: Zn content 50%, As <0.4%, Hg <100ppm, Si <6%, S >26%, Pb <3%, Fe <8%.
Currency: CNY
Unit: Tonne
Quantity: 100 tonnes
Payment terms: Cash against document or prepayment
Form: Concentrate
Publication: Monthly. Last Friday of every month.

**Refined zinc**

**CHINA**

Assessment: **Zinc SHG ingot in-warehouse Shanghai**
Type: Assessed range and assessed single number
Location: In-warehouse Shanghai bonded zone, premium on top of LME cash prices
Grade: Special High Grade zinc of minimum 99.995% purity, conforming to LME specifications and relevant standards: BS EN 1179:2003, ISO 752:2004 - ZN-1 grade, ASTM B6-12 - LME grade or GB/T 470-2008
Unit: USD/tonne
Quantity: 25 tonnes
Payment terms: Letter of credit, telegraphic transfer or documents against payment, other payment terms normalised
Timing: Within 4 weeks
Form: Ingot
Publication: Weekly. Tuesday 3-4pm London time

Assessment: **Zinc SHG ingot Cif Shanghai**
Type: Assessed range
Location: Cif in Shanghai port, premium on top of LME cash prices
Grade: Special High Grade zinc of minimum 99.995% purity, conforming to LME specifications and relevant standards: BS EN 1179:2003, ISO 752:2004 - ZN-1 grade, ASTM B6-12 - LME grade or GB/T 470-2008
Unit: USD/tonne
Quantity: 25 tonnes
Payment terms: Letter of credit, telegraphic transfer or documents against payment, other payment terms normalised
Timing: Within 4 weeks
Form: Ingot
Publication: Weekly. Tuesday 3-4pm London time

Assessment: **Zinc SHG ingot Cif Taiwan**
Type: Assessed range
Location: Cif delivery in Taiwanese ports, premium on top of LME cash prices
Grade: Special High Grade zinc of minimum 99.995% purity, conforming to LME specifications and relevant standards: BS EN 1179:2003, ISO 752:2004 - ZN-1 grade, ASTM B6-12 - LME grade or GB/T 470-2008
Unit: USD/tonne
Quantity: 25 tonnes
Payment terms: Letter of credit, telegraphic transfer or documents against payment, other payment terms normalised
Timing: Within 4 weeks
Form: Ingot
Publication: Weekly. Tuesday 3-4pm London time
### SOUTHEAST ASIA

**Assessment:** Zinc SHG ingot FCA Singapore  
**Location:** Free-carrier in Singapore, premium on top of LME cash prices  
**Grade:** Special High Grade zinc of minimum 99.995% purity, conforming to LME specifications and relevant standards: BS EN 1179:2003, ISO 752:2004 - ZN-1 grade, ASTM B6-12 - LME grade or GB/T 470-2008  
**Unit:** USD/tonne  
**Quantity:** 25 tonnes  
**Payment terms:** Letter of credit or telegraphic transfer, other terms normalised  
**Timing:** Within 4 weeks  
**Form:** Ingot  
**Publication:** Weekly. Tuesday 3-4pm London time

**Assessment:** Zinc SHG ingot FCA Malaysia  
**Location:** Free-carrier in main Malaysian ports (Johor, Port Klang), premium on top of LME cash prices  
**Grade:** Special High Grade zinc of minimum 99.995% purity, conforming to LME specifications and relevant standards: BS EN 1179:2003, ISO 752:2004 - ZN-1 grade, ASTM B6-12 - LME grade or GB/T 470-2008  
**Unit:** USD/tonne  
**Quantity:** 25 tonnes  
**Payment terms:** Letter of credit or telegraphic transfer, other terms normalised  
**Timing:** Within 4 weeks  
**Form:** Ingot  
**Publication:** Weekly. Tuesday 3-4pm London time

**Assessment:** Zinc SHG ingot cif Southeast Asia  
**Location:** CIF ports in Vietnam (Ho Chi Minh/ Haiphong), Thailand (Bangkok, Laem Chabang), Malaysia (Johor, Port Klang), Indonesia (Jakarta), duty-unpaid premium on top of LME cash prices  
**Grade:** Special High Grade zinc of minimum 99.995% purity, conforming to LME specifications and relevant standards: BS EN 1179:2003, ISO 752:2004 - ZN-1 grade, ASTM B6-12 - LME grade or GB/T 470-2008  
**Unit:** USD/tonne  
**Quantity:** 25 tonnes  
**Payment terms:** Letter of credit or telegraphic transfer, other terms normalised  
**Timing:** Within 4 weeks  
**Form:** Ingot  
**Publication:** Weekly. Tuesday 3-4pm London time

### EUROPE

**Assessment:** Zinc SHG ingot fca DP Rotterdam  
**Location:** Free-carrier basis delivery in Rotterdam, duty-paid premium on top of LME cash prices  
**Grade:** Special High Grade zinc of minimum 99.995% purity, conforming to LME specifications and relevant standards: BS EN 1179:2003, ISO 752:2004 - ZN-1 grade, ASTM B6-12 - LME grade or GB/T 470-2008  
**Unit:** USD/tonne  
**Quantity:** 25 tonnes  
**Payment terms:** Cash, other payment terms normalised  
**Timing:** Within 4 weeks  
**Form:** Ingot  
**Publication:** Weekly. Tuesday 3-4pm London time
<table>
<thead>
<tr>
<th>Assessment:</th>
<th><strong>Zinc SHG ingot fca DUP Antwerp</strong></th>
<th>Assessment:</th>
<th><strong>Zinc SHG ingot in-warehouse North European warrants</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td>Free-carrier basis delivery in Antwerp, duty-unpaid premium on top of LME cash prices</td>
<td>Location:</td>
<td>In any LME-approved warehouse in North European locations (Belgium, Germany, the Netherlands, Sweden and the UK), premium on top of LME cash prices</td>
</tr>
<tr>
<td>Unit:</td>
<td>USD/tonne</td>
<td>Unit:</td>
<td>USD/tonne</td>
</tr>
<tr>
<td>Quantity:</td>
<td>25 tonnes</td>
<td>Quantity:</td>
<td>100 tonnes</td>
</tr>
<tr>
<td>Payment terms:</td>
<td>Cash, other payment terms normalised</td>
<td>Payment terms:</td>
<td>Cash, other payment terms normalised</td>
</tr>
<tr>
<td>Timing:</td>
<td>Within 4 weeks</td>
<td>Timing:</td>
<td>Prompt release</td>
</tr>
<tr>
<td>Form:</td>
<td>Ingot</td>
<td>Form:</td>
<td>Ingot</td>
</tr>
<tr>
<td>Publication:</td>
<td>Weekly. Tuesday 3-4pm London time</td>
<td>Publication:</td>
<td>Weekly. Tuesday 3-4pm London time</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assessment:</th>
<th><strong>Zinc SHG ingot DDP Italy</strong></th>
<th></th>
<th><strong>Zinc SHG ingot delivered UK price</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td>Delivered duty paid consumer works in Italy, premium on top of LME cash prices</td>
<td>Type:</td>
<td>Partly-assessed single number</td>
</tr>
<tr>
<td>Grade:</td>
<td>Special High Grade zinc of minimum 99.995% purity, conforming to LME specifications and relevant standards: BS EN 1179:2003, ISO 752:2004 - ZN-1 grade, ASTM B6-12 - LME grade or GB/T 470-2008</td>
<td>Location:</td>
<td>Delivered customer works basis in the UK; all-in price including average of LME GBP cash settlements for the last ten days of the previous month and assessed term premiums for UK delivery (either delivered customer works or FCA Rotterdam plus transport, warehousing, delivery and financing costs)</td>
</tr>
<tr>
<td>Unit:</td>
<td>USD/tonne</td>
<td>Grade:</td>
<td>Special High Grade zinc of minimum 99.995% purity, conforming to LME specifications and relevant standards: BS EN 1179:2003, ISO 752:2004 - ZN-1 grade, ASTM B6-12 - LME grade or GB/T 470-2008</td>
</tr>
<tr>
<td>Quantity:</td>
<td>100 tonnes</td>
<td>Payment terms:</td>
<td>Cash, other payment terms normalised</td>
</tr>
<tr>
<td>Form:</td>
<td>Ingot</td>
<td>Form:</td>
<td>Ingot</td>
</tr>
<tr>
<td>Publication:</td>
<td>Weekly. Tuesday 3-4pm London time</td>
<td>Publication:</td>
<td>Monthly. 1st working day of the month between 1pm and 2pm London time</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assessment:</th>
<th><strong>Zinc SHG ingot in-warehouse North European warrants</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td>In any LME-approved warehouse in North European locations (Belgium, Germany, the Netherlands, Sweden and the UK), premium on top of LME cash prices</td>
</tr>
<tr>
<td>Grade:</td>
<td>Special High Grade zinc of minimum 99.995% purity, conforming to LME specifications and relevant standards: BS EN 1179:2003, ISO 752:2004 - ZN-1 grade, ASTM B6-12 - LME grade or GB/T 470-2008</td>
</tr>
<tr>
<td>Unit:</td>
<td>USD/tonne</td>
</tr>
<tr>
<td>Quantity:</td>
<td>100 tonnes</td>
</tr>
<tr>
<td>Payment terms:</td>
<td>Cash, other payment terms normalised</td>
</tr>
<tr>
<td>Timing:</td>
<td>Prompt release</td>
</tr>
<tr>
<td>Form:</td>
<td>Ingot</td>
</tr>
<tr>
<td>Publication:</td>
<td>Weekly. Tuesday 3-4pm London time</td>
</tr>
</tbody>
</table>

Note: The price was launched in 2013 as a replacement to the Thyssenkrupp Metallurgie UK SHG zinc price, which had been discontinued.
### UNITED STATES

<table>
<thead>
<tr>
<th>Assessment:</th>
<th>Zinc SHG ingot delivered US Midwest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td>Delivered consumer works Midwest USA</td>
</tr>
<tr>
<td>Grade:</td>
<td>Min 99.995% special high grade zinc, conforming to LME specifications and relevant BS EN standards</td>
</tr>
<tr>
<td>Unit:</td>
<td>USD/tonne</td>
</tr>
<tr>
<td>Quantity:</td>
<td>25 tonnes</td>
</tr>
<tr>
<td>Payment terms:</td>
<td>30 days, other payment terms normalised</td>
</tr>
<tr>
<td>Timing:</td>
<td>Within 4 weeks</td>
</tr>
<tr>
<td>Form:</td>
<td>Ingot</td>
</tr>
<tr>
<td>Publication:</td>
<td>Weekly. Tuesday 3-4pm London time</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assessment:</th>
<th>Zinc SHG ingot US warrants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location:</td>
<td>In any LME-approved warehouse in the USA, premium on top of LME cash prices</td>
</tr>
<tr>
<td>Grade:</td>
<td>Special High Grade zinc of minimum 99.995% purity, conforming to LME specifications and relevant standards: BS EN 1179:2003, ISO 752:2004 - ZN-1 grade, ASTM B6-12 - LME grade or GB/T 470-2008</td>
</tr>
<tr>
<td>Unit:</td>
<td>USD/tonne</td>
</tr>
<tr>
<td>Quantity:</td>
<td>25 tonnes</td>
</tr>
<tr>
<td>Payment terms:</td>
<td>Cash, other payment terms normalised</td>
</tr>
<tr>
<td>Timing:</td>
<td>Prompt release</td>
</tr>
<tr>
<td>Form:</td>
<td>Ingot</td>
</tr>
<tr>
<td>Publication:</td>
<td>Weekly. Tuesday 3-4pm London time</td>
</tr>
</tbody>
</table>
Non-ferrous Prices

Bulk alloys
Ferro-chrome

CHINA
Index: Ferro-chrome Index
Type: Index single figure
Basis: CIF Shanghai, duty unpaid
Currency: USD per lb contained Cr
Chrome: Basis 50% Cr, range 48-52% Cr
Carbon: Base 7.0%, max 9.0%
Silicon: Base 3.0%, max 6.0%
Phosphorous: Max 0.03%
Sulphur: Max 0.06%
Material form: Lump
Delivered: Port Shanghai. Other delivery ports normalised to Shanghai
Material origin: All origins
Delivered window: Within 6 weeks
Delivered method: Seaborne
Payment terms: LC at sight
Publication: Weekly. Friday 3pm London time
Data History: From May 2012

Assessment: Ferro-chrome China Contract 6-8% C, basis 50% Cr delivered duty paid China CNY/tonne
Basis: Delivered duty paid China
Unit: CNY/tonne, normalised to Cr 50%
Min lot size: 1,000 tonnes
Payment terms: Cash, other payment terms normalised
Quality: Cr: 50% min, C: 6-8%, Si: 5% max, P: 0.04% max, S: 0.04% max
Form: Lump
Publication: Weekly. Friday between 2pm and 3pm London time

JAPAN
Assessment: High-carbon Ferro-chrome Japan import 8-9% C, basis 60% Cr, cif Japan, duty-unpaid, $ per lb contained chrome
Type: Assessed range
Basis: Cif Japan
Unit: USD per lb of chrome contained
Min lot size: 100 tonnes
Payment terms: LC at sight and TT
Quality: Cr: 60% min, C: 8-9% max, Si 3-4% max, P: 0.04% max, S: 0.06% max; size 10-50mm
Form: Lump
Publication: Weekly. Thursday between 2pm and 3pm London time

SOUTHEAST ASIA
Assessment: High-carbon Ferro-chrome South Korea import 8-9% C, basis 60% Cr, cif South Korea, duty unpaid, $ per lb contained chrome
Type: Assessed range
Basis: CIF South Korea
Unit: USD per lb of chrome contained
Min lot size: 100 tonnes
Payment terms: LC at sight and TT
Quality: Cr: 60% min, C: 8-9% max, Si 3-4% max, P: 0.04% max, S: 0.06% max; size 10-50mm
Form: Lump
Publication: Weekly. Thursday between 2pm and 3pm London time

UNITED STATES
Assessment: Ferro-chrome, high carbon, US
Type: Assessed range
Unit: US cents per pound
Basis: Fob Pittsburgh
Quality: Cr min: 62.00%, Si max. 3.00%, Ca: 6.00 - 8.00%
Minimum Lot size: 20 tons
Publication: Weekly. Thursday

www.fastmarkets.com
Assessment: High carbon ferro-chrome (6-8.5% C basis 60-70% Cr max 1.5% Si) major European destinations $/lb Cr

Basis: Delivered consumer works Europe
Unit: USD per lb of chrome contained
Min lot size: 24 tonnes
Payment terms: 30 days, other payment terms normalised
Quality: Cr: 60-70%, C: 6-8.5%, Si: 1.5%. High carbon ferro-chrome of the following brands and origins: Kazakhstan (Kazchrome); Russia (Tikhvin, Chelyabinsk); Turkey (Eti Krom); Sweden (Vargon Alloys); Albania (Albchrome)
Form: Lump
Publication: Weekly. Friday between 2pm and 3pm London time

Assessment: Low carbon ferro-chrome (0.06% C max - 65% Cr) Delivered consumer works $/lb Cr, Europe

Type: Assessed range
Basis: Delivered consumer works Europe
Unit: USD per lb of chrome contained
Min lot size: 25 tonnes
Payment terms: 30 days, other payment terms normalised
Quality: Cr: 65% basis (range 60-70% Cr); C: 0.06% max; Si: 1.5% max; P: 0.05% max; S: 0.05% max
Form: Lump
Publication: Fortnightly. Friday between 2pm and 3pm London time

Assessment: Low carbon ferro-chrome (0.10% C avg 65-70% Cr) Delivered consumer works Europe $/lb Cr

Quality: Cr: 65% basis (range 65-70% Cr); C: 0.10% excluding material up to 0.06% C; Si: 1.5% max; P: 0.05% max; S: 0.05% max
Quantity: Min 25 tonnes
Location: Delivered consumer works Europe
Unit: USD per lb of chrome contained
Form: Lump
Payment terms: 30 days, other payment terms normalised
Publication: Fortnightly. Friday 2-3pm London time

Assessment: Low phosphorous ferro-chrome (Cr min 65% P max 0.015%) delivered consumer works Europe $/lb

Location: Delivered consumer works Europe
Unit: USD per lb of chrome contained
Min lot size: 25 tonnes
Payment terms: 30 days, other payment terms normalised
Quality: Cr: 65% min, Si: 1% max, C: 6-8%, P: 0.015% max, Ti:0.05%
Form: Lump
Publication: Fortnightly. Friday 2-3pm London time

Assessment: Ferro-chrome lumpy cr charge basis 52 Cr and high carbon delivered consumer works Europe $/lb Cr quarterly

Price type: Industry-settled single figure
Basis: Delivered consumer works Europe
Unit: US cents per lb of chrome contained
Min lot size: Not specified
Payment terms: Not specified
Quality: N/A
Form: Lump
Publication: Quarterly as per industry announcement to Johannesburg Stock Exchange

Notea: Metal Bulletin does not independently assess this price, but publishes it as a reference. The price is settled every quarter by leading ferro-chrome producers and consumers and is then announced by a leading producer to the Johannesburg Stock Exchange. Metal Bulletin obtains the benchmark number from market participants and/or from the official announcement.
European ferro-chrome quarterly benchmark indicator

**Type:** Indicator, single figure
**Quality:** Ferro-chrome lumpy, basis 52% chrome content
**Currency:** US cents per lb of chrome content to major European destinations
**Publication:** Weekly, Friday 3pm London time
**Note:** The price indicates a representative level for the European ferro-chrome benchmark if it were to be settled on that Friday. It does so by using a proprietary Metal Bulletin formula based on the historical relationship between the European ferro-chrome benchmark and Metal Bulletin market data.

---

**UNITED STATES**

**Assessment:** Ferro-chrome, low carbon, 0.05%C-65% min Cr, US
**Quality:** Cr min: 65.00%, Ca: 0.05%, Si: max 1.00%
**Quantity:** 20 tons
**Location:** FOB Pittsburgh
**Unit:** US cents per pound
**Publication:** Weekly, Thursday

**Assessment:** Ferro-chrome, low carbon, 0.10%C-62% min Cr, US
**Type:** Assessed range
**Currency:** US cents per pound
**Basis:** Fob Pittsburgh
**Quality:** Cr min 62.00%, C: 0.10%, Si max: 1.00%
**Minimum lot size:** 20 tons
**Publication:** Weekly, Thursday

---

**EUROPE**

**Assessment:** Ferro-manganese 78% Mn max standard 7.5% C Delivered consumer works Europe €/tonne
**Basis:** Delivered consumer works Europe
**Unit:** EUR/tonne
**Min lot size:** 100 tonnes
**Payment terms:** Cash, other payment terms normalised
**Quality:** Mn: 75% min 78% max, Si: 2% max, C: 6% min 8% max, P: 0.35% max, S: 0.04% max
**Form:** Lump in the range of 10-100mm, 90% min
**Publication:** Weekly, Friday between 2pm and 3pm London time

---

**CHINA**

**Assessment:** Ferro-manganese, min 65% Mn max 7.0% C, China CNY/tonne
**Location:** China
**Unit:** CNY/tonne, all Mn grades normalised to 65% on pro rata basis
**Min lot size:** 100 tonnes
**Payment terms:** Cash, other payment terms normalised
**Quality:** Mn: 65-72%, Si: 4.5% max, C: 7.0% max, P: 0.4% max, S: 0.03% max
**Form:** Lump
**Publication:** Weekly, Friday 2-3pm London time

---

**UNITED STATES**

**Assessment:** Ferro-manganese, high carbon, US
**Currency:** US dollars per long ton
**Basis:** In-warehouse Pittsburgh
**Quality:** Mn: 78.00%, C: 7.50%
**Minimum lot size:** 20 tons
**Frequency:** Weekly, Thursday

**Assessment:** Ferro-manganese, medium carbon, US
**Currency:** US cents per pound
**Basis:** Fob Pittsburgh
**Quality:** Manganese min. 80.00%, carbon max. 1.50%
**Minimum lot size:** 20 tons
**Frequency:** Weekly, Thursday
Non-ferrous Prices

Ferro-silicon

**CHINA**

**Assessment:** Ferro-silicon min 75% Si China CNY/tonne

**Quality:**
- Si: 75-80%; Mn: 0.4% max; Al: 2.0% max; Cr: 0.3% max; P: 0.035% max; S: 0.02% max; C: 0.1% max

**Quantity:** 100 tonnes

**Location:** China

**Unit:** CNY/tonne, price for all Si grades normalised to 75% on pro rata basis

**Payment terms:** Cash, other payment terms normalised

**Form:** Lump

**Publication:** Weekly. Friday between 2pm and 3pm London time

**Assessment:** Ferro-silicon export min 75% Si Fob China main ports $/tonne

**Basis:** Fob China main ports

**Unit:** USD/tonne, normalised to 75% Si on pro rata basis

**Quantity:** 100 tonnes

**Payment terms:** Cash, other payment terms normalised

**Quality:**
- Si: 75-80%; Mn: 0.4% max; Al: 2.0% max; Cr: 0.3% max; P: 0.035% max; S: 0.02% max; C: 0.1% max

**Form:** Lump

**Publication:** Weekly. Friday between 2pm and 3pm London time

**EUROPE**

**Assessment:** Ferro-silicon lumpy basis 75% Si (Scale pro-rata) Delivered consumer works Europe €/tonne

**Quality:**
- Si: 75% basis (scale pro rata); Al: 1.5% max; C: 0.10-0.15% max; Ca: 0.6% max; Ti: 0.15% max; P: 0.02% max; S: 0.025% max

**Quantity:** 100 tonnes

**Location:** Delivered consumer works Europe

**Unit:** EUR/tonne

**Payment terms:** Cash, other payment terms normalised

**Form:** Lump

**Publication:** Weekly. Friday between 2pm and 3pm London time

**UNIVERSAL**

**Assessment:** Ferro-silicon, US

**Type:** Assessed range

**Currency:** US cents per pound

**Basis:** In-warehouse Pittsburgh

**Quality:** Silicon 75.00%

**Minimum lot size:** 20 tons

**Frequency:** Weekly. Thursday

Silico-manganese

**EUROPE**

**Assessment:** Silico-manganese lumpy 65-75% Mn basis 15-19% Si Delivered consumer works Europe €/tonne

**Quality:**
- Mn: 65-75% (Scale pro rata), Si: 15-19%, C: 2.0-2.5%, P: 0.3%, S: 0.03%

**Quantity:** 100 tonnes

**Location:** Delivered consumer works Europe

**Unit:** EUR/tonne

**Payment terms:** Cash, other payment terms normalised

**Form:** Lump

**Publication:** Weekly. Friday between 2pm and 3pm London time

**CHINA**

**Assessment:** Silico-manganese min 65% Mn max 17% Si, delivered duty paid China CNY/tonne

**Basis:** Delivered duty paid China

**Unit:** CNY/tonne, all Mn grades normalised to 65% basis on pro rata basis

**Min lot size:** 100 tonnes

**Payment terms:** Cash, other terms normalised

**Quality:**
- Mn: 65-72%; Si: 17%; C: 1.8% max; P: 0.25% max; S: 0.04% max

**Form:** Lump

**Publication:** Weekly. Friday between 2pm and 3pm London time
### India

**Assessment:** Silico-manganese 65% min Mn 16% min Si Fob India $/tonne

**Location:** Fob India  
**Unit:** USD/tonne  
**Min lot size:** 100 tonnes  
**Quality:** Mn: 65% Si: 16% C: 2% P: 0.35% S: 0.03%  
**Form:** Lump  
**Payment terms:** Letter of Credit  
**Publication:** Weekly. Friday between 2pm and 3pm London time

### United States

**Assessment:** Silico-manganese, US  
**Quality:** Manganese min. 65.00%; silicon min. 16.00%  
**Quantity:** 20 tons  
**Location:** In-warehouse Pittsburgh  
**Unit:** US cents per pound  
**Publication:** Weekly. Thursday

### China

**Assessment:** High-grade NPI Ni content 10-15%  
**Contract price delivered duty paid China CNY/tonne**

**Basis:** Delivered duty paid China  
**Currency:** CNY  
**Unit:** Tonne  
**Quality:** Ni 10-15%, Fe 80%, P 0.04% max, S 0.03% max, Si 4.5% max, C 4% max  
**Form:** Lump  
**Packaging:** Big bag of 1 tonne  
**Min lot size:** 1,000 tonnes  
**Payment terms:** Cash  
**Publication:** Weekly. Tuesday between 2pm and 3pm UK time

### Nickel Pig Iron

**Assessment:** High-grade NPI Ni content 10-15%, spot price delivered duty-paid China CNY/tonne

**Basis:** Delivered duty paid China  
**Currency:** Yuan  
**Unit:** tonne  
**Quality:** Ni 10-15%, Fe 80%, P 0.04% max, S 0.03% max, Si 4.5% max, C 4% max  
**Form:** Lump  
**Packaging:** Big bag of 1 tonne  
**Min lot size:** 500 tonnes  
**Payment terms:** Cash  
**Publication:** Weekly. Tuesday between 2pm and 3pm UK time

### Ferro-nickel

**Assessment:** Ferro-nickel 26-32% nickel content cif China

**Basis:** Cif China  
**Unit:** USD/tonne  
**Quality:** Ni typical 30% (range 26%-32%), P 0.0045% max, S 0.060% max  
**Calculation:** Ferro-nickel price = (LME Ni price + premium/ discount) x nickel content  
**Min lot size:** At least 100 nickel metal tonnes per lot  
**Payment terms:** Cash, other payment terms normalised  
**Publication:** Last Monday of each month between 2pm to 3pm London time
Noble alloys

Molybdenum

EUROPE

Assessment: Molybdenum drummed molybdic oxide, Rotterdam $/lb Mo
Quality: Mo: 57% min, Cu: 0.5% max, S: 0.1% max. P: 0.05% max. Pb: 0.05% max. C: 0.1% max. All other elements should each be 0.10% max, with the exception of Si, which should be 6% max.
Quantity: 10 tonnes (+/- 2%)
Location: Rotterdam
Unit: USD per lb Mo
Form: Sandy powder (0-4 mm)
Payment terms: Cash; other terms normalised
Publication: Twice weekly. Wednesday and Friday between 2pm and 3pm London time

Assessment: Ferro-molybdenum 65% min Rotterdam $/kg Mo
Basis: Rotterdam
Unit: USD per kg Mo
Min lot size: 10 tonnes (+/- 2%)
Payment terms: Cash; other payment terms normalised
Quality: Mo: 65% min Si: 1.50% max Cu: 0.50% max C: 0.10% max S: 0.10% max P: 0.05% max. All other elements should be each 0.10% max, with the exception of Fe
Form: Lump, in range from 5-50mm, 90% minimum
Publication: Twice weekly. Wednesday and Friday 2-3pm London time

CHINA

Assessment: Ferro-titanium min 70% Ti (max 4.5% Al), delivered duty paid Europe $/kg Ti
Quality: Ti: 70%; Al: 4.5%; V: 3%; O2: 2%; C: 0.2%; S: 0.05%; P: 0.05%; Si: 0.5%; N:0.5%; Sn: 0.5%; Ni:0.05%; Cr: 0.5%; Pb: 0.01%; Bi: 0.01%
Quantity: 10-tonne lots (+/- 2%)
Location: DDP Europe
Unit: USD per kg Ti
Form: Lump
Payment terms: Cash; other payment terms normalised
Publication: Weekly. Wednesday 2-3pm London

UNITED STATES

Assessment: Molybdenum canned molybdic oxide, US
Quality: Mo min. 57.00%, copper max. 0.50%; phosphorus 0.05%; lead 0.05%; sulphur 0.10%; carbon 0.10%; moisture 0.10%
Quantity: 10 tons
Location: In-warehouse US
Unit: USD per pound
Publication: Weekly. Thursday

Assessment: Ferro-molybdenum, US
Quality: Mo: 65.00-70.00%
Quantity: 10 tons
Location: In-warehouse Pittsburgh
Unit: USD per pound
Publication: Weekly. Thursday
**Tungsten**

**EUROPE**

Assessment: Tungsten APT Europe min 88.5% WO₃ cif Rotterdam duty free $/mtu WO₃

Basis: CIF Rotterdam, duty free

Unit: USD per mtu WO₃

Min lot size: 20 tonnes (+/- 2%)

Payment terms: Cash; Delivered up to three months in advance considered spot business

Quality: WO₃: 88.5% min; Al: 0.001% max; As: 0.0005% max; Bi: 0.0005% max; Ca: 0.001% max; Cd: 0.0005% max; Co: 0.0005% max; Cr: 0.0005% max; Cu: 0.0005% max; Fe: 0.001% max; K: 0.001% max; Mn: 0.001% max; Mg: 0.001% max; Mo: 0.002% max; Na: 0.001% max; Ni: 0.0005% max; P: 0.001% max; Pb: 0.0005% max; S: 0.001% max; Sn: 0.0005% max; Ti: 0.0005% max; V: 0.001% max

Form: White finely divided free-flowing crystals

Publication: Weekly. Friday 2-3pm London

---

**CHINA**

Assessment: Tungsten APT China min 88.5% WO₃ Fob China main ports $/mtu WO₃

Basis: Fob China main ports

Unit: USD per mtu WO₃

Min lot size: 17 tonnes

Payment terms: Cash or 30 days

Quality: WO₃: 88.5% min; Al 0.001% max; As 0.0005% max; Bi 0.0001% max; Ca 0.001% max; Cd 0.0001% max; Co 0.005% max; Cr 0.001% max; Cu 0.0005% max; Fe 0.001% max; K 0.001% max; Mn 0.0005% max; Mg 0.0005% max; Mo 0.001% max; Na 0.001% max; Ni 0.0005% max; P 0.001% max; Pb 0.0001% max; S 0.001% max; Sn 0.0002% max; Ti 0.0005% max; V 0.001% max

Form: White finely divided free-flowing crystals

Publication: Weekly. Friday 2-3pm London

---

**Ferro-tungsten**

**EUROPE**

Assessment: Ferro-tungsten basis 75% W Rotterdam duty unpaid $/kg W

Quality: W: 75.00% min. C: 0.40% max. S: 0.08% max. Mn: 0.50% max. As: 0.10% max. Sn: 0.08% max. P: 0.05% max. Si: 0.70% max. Cu: 0.15% max. Sb: 0.05% max.

Form: Lump

Payment terms: Cash, other payment terms normalised

Publication: Twice weekly. Wednesday and Friday 2-3pm London

---

**Tungsten concentrate 65% WO₃**

China

CNY/tonne

Basis: China

Currency: CNY

Unit: tonne

Min lot size: 50 tonnes

Payment terms: Cash or 30 days

Quality: WO₃ 65% min, S 0.8% max, P 0.10% max, As 0.15% max, Mo 0.05% max, Ca 5% max, Mn 1.5% max, Cu 0.25% max, Sn 0.25% max, SiO₂ 7.0% max

Form: Powder

Publication: Weekly. Wednesday 2-3pm London
Vanadium

EUROPE
Assessment: Ferro-vanadium 78% min delivered consumer works Europe duty paid $/kg V
Quality: V: 78%; Al: 1.5%; Si: 1.5%; C: 0.25%; S: 0.05%; P: 0.06%; Mn: 0.5%. Other elements: trace only, with the exception of Fe
Quantity: Minimum 5-tonne lots
Location: Delivered consumer works Europe
Unit: USD per kg V
Form: Lumps
Payment terms: Cash; other payment terms normalised
Publication: Twice weekly. Wednesday and Friday between 2pm and 3pm London time

Assessment: Vanadium pentoxide min 98% Rotterdam $/lb V2O5
Quality: 98.00 % min Si: 0.25 % max. Fe: 0.30 % max. S: 0.03 % max. P: 0.05 % max. As: 0.02 % max. Na2+K2O: 1.50 % max
Location: In-warehouse Rotterdam
Unit: USD per lb V2O5
Min lot size: Min 5 tonnes (+/- 5%)
Payment terms: Cash, other payment terms normalised
Form: Brown flake
Publication: Weekly. Friday between 2pm and 3pm London time

UNITED STATES
Assessment: Ferro-vanadium, US $/lb
Unit: USD per lb
Location: In-warehouse Pittsburgh
Quality: V: 70.00-80.00%
Quantity: 10 tons
Publication: Weekly. Thursday

CHINA
Assessment: Description: Ferro-vanadium, 78% min $/kg V, fob China
Quality: V: 78% min. Al: 1.5% max. Si: 2% max. C: 0.06%. S: 0.05%. P: 0.05%. As: 0.06%. Mn: 0.5%. Cu: 0.1%. Ni: 0.15%. Mesh size: 10-50mm, 90% min.
Quantity: Min 5 tonnes (+/- 5%)
Location: FOB China (other delivery terms normalized)
Delivery: Within 20 days
Unit: $/kg V
Form: Lump
Payment terms: L/C, T/T, other payment terms normalized
Publication: Weekly, Thursday 2-3pm London time
Notes: Assessed by Fastmarkets in London and Shanghai

Assessment: Vanadium pentoxide, 98% min, $/lb V2O5, fob China
Quality: V: 98.00% min. Si: 0.25% max. Fe: 0.30% max. S: 0.03% max. P: 0.05% max. As: 0.02% max. Na2+K2O: 1.50% max.
Unit: $/lb V2O5
Quantity: Min 5 tonnes (+/- 5%)
Location: FOB China (other delivery terms normalized)
Delivery: Within 20 days
Form: Brown flake
Payment terms: L/C, T/T, other payment terms normalized
Publication: Weekly, Thursday, 2-3pm London time
Notes: Assessed by Fastmarkets in London and Shanghai
Ores

Bauxite

AFRICA
Assessment: Bauxite Fob Kamsar, Guinea, single figure
Units: USD per tonne per dmtu
Basis: FOB Guinea (other delivered terms normalised)
Chemistry: Total alumina: 48.5% min, 53% max; total silica 1.20% min, 2.10% max; reactive silica 3.2% max; Fe 22% max; Ti 4% max; organic carbon 0.15% max; moisture content 5.5% min, 7.5% max
Trade size: Minimum 20,000 tonnes
Loading port: Kamsar (other ports normalised)
Loading window: Within two months
Delivered method: Bulk carrier
Payment terms: 30 days after loading (other payment terms normalised)
Publication: Fortnightly. Thursdays between 2pm and 3pm London time

BRAZIL
Assessment: Bauxite Fob Trombetas, Brazil, single figure
Units: USD per tonne per dmtu
Basis: FOB Brazil (other Delivered terms normalised)
Chemical spec: Total alumina 50.5% min, 55% max; total silica 4.3% min, 5.6% max; reactive silica 4% min, 5% max; Fe 12% max; Ti 1.5% max; moisture content 9% min, 10% max
Trade size: Minimum 20,000 tonnes
Payment terms: 30 days after loading (other payment terms normalised)
Loading port: Trombetas (other ports normalised)
Loading window: Within two months
Delivered method: Bulk carrier
Publication: Fortnightly. Thursdays between 2pm and 3pm London time

Chrome ore

AFRICA
Index: South African UG2 chrome ore Concentrates, single figure
Unit: USD per dry metric tonne unit
Basis: CIF China
Chrome: Base 42%, range 40-43%
Silica: Maximum 6%
Alumina: Maximum 18%
Magnesium oxide: Maximum 0.15%
Phosphorous: Maximum 0.01%
Sulphur: Maximum 0.01%
Chrome: Iron ratio: 1.2:1 minimum
Form: Sizing up to 1mm (95% min)
Packaging: Bulk (container deals normalised)
Trade Size: Minimum 2,000 tonnes
Payment terms: Payment at sight
Publication: Weekly. Friday 3pm London time

CHINA
Assessment: Chrome ore Turkish lumpy 40-42% cfr main Chinese ports $/tonne
Location: CIF China main ports
Unit: USD per tonne
Min lot size: 1,000 tonnes
Quality: Cr: 40-42%; SiO2: 15% max; Al2O3: 16% max; MgO: 26% max; S: 0.02%; P: 0.01%, Cr:Fe: 2.6:1 basis, 2.5:1 min
Form: Lump
Payment terms: Payment at sight
Publication: Weekly. Friday Between 2pm and 3pm London time
## Manganese ore

### SOUTH AFRICA

- **Index:** MnO137 FOB
- **Unit:** US$ per dry metric tonne unit, fob Port Elizabeth, South Africa
- **Contents:**
  - Manganese: Base 37%, Range 35-39%
  - Iron: Base 5%, Maximum 10%
  - Silica: Base 5.5%, Maximum 12%
  - Phosphorous: Base 0.025%, Maximum 0.160%
  - Alumina: Base 0.2%, Maximum 2%
- **Moisture content:** Base 4%, Maximum 12%
- **Form:** Lump
- **Delivery:** Port Elizabeth (South Africa)
- **Granularity:** 5.5-75mm
- **Quantity:** 5,000 tonnes
- **Delivery window:** Within nine weeks
- **Payment:** Cash or equivalent
- **Publication:** Friday, 3pm London

### CHINA

- **Index:** MnO144 CIF
- **Unit:** US$ per dry metric tonne unit, cif Tianjin, China
- **Content:**
  - Manganese: Base 44%, Range 42-48%
  - Iron content: Base 5%, Maximum 16%
  - Silica content: Base 11%, Maximum 12%
  - Phosphorous: Base 0.10%, Maximum 0.16%
  - Alumina: Base 5%, Maximum 14%
  - Moisture: Base 4%, Maximum 12%
- **Form:** Lump
- **Delivery:** Tianjin (China) – normalized for any Chinese mainland sea port
- **Granularity:** 5.5-75mm
- **Quantity:** Min 5,000 tonnes
- **Delivery window:** Immediate
- **Payment:** Cash or equivalent
- **Publication:** Friday, 3pm London
Manganese ore stocks

**CHINA**

- **Assessment:** Manganese ore inventories at the main Chinese ports of Tianjin and Qinzhou, range based on survey
- **Basis:** Million tonnes
- **Assessed by:** Metal Bulletin’s ores & alloys team in Singapore
- **Publication time:** Weekly, Wednesday 2-3pm London time

---

Nickel ore

**CHINA**

- **Assessment:** Laterite nickel ore 1.8% cif China $/tonne
- **Quality:** 1.8% Ni, 15-20% Fe, Water content 30-35%, Si:Mg ratio <2
- **Quantity:** 50,000 tonnes
- **Location:** CIF China
- **Unit:** USD per tonne
- **Payment terms:** Letter of Credit
- **Publication:** Weekly, Tuesday between 2pm and 3pm UK time

---

- **Assessment:** Laterite nickel ore with 1.5% nickel content cif China
- **Quality:** Nickel ore: 1.5% Ni, 15-20% Fe, Water content 30-35%
- **Quantity:** 50,000 tonnes
- **Location:** CIF China
- **Unit:** USD per tonne
- **Payment terms:** Cash, other payment terms normalised
- **Publication:** Weekly, Tuesday between 2pm and 3pm UK time

---

- **Unit:** Yuan per dry metric tonne unit, fot Tianjin, China
- **Manganese:** Base 37%, Range 35-39%
- **Iron content:** Base 5%, Maximum 10%
- **Silica content:** Base 5.5%, Maximum 12%
- **Phosphorus:** Base 0.025%, Maximum 0.16%
- **Alumina:** Base 0.2%, Maximum 2%
- **Moisture:** Base 4%, Maximum 12%
- **Form:** Lump
- **Delivery:** Tianjin (China) – normalized for any Chinese mainland sea port
- **Granularity:** 5.5-75mm
- **Quantity:** Min 1,000 tonnes
- **Delivery window:** Immediate
- **Payment:** Cash or equivalent
- **Publication:** Friday, 3pm London
Non-ferrous Prices

Minor metals

Metal Bulletin’s antimony, arsenic, bismuth, cadmium, chromium, gallium, hafnium, indium, manganese, mercury, rhenium and selenium prices are produced in line with the specifications published by the Minor Metals Trade Association.

Antimony

CHINA
Assessment: Antimony metal MMTA Standard Grade II delivered duty paid China CNY/tonne
Quality: MMTA standard Grade II. Sb: 99.65% min, As: 0.1% max, Pb: 0.2% max, Se: 0.002% max, Cd: 0.002% max, Sn: 0.005% max, Te: 0.005% max, Bi: 0.01% max, Cu: 0.02% max, Fe: 0.02% max
Quantity: 1 tonne
Location: Delivered duty paid China
Unit: CNY/tonne
Form: Ingot
Payment terms: Cash
Publication: Weekly. Wednesday between 2pm and 3pm London time

EUROPE
Assessment: Antimony max 100 ppm Bi Rotterdam $/tonne
Type: Assessed range
Basis: Rotterdam
Currency: USD
Unit: Tonne
Min lot size: 10 tonnes (+/-2%)
Payment terms: Cash, other payment terms normalised
Quality: Sb: Min 99.65% Bi: Max 100ppm Se: Max 50ppm Cu: Max 200ppm Fe: Max 200ppm Pb: Max 0.2%
Form: Ingot
Publication: Twice weekly. Wednesday between 2pm and 3pm London time
Packaging: Original producer’s packing, on pallets or in wooden cases
Delivery time: Prompt, within ten calendar days

Arsenic

EUROPE
Assessment: Arsenic 99% min Rotterdam $/lb
Quality: As: 99% min, no other elements specified
Quantity: 1 tonne (+/-2%)
Location: Rotterdam
Timing: Prompt release
Unit: USD per lb
Form: Lumpy, fist-sized and downwards
Packaging: Original producer’s poly-lined steel drums, each 50kg net, in accordance with the IMDG code and RID & ADR rules
Payment terms: Cash, other payment terms normalised
Publication: Twice weekly. Wednesday between 2pm and 3pm London time
**Bismuth**

**EUROPE**

Assessment: Bismuth 99.99% min Rotterdam $/lb
Quality: Bi: 99.99%, no other elements specified
Quantity: 1 tonne
Location: Rotterdam
Timing: Prompt release
Unit: USD/lb
Form: Ingot
Packaging: Original producers’ packaging
Payment terms: Cash, other payment terms normalised
Publication: Twice weekly, Wednesday and Friday between 2pm and 3pm London time

**CHINA**

Assessment: Bismuth 99.99% min China CNY/tonne
Quality: Bi: 99.99% min, no other elements specified
Quantity: 1 tonne
Location: China
Unit: CNY/tonne
Form: Ingot
Payment terms: Cash, other payment terms normalised
Publication: Weekly, Friday between 2pm and 3pm London time

**Cadmium**

**GLOBAL**

Assessment: Cadmium 99.95% min cif global ports US cents/lb
Quality: Cd: 99.95%, no other elements specified
Quantity: 10 tonnes
Location: CIF global port basis
Timing: Prompt release
Unit: US cents per lb
Form: Sticks or ingots
Payment terms: Cash, other payment terms normalised
Publication: Twice weekly, Wednesday and Friday between 2pm and 3pm London time

**UNITED STATES**

Assessment: Chromium alumino-thermic, min 99% ex-warehouse United States, US$/pound
Quality: Min 99% chromium
Quantity: 3 tonnes
Location: Ex-warehouse, US
Unit: USD per pound
Form: Lump, packaged in drums
Publication: Once a week every Thursday

**Chromium**

**EUROPE**

Assessment: Chromium alumino-thermic 99% min Rotterdam $/tonne
Quality: Conforming to MMTA Russian X99H4 specification. Cr: 99.0 min % Fe: 0.5 max % Al: 0.2 max % Si: 0.2 max % C: 0.03 max % S: 0.02 max % Pb: 0.0008 max % Cu: 0.01 max % P: 0.02 max % Zn: 0.006 max % Sb: 0.008 max % Sn: 0.004 max % Bi: 0.0005 max % As:0.01 max % Co: 0.005 max % N: 0.04 max %
Quantity: 10 tonnes (+/-2%)
Location: Rotterdam
Timing: Prompt release
Unit: USD per tonne
Form: Lump
Packaging: In steel drums of uniform net weight, usually 300kg
Payment terms: Cash, other terms normalised
Publication: Weekly. Friday between 2pm and 3pm London time
Cobalt

**CHINA**

**Assessment:** Cobalt tetroxide min 72.6% Co delivered China CNY/tonne

- **Quality:** Min 72.6% Co
- **Basis:** Delivered China
- **Unit:** CNY/tonne
- **Quantity:** Min 1 tonne
- **Payment terms:** Cash
- **Publication:** Twice weekly. Wednesday and Friday between 2pm and 3pm London time

**Assessment:** Cobalt metal min 99.8% domestic China CNY/tonne

- **Quality:** Cobalt metal, Co 99.8% min
- **Basis:** Ex-works China
- **Unit:** CNY/tonne
- **Quantity:** Min 1 tonne
- **Form:** Cathode
- **Payment terms:** Cash
- **Publication:** Twice weekly. Wednesday and Friday between 2pm and 3pm London time

**EUROPE**

**Assessment:** Cobalt Alloy Grade, Rotterdam $ per lb

- **Location:** Rotterdam
- **Unit:** US$ per lb
- **Delivery:** Within 30 days, other terms normalised
- **Min lot size:** 1 tonne
- **Max lot size:** 100 tonnes
- **Quality:** Alloy-grade cobalt metal, 99.8% minimum cobalt content. Nikkelverk cut cathodes, Vale cobalt rounds, SMM cut cathodes, Jinchuan cut cathodes, Jiangsu (KLK) broken cathodes, Sherritt briquettes
- **Form:** Cut cathodes, rounds, broken cathodes, briquettes
- **Packaging:** Original packaging
- **Payment terms:** Cash; other terms normalised
- **Publication:** Twice weekly. Wednesday and Friday, at 3pm London time

Assessment: Cobalt Standard Grade, Rotterdam $ per lb

- **Location:** Rotterdam
- **Unit:** US$ per lb
- **Delivery:** Within 30 days, other terms normalised
- **Min lot size:** 1 tonne
- **Max lot size:** 100 tonnes
- **Quality:** Standard-grade cobalt metal, 99.8% minimum cobalt content. Katanga cathodes, Chambishi broken cathodes, CTT broken cathodes, Minara briquettes, Ambatovy briquettes
- **Form:** Broken cathodes, briquettes
- **Packaging:** Original packaging
- **Payment terms:** Cash; other terms normalised
- **Publication:** Twice weekly. Wednesday and Friday, at 3pm London time

*Please note, in light of feedback received as part of the consultation on its international cobalt price specifications, Fastmarkets MB changed the names of its benchmark in-warehouse Rotterdam assessments in January 2019. From January 2019, the name ‘standard-grade’ replaced the name ‘low-grade’. The name ‘alloy-grade’ replaced the name ‘high-grade’."

Cobalt sulfate

Please see Battery Raw Materials section.

Gallium

**EUROPE**

**Assessment:** Gallium min 99.99% Ga Rotterdam $/kg

- **Basis:** Rotterdam
- **Unit:** USD/kg
- **Min lot size:** 100 kg (+/- 2%)
- **Quality:** Ga: 99.99% min, no other elements specified
- **Form:** Ingot
- **Packaging:** Packed in plastic sleeves, original producers’ cases
- **Delivery time:** Prompt release
- **Payment terms:** Cash, other payment terms normalised
- **Publication:** Twice weekly. Wednesday and Friday between 2pm and 3pm London time
**Non-ferrous Prices**

**Assessment:** Gallium min 99.99% Ga China CNY/kg
- **Basis:** China
- **Currency:** CNY
- **Unit:** CNY/kg
- **Min lot size:** 50kg
- **Payment terms:** Cash, other payment terms normalised
- **Quality:** Ga: 99.99% min, no other elements specified
- **Form:** Ingot
- **Publication:** Weekly. Wednesday by 3pm London time.

**Assessment:** Germanium Dioxide Rotterdam $/kg
- **Location:** Rotterdam
- **Unit:** USD/kg
- **Min lot size:** 100 kg (+/- 2%)  
- **Payment terms:** Cash, other payment terms normalised
- **Quality:** GeO2 99.99 % min, Ge 69 % approx
- **Form:** White powder
- **Packaging:** Original producer cases, normally 25kg each
- **Delivery:** Prompt release
- **Publication:** Twice-weekly. Wednesday and Friday between 2pm and 3pm London time

**Germanium**

**CHINA**
- **Assessment:** Germanium 99.99% Ge China CNY/kg
  - **Basis:** China
  - **Unit:** CNY/kg
  - **Min lot size:** 50 kg
  - **Payment terms:** Cash, other payment terms normalised
  - **Quality:** Ge: 99.99% min, 50ohm/cm; no other elements specified
  - **Form:** Ingot with no specific dimension or weight
  - **Publication:** Weekly. Wednesday by 3pm London time

**EUROPE**
- **Assessment:** Germanium 99.99% Ge Rotterdam $/kg
  - **Type:** Assessed range
  - **Location:** Rotterdam
  - **Currency:** USD
  - **Unit:** kg
  - **Min lot size:** 100 kg (+/- 2%)
  - **Payment terms:** Cash, other payment terms normalised
  - **Quality:** Ga: 99.999%, no other elements specified
  - **Form:** Ingot
  - **Packaging:** Packed in plastic sleeves, original producer cases
  - **Delivery:** Prompt release
  - **Payment:** Cash, other payment terms normalised
  - **Publication:** Twice-weekly. Wednesday and Friday between 2pm and 3pm London time

**Hafnium**

**GLOBAL**
- **Assessment:** Hafnium, 1% Zr max, global locations, $/kg
  - **Location:** Global
  - **Unit:** USD/per kg
  - **Min lot size:** 50kg
  - **Payment terms:** Cash, other payment terms normalised
  - **Quality:** Hf+Zr 99.8% min; Zr 1%
  - **Form:** Uniform lots of 5kg max cut ingot, plate, sheet or bar
  - **Publication:** Fortnightly. Friday between 2pm and 3pm London time
  - **Notes:** Hafnium is classed as a ‘dual use’ metal under the Non-proliferation of Nuclear Weapons Treaty and may require end-user statements and import/export licences
Indium

**EUROPE**

**Assessment:** Indium 99.99% Rotterdam $/kg

**Basis:** Rotterdam

**Unit:** USD/kg

**Min lot size:** 100kg

**Payment terms:** Cash, other payment terms normalised

**Quality:** In: 99.99%, no other elements specified 3.5 kg; also 10 kg ingots

**Form:** Ingots, usually between 0.5kg and 3.5 kg

**Packaging:** Original producer wooden cases

**Delivery time:** Prompt release

**Publication:** Twice-weekly. Wednesday and Friday between 2pm and 3pm London time

**Assessment:** Indium 99.99% ex-works China CNY/kg

**Basis:** Ex-works China

**Unit:** CNY per kg

**Min lot size:** 1kg

**Payment terms:** Cash on spot

**Quality:** In: 99.995% min, Cu: 0.0005% max, Pb: 0.0005% max, Zn: 0.0005% max, Cd: 0.0005% max, Fe: 0.0005% max, Ti: 0.0005% max, Sn: 0.0010% max, As: 0.0005% max, Al: 0.0005% max

**Form:** Ingot of 500g

**Publication:** Weekly. Wednesday between 2pm and 3pm London time

Magnesium

**EUROPE**

**Assessment:** Magnesium 99.9% Rotterdam $/tonne

**Basis:** Rotterdam

**Unit:** USD/tonne

**Min lot size:** 20 tonnes (+/- 2%)

**Payment terms:** Cash, other payment terms normalised

**Quality:** Mg 99.9% min, Fe 0.04% max, Si 0.02% max, Ni 0.002% max, Cu 0.01% max, Al 0.02% max, Mo 0.03% max, Cl 0.05% max, others 0.1% max

**Form:** Ingot

**Publication:** Twice-weekly. Wednesday and Friday between 2pm and 3pm London time

**Assessment:** Magnesium 99% ex-works China RMB/tonne

**Basis:** Ex-works China

**Unit:** CNY/Tonne

**Min lot size:** 20 tonnes (+/- 2%)

**Payment terms:** Cash on spot

**Quality:** Mg 99.9% min

**Form:** Ingot

**Publication:** Weekly. Friday between 2pm and 3pm London time

**Assessment:** Magnesium 99.8% Fob China main ports $/tonne

**Basis:** Fob China main ports

**Unit:** USD/tonne

**Min lot size:** 10 tonnes (+/- 2%)

**Payment terms:** LC or TT

**Quality:** Mg 99.8% min

**Form:** Ingot

**Publication:** Weekly. Friday between 2pm and 3pm London time

Manganese

**EUROPE**

**Assessment:** Manganese 99.7% electrolytic manganese flake $/tonne Rotterdam

**Basis:** Rotterdam

**Unit:** USD/tonne

**Min lot size:** 25 tonnes (+/- 2%)

**Payment terms:** Cash, other payment terms normalised

**Quality:** Mn: 99.7% S: 500 ppm max P: 50 ppm max C: 400 ppm max Fe+Se+Si: 0.205% max

**Form:** Flake

**Publication:** Twice-weekly. Wednesday and Friday by 3pm London time

**Packaging:** Big bags or steel drums

**Delivery time:** Prompt, within ten calendar days
United States

Assessment: Manganese 99.7% electrolytic cents per pound, ex-warehouse, US
Type: Assessed range
Basis: Ex-warehouse, US
Unit: US cents per pound
Min lot size: 10 tonnes
Payment terms: Cash, other payment terms normalised
Quality: Min 99.7% manganese
Form: Flake
Packaging: Bulk
Publication: Weekly, every Thursday

Global

Assessment: Mercury 99.99% Hg global locations $/flask
Quality: Hg: 99.99%, no other elements specified
Quantity: 50 flasks with zero tolerance
Location: Global
Timing: Within one calendar month
Unit: USD per flask
Form: Free-flowing liquid
Packaging: 34.5kg UN-approved steel flasks
Payment terms: Cash, other payment terms normalised
Publication: Fortnightly. Friday 2-3pm London time

Europe

Assessment: Rhenium APR Catalytic grade Rotterdam duty unpaid $/kg
Quality: Ammonium perrhenate, Re 68.5 - 69.8% min.
Quantity: 20 kg (+/-2%)
Basis: Rotterdam, duty unpaid
Unit: USD/kg
Form: White, free flowing powder/crystals
Packaging: Uniform IMDG-approved containers, individually sealed and numbered
Delivery time: Within one calendar month
Payment terms: Cash, other terms normalised
Publication: Fortnightly. Friday 2-3pm London time

China

Assessment: Selenium min 99.9% Se China RMB/kg
Basis: China
Unit: CNY/kg
Min lot size: 100 kg
Payment terms: Cash, other payment terms normalised
Quality: Se: 99.9% min, no other elements specified
Form: Powder of minus 200 mesh or granules size 1-5 mm
Packaging: In uniform IMDG approved containers, individually sealed and numbered
Delivery time: Within one calendar month
Publication: Weekly. Friday by 3pm London time

Assessment: Rhenium metal pellets min 99.9% Rotterdam duty unpaid $/lb
Basis: Rotterdam, duty unpaid
Unit: USD/lb
Min lot size: 10 kg (+/-2%)
Payment terms: Cash, other payment terms normalised
Quality: Rhenium pellets, Re 99.9% min.
Form: White, free flowing powder/crystals
Publication: Fortnightly. Friday by 3pm London time
Packaging: In uniform IMDG approved containers, individually sealed and numbered
Delivery time: Within one calendar month

Assessment: Selenium min 99.5 Se Rotterdam $/lb
Basis: Rotterdam
Unit: USD/lb
Min lot size: 250 kg (+/-2%)
Payment terms: Cash, other payment terms normalised
Quality: Se: 99.5% min, no other elements specified
Form: Powder of minus 200 mesh or granules sizing 1-5 mm
Packaging: Original producers’ packaging, normally 25kg net
Delivery time: Prompt release
Payment terms: Cash, other payment terms normalised
Publication: Twice-weekly. Wednesday and Friday between 2pm and 3pm London time
Non-ferrous Prices

Selenium dioxide min 98% China
CNY/kg

Assessment:
Basis: China
Unit: CNY/kg
Min lot size: 100 kg
Payment terms: Cash, other payment terms normalised
Quality: Selenium dioxide: 98% min, no other elements specified
Form: Powder
Publication: Weekly. Friday by 3pm London time

Silicon

EUROPE
Assessment:
Silicon grade 4-4-1, min 99% Si
Rotterdam €/tonne
Basis: Rotterdam
Unit: EUR/tonne
Min lot size: 25 tonnes (+/- 2%)
Payment terms: Cash, other payment terms normalised
Quality: Si 99% min, Fe 0.4% max, Al 0.4% max, Ca 0.1% max
Form: 10-100mm lumps 90% min
Packaging: 1 tonne big bag
Publication: Weekly. Friday between 2pm and 3pm London time

Assessment:
Silicon grade 5-5-3, min 98.5% Si
Rotterdam €/tonne
Basis: Rotterdam
Unit: EUR/Tonne
Min lot size: 25 tonnes (+/- 2%)
Payment terms: Cash, other payment terms normalised
Delivery time: Prompt
Quality: Silicon 98.50%, iron 0.50% max, aluminium 0.50% max, calcium 0.30% max
Form: Lump, between 10 mm and 100 mm
Packaging: 1 tonne big bag
Publication: Once a week. Friday between 2pm and 3pm London time

CHINA
Assessment:
Silicon export China min 98.5% Si Fob China main ports $/tonne
Basis: FOB China main ports
Unit: USD/tonne
Min lot size: 20 tonnes
Payment terms: TT
Quality: Si: 98.5% Min, Fe: 0.5% Max, Al: 0.5% Max, Ca: 0.3% Max
Form: Lump
Publication: Weekly. Friday between 2pm and 3pm London time

UNITED STATES
Assessment:
Silicon metal, US
Quality:
Si: 98.50%, Fe: 0.50%, Al: 0.50%, Ca: 0.30%
Location: Delivered US
Unit: US cents per lb
Quantity: 20 tons
Publication: Monthly

Tellurium

EUROPE
Assessment:
Tellurium, min 99.9-99.99%
Rotterdam $/kg
Basis: Rotterdam
Unit: USD/kg
Min lot size: 100 kg (+/- 2%)
Payment terms: Cash, other payment terms normalised
Quality: Te: 99.9-99.99%, no other elements specified
Form: Ingot, sticks or powder
Packaging: Original producer packaging
Delivery time: Prompt
Publication: Twice-weekly. Wednesday and Friday between 2pm and 3pm London time

Assessment:
Tellurium min 99.99% China
CNY/kg
Basis: China
Unit: CNY/kg
Min lot size: 500kg
Payment terms: Cash, other payment terms normalised
Quality: Te 99.99% min, no other elements specified
Form: Ingot, sticks or powder
Frequency: Weekly. Friday 2-3pm London time
Battery raw materials

Cobalt sulfate

CHINA
Assessment: China cobalt sulfate, Co 20.5% min, ex-works
Unit: CNY/tonne
Quality/shape: crystal; feed from cobalt ores & concentrates, cobalt intermediates, such as crude cobalt hydroxide (materials produced from cobalt scrap are excluded)
Chemistry: Co: 20.5% min, Ni: 0.001% max, Cu: 0.001% max, Fe: 0.001% max, Zn: 0.001% max
Minimum Lot size: one tonne
Delivery window: within 30 days
Payment terms: On bank acceptance (other payments normalized)
Publication: twice a week on Wednesday and Friday, between 2pm and 3pm London time

Cobalt hydroxide

CHINA
Assessment: Cobalt hydroxide payable indicator, min 30% Co, cif China, % payable of Fastmarkets’ standard-grade cobalt price (low-end)
Unit: % payable of Fastmarkets’ standard-grade cobalt price (low-end)
Basis: cif China (other terms normalized)
Delivery window: 45 days
Base spec: min 30% cobalt content
Minimum lot size: 50 tonnes (cobalt content)
Payment terms: Letter of credit
Payment window: current pricing month (ie, “M”) 
Publication: 3pm London time, 15th and last working days of the month. Where the 15th falls on a weekend or a public holiday in England and Wales, the assessment will be published on the closest working day preceding that date.

Lithium

CHINA
Assessment: Battery grade lithium carbonate min 99.5% Li2CO3, ex-works China
Type: Assessment and Index (to run concurrently from August 2018)
Basis: China ex-works, VAT included
Currency: CNY
Unit: Tonne
Delivery window: 30 days
Min lot size: 5 tonnes
Quality: Min 99.5% Li2CO3 (delivery of Min 99.2% Li2CO3 also accepted, qualified for use in battery applications)
Form: Powder
Publication: Weekly. Thursday by 4pm London
Notes: It is intended that the new index will run in parallel with the existing assessment until at least January 2019. Metal Bulletin intends to review the continued utility of the assessment and its publication, in consultation with the lithium market, and will notify the market of its decision in October 2018.
**Assessment:** Lithium hydroxide monohydrate min 56.5% LiOH.H2O battery grade spot price CNY per tonne, ex works China  
**Basis:** China ex-works, VAT included  
**Unit:** CNY /tonne  
**Min lot size:** 5 tonnes  
**Quality:** Min 56.5% LiOH.H2O (qualified for use in battery applications)  
**Form:** Powder  
**Publication:** Weekly. Thursday by 4pm London

**Assessment:** Lithium carbonate min 99.5% Li2CO3 battery grade spot price US$ per kg CIF China, Japan & South Korea  
**Type:** Assessed range  
**Basis:** CIF main Chinese Japanese & South Korean ports (other ports normalized)  
**Unit:** USD/kg  
**Min lot size:** 5 tonnes  
**Quality:** Min 99.2-99.5% Li2CO3 (delivery of Min 99.2% Li2CO3 also accepted, qualified for use in battery applications)  
**Form:** Powder  
**Publication:** Weekly. Thursday by 4pm London

**Assessment:** Lithium hydroxide monohydrate min 56.5% LiOH.H2O battery grade spot price CIF China, Japan & South Korea  
**Basis:** CIF main Chinese Japanese & South Korean ports (other ports normalized)  
**Unit:** CNY/Tonne  
**Min lot size:** 5 tonnes  
**Quality:** Min 56.5% LiOH.H2O (qualified for use in battery applications)  
**Form:** Powder  
**Publication:** Weekly. Thursday by 4pm London

**Assessment:** Graphite spherical 99.95% C, 15 microns uncoated  
**Basis:** FOB China  
**Unit:** USD/tonne  
**Min lot size:** 20 tonnes  
**Quality:** 99.95% C, 15 microns, uncoated  
**Publication:** Weekly. Thursday by 4pm London

**Assessment:** Graphite spherical 99.95% C, 15 microns uncoated  
**Basis:** FOB China  
**Unit:** USD/tonne  
**Min lot size:** 20 tonnes  
**Quality:** 99.95% C, 15 microns, uncoated  
**Publication:** Weekly. Thursday by 4pm London

**Assessment:** Graphite flake 94-97% C, -100 Mesh, FCL, FOB Qingdao, China  
**Basis:** FOB China  
**Unit:** USD/tonne  
**Min lot size:** 20 tonnes  
**Quality:** 94-97% C, -100 Mesh  
**Publication:** Weekly. Thursday by 4pm London

**Assessment:** China nickel sulfate, ex-works  
**Grade:** Nickel content min 21%, max: 22.5%; cobalt 10ppm max  
**Unit:** CNY/tonne  
**Min Lot size:** 1 tonne  
**Payment terms:** Bank acceptance (other payments normalized)  
**Publication:** Weekly. Tuesdays by 4pm London time
**Non-ferrous Prices**

**Scrap**

**Copper scrap**

**CHINA**

- **Assessment:** No. 2 copper (Birch/Cliff) imported into China
- **Basis:** CIF in China ports (Shanghai, Guangdong, Zhejiang, Tianjin and Shandong)
- **Grade:** 94-96% copper content, US or European origin; discount to LME or Comex
- **Unit:** US cents/lb
- **Min lot size:** 25 tonnes
- **Payment:** Cash against documents, letter of credit, telegraphic transfer; other terms normalised
- **Delivery window:** Within 5 weeks
- **Publication:** Monthly. Last Monday of each month 3-4pm London time

**Aluminium scrap**

**EUROPE**

- **Assessment:** Aluminium scrap baled old rolled UK
- **Basis:** Delivered consumer works, UK
- **Grade:** Wrought scrap of alloyed and unalloyed aluminium. Maximum 2% calcareous and other non-metallic substances
- **Unit:** GBP/tonne
- **Min lot size:** 5 tonnes
- **Payment terms:** Net monthly account
- **Delivery window:** Within 4 weeks
- **Publication:** Weekly. Wednesday 3-4pm London time

- **Assessment:** Aluminium scrap clean HE9 extrusions UK
- **Basis:** Delivered consumer works, UK
- **Grade:** Clean HE9 extrusion scrap. Cu 0.1% max, Zn 0.1% max, free from deleterious materials, oil, grease, non-metallic coatings max 1%
- **Unit:** GBP/tonne
- **Min lot size:** 5 tonnes
- **Payment terms:** Net monthly account
- **Delivery window:** Within 4 weeks
- **Publication:** Weekly. Wednesday 3-4pm London time

- **Assessment:** Aluminium scrap commercial cast wheels UK
- **Basis:** Cast aluminium wheels
- **Grade:** New, uncoated, mixed alloys, pure sheet scrap. May contain proportion of one or more aluminium alloys, none of which shall contain more than 0.1% Cu and 0.1% each of Pb, Zn, Sn, antimony, bismuth. Mg 0.5% max. No 2000 or 7000 series metal
- **Unit:** Tonne
- **Min lot size:** 5 tonnes
- **Payment terms:** Net monthly account
- **Delivery window:** Within 4 weeks
- **Publication:** Weekly. Wednesday 3-4pm London time

- **Assessment:** Aluminium scrap pure cuttings UK
- **Basis:** Delivered consumer works, UK
- **Grade:** New, uncoated, mixed alloys, pure sheet scrap. May contain proportion of one or more aluminium alloys, none of which shall contain more than 0.1% Cu and 0.1% each of Pb, Zn, Sn, antimony, bismuth. Mg 0.5% max. No 2000 or 7000 series metal
- **Unit:** GBP/tonne
- **Min lot size:** 5 tonnes
- **Payment terms:** Net monthly account
- **Delivery window:** Within 4 weeks
- **Publication:** Weekly. Wednesday 3-4pm London time

- **Assessment:** Aluminium scrap clean HE9 extrusions UK
- **Basis:** Delivered consumer works, UK
- **Grade:** Clean HE9 extrusion scrap. Cu 0.1% max, Zn 0.1% max, free from deleterious materials, oil, grease, non-metallic coatings max 1%
- **Unit:** GBP/tonne
- **Min lot size:** 5 tonnes
- **Payment terms:** Net monthly account
- **Delivery window:** Within 4 weeks
- **Publication:** Weekly. Wednesday 3-4pm London time

- **Assessment:** Aluminium scrap commercial cast wheels UK
- **Basis:** Cast aluminium wheels
- **Grade:** New, uncoated, mixed alloys, pure sheet scrap. May contain proportion of one or more aluminium alloys, none of which shall contain more than 0.1% Cu and 0.1% each of Pb, Zn, Sn, antimony, bismuth. Mg 0.5% max. No 2000 or 7000 series metal
- **Unit:** Tonne
- **Min lot size:** 5 tonnes
- **Payment terms:** Net monthly account
- **Delivery window:** Within 4 weeks
- **Publication:** Weekly. Wednesday 3-4pm London time

- **Assessment:** Aluminium scrap pure cuttings UK
- **Basis:** Delivered consumer works, UK
- **Grade:** New, uncoated, mixed alloys, pure sheet scrap. May contain proportion of one or more aluminium alloys, none of which shall contain more than 0.1% Cu and 0.1% each of Pb, Zn, Sn, antimony, bismuth. Mg 0.5% max. No 2000 or 7000 series metal
- **Unit:** GBP/tonne
- **Min lot size:** 5 tonnes
- **Payment terms:** Net monthly account
- **Delivery window:** Within 4 weeks
- **Publication:** Weekly. Wednesday 3-4pm London time
<table>
<thead>
<tr>
<th>Assessment:</th>
<th><strong>Aluminium scrap commercial turnings UK</strong></th>
<th>Assessment:</th>
<th><strong>Aluminium scrap group 1 pure 99% &amp; litho UK</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Basis:</td>
<td>Delivered consumer works, UK</td>
<td>Basis:</td>
<td>Delivered consumer works, UK</td>
</tr>
<tr>
<td>Grade:</td>
<td>Clean, uncorroded aluminium borings, millings and turnings of two or more specified alloys. Zn 2% max, Fe fines 3% max, oil/moisture/free iron 10% max</td>
<td>Grade:</td>
<td>New, uncoated, unalloyed aluminium sheet, wire and cable scrap, not burnt or corroded, baled. Al content minimum 99.9% (oil, grease, non-metallic coatings max 1%)</td>
</tr>
<tr>
<td>Unit:</td>
<td>GBP/tonne</td>
<td>Currency:</td>
<td>GBP</td>
</tr>
<tr>
<td>Min lot size:</td>
<td>5 tonnes</td>
<td>Unit:</td>
<td>Tonne</td>
</tr>
<tr>
<td>Payment terms:</td>
<td>Net monthly account</td>
<td>Min lot size:</td>
<td>5 tonnes</td>
</tr>
<tr>
<td>Delivery window:</td>
<td>Within 4 weeks</td>
<td>Payment terms:</td>
<td>Net monthly account</td>
</tr>
<tr>
<td>Publication:</td>
<td>Weekly. Wednesday 3-4pm London time</td>
<td>Delivery window:</td>
<td>Within 4 weeks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Publication:</td>
<td>Weekly. Wednesday 3-4pm London time</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assessment:</th>
<th><strong>Aluminium Scrap Floated Frag delivered consumer works Europe</strong></th>
<th>Assessment:</th>
<th><strong>Aluminium scrap loose old rolled cuttings UK</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Basis:</td>
<td>Delivered consumer works, Europe</td>
<td>Type:</td>
<td>Assessed range</td>
</tr>
<tr>
<td>Grade:</td>
<td>Twitch floated fragmentiser aluminium scrap</td>
<td>Basis:</td>
<td>Delivered consumer works, UK</td>
</tr>
<tr>
<td></td>
<td>(from automobile shredders). Free Zn 1% max, free Mg 1% max, analytical Fe 1% max. Non-metallics 2% max (of which rubber &amp; plastics 1% max)</td>
<td>Grade:</td>
<td>Wrought scrap of alloyed and unalloyed aluminium. Maximum 2% calcareous and other non-metallic substances</td>
</tr>
<tr>
<td>Unit:</td>
<td>EUR/tonne</td>
<td>Unit:</td>
<td>GBP/tonne</td>
</tr>
<tr>
<td>Min lot size:</td>
<td>25 tonnes</td>
<td>Min lot size:</td>
<td>5 tonnes</td>
</tr>
<tr>
<td>Payment terms:</td>
<td>30 days, other payment terms normalised</td>
<td>Payment terms:</td>
<td>Net monthly account</td>
</tr>
<tr>
<td>Delivery window:</td>
<td>Within 4 weeks</td>
<td>Delivery window:</td>
<td>Within 4 weeks</td>
</tr>
<tr>
<td>Publication:</td>
<td>Weekly. Friday 3-4pm London time</td>
<td>Publication:</td>
<td>Weekly. Wednesday 3-4pm London time</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assessment:</th>
<th><strong>Aluminium scrap group 7 turnings UK</strong></th>
<th>Assessment:</th>
<th><strong>Aluminium scrap mixed turnings Europe</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Basis:</td>
<td>Delivered consumer works, UK</td>
<td>Basis:</td>
<td>Delivered consumer works, Europe</td>
</tr>
<tr>
<td>Grade:</td>
<td>Clean, uncorroded aluminium borings, millings and turnings of two or more specified alloys. Zn 7.5% max, Fe fines 3% max, oil/moisture/free iron 10% max</td>
<td>Grade:</td>
<td>Clean, uncorroded aluminium borings, millings and turnings of two or more specified alloys. Zn 2% max, Fines 3% max, oil/moisture/free iron 10% max</td>
</tr>
<tr>
<td>Currency:</td>
<td>GBP</td>
<td>Unit:</td>
<td>EUR/tonne</td>
</tr>
<tr>
<td>Unit:</td>
<td>Tonne</td>
<td>Min lot size:</td>
<td>25 tonnes</td>
</tr>
<tr>
<td>Min lot size:</td>
<td>5 tonnes</td>
<td>Payment terms:</td>
<td>30 days, other payment terms normalised</td>
</tr>
<tr>
<td>Payment terms:</td>
<td>Net monthly account</td>
<td>Delivery window:</td>
<td>Within 4 weeks</td>
</tr>
<tr>
<td>Delivery window:</td>
<td>Within 4 weeks</td>
<td>Publication:</td>
<td>Weekly. Wednesday 3-4pm London time</td>
</tr>
<tr>
<td>Publication:</td>
<td>Weekly. Wednesday 3-4pm London time</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Non-ferrous Prices

Assessment: **Aluminium scrap tense mixed aluminium castings (Cast) Europe**

Basis: Delivered consumer works, Europe

Grade: Whole or broken aluminium castings of all kinds. Oil and grease not to total more than 2%

Unit: EUR/tonne

Min lot size: 25 tonnes

Payment terms: 30 days, other payment terms normalised

Delivery window: Within 4 weeks

Publication: Weekly. Friday 3-4pm London time

---

Assessment: **Aluminium pressure diecasting ingot DIN226/A380 DDP Europe**

Basis: Delivered consumer works in Europe, most consumers in Northern Europe, in particular Germany

Grade: Cu 2-4%, Mg 0.15-0.55%, Si 8-11%, Fe 0.6-1.1%, Mn 0.55% max, Ni 0.55% max, Zn 1.2% max, Cr 0.15% max, others each 0.05% max/total 0.25% max

Unit: EUR/tonne

Min lot size: 25 tonnes

Payment terms: 30 days, other payment terms normalised

Delivery window: Within 2 months

Form: Ingot

Publication: Weekly. Friday 3-4pm London time

---

Secondary aluminium scrap

**EUROPE**

Assessment: **Aluminium LM24 pressure diecasting ingot UK**

Basis: Delivered consumer works, UK

Grade: Cu 3-4%, Mg 0.1% max, Si 7.5-9.5%, Fe 2% max, Mn 0.5% max, Ni 0.5% max, Zn 3% max.

Unit: GBP/tonne

Min lot size: 5 tonnes

Payment terms: Net monthly account

Delivery window: Within 2 months

Form: Ingot

Publication: Weekly. Wednesday 3-4pm London time

Assessment: **Aluminium LM6/LM25 gravity diecasting ingot UK**

Basis: Delivered consumer works, UK

Grade: LM6 - Cu 0.1%, Mg 0.1% max, Si 10-13%, Fe 0.06% max, Mn 0.5% max, Ni 0.1% max, Zn 0.1% max, Pb 0.1% max, Ti 0.05% max, Zr 0.2% max.

LM25 - Cu 0.2%, Mg 0.2-0.4%, Si 6.5-7.5% max, Fe 0.2% max, Mn 0.1% max, Zn 0.1% max

Unit: GBP/tonne

Min lot size: 5 tonnes

Payment terms: Net monthly account

Delivery window: Within 2 months

Form: Ingot

Publication: Weekly. Wednesday 3-4pm London time

---

Titanium scrap

**EUROPE**

Assessment: **Titanium scrap turnings unprocessed (90/6/4) (0.5% Sn) cif major European ports $/lb**

Basis: Cif major European ports

Unit: USD/per lb Ti

Min lot size: 18-22 tonne lots

Payment terms: Cash; other payment terms normalised

Quality: Ti: 90% Al: 6%V: 4% Sn: 0.5%

Form: Turnings

Publication: Weekly. Wednesday 3-4pm London time

Assessment: **Titanium scrap turnings unprocessed (90/6/4) (0.5%-%2% Sn) cif major European ports $/lb**

Basis: Cif major European ports

Unit: USD/per lb Ti

Min lot size: 18-22 tonne lots

Payment terms: Cash; other payment terms normalised

Quality: Titanium: 90% Al: 6%V: 4% Sn: 0.5-2%

Form: Turnings

Publication: Weekly. Wednesday 3-4pm London time

---

www.fastmarkets.com
Non-ferrous Prices

Contacts

Alex Harrison
Editorial Director
aharrison@fastmarkets.com

Prahishini Kunapalan
Risk & Compliance Manager
prahashini.kunapalan@fastmarkets.com

DISCLAIMER - IMPORTANT PLEASE READ CAREFULLY

This Disclaimer is in addition to our Terms and Conditions as available on our website and shall not supersede or otherwise affect these Terms and Conditions. Prices and other information contained in this publication have been obtained by us from various sources believed to be reliable. This information has not been independently verified by us. Those prices and price indices that are evaluated or calculated by us represent an approximate evaluation of current levels based upon dealings (if any) that may have been disclosed prior to publication to us. Such prices are collated through regular contact with producers, traders, dealers, brokers and purchasers although not all market segments may be contacted prior to the evaluation, calculation, or publication of any specific price or index. Actual transaction prices will reflect quantities, grades and qualities, credit terms, and many other parameters. The prices are in no sense comparable to the quoted prices of commodities in which a formal futures market exists.

Evaluations or calculations of prices and price indices by us are based upon certain market assumptions and evaluation methodologies, and may not conform to prices or information available from third parties. There may be errors or defects in such assumptions or methodologies that cause resultant evaluations to be inappropriate for use.

Your use or reliance on any prices or other information published by us is at your sole risk. Neither we nor any of our providers of information make any representations or warranties, express or implied as to the accuracy, completeness or reliability of any advice, opinion, statement or other information forming any part of the published information or its fitness or suitability for a particular purpose or use. Neither we, nor any of our officers, employees or representatives shall be liable to any person for any losses or damages incurred, suffered or arising as a result of use or reliance on the prices or other information contained in this publication, howsoever arising, including but not limited to any direct, indirect, consequential, punitive, incidental, special or similar damage, losses or expenses.

We are not an investment adviser, a financial adviser or a securities broker. The information published has been prepared solely for informational and educational purposes and is not intended for trading purposes or to address your particular requirements. The information provided is not an offer to buy or sell or a solicitation of an offer to buy or sell any security, commodity, financial product, instrument or other investment or to participate in any particular trading strategy. Such information is intended to be available for your general information and is not intended to be relied upon by users in making (or refraining from making) any specific investment or other decisions.

Your investment actions should be solely based upon your own decisions and research and appropriate independent advice should be obtained from a suitably qualified independent adviser before any such decision is made.