

# North American Non-ferrous Metals



Methodology and price  
specifications – November 2019

## 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 AMM is the leading independent supplier of market intelligence, pricing, assessments, analysis and commentary to the North American metals industries. Fastmarkets AMM publishes widely used reference prices for non-ferrous metals, steel and scrap markets.

Fastmarkets AMM is completely independent and has no vested commercial interest in any of the markets it prices.

Fastmarkets AMM's reporters are required to follow a Code of Conduct.

Fastmarkets AMM reporters are required to follow robust pricing procedures during their market reporting and pricing activities.

All work by Fastmarkets AMM reporters is peer reviewed and approved prior publication by senior reporters.

All prices and assessments are based on regular contact with a wide variety of market participants, a group which is reviewed periodically by senior editors to ensure a balance of participants, buyers, sellers and others legitimately and actively involved in the marketplace.

Fastmarkets AMM treats all communications of price, assessments, contract details and all other information as confidential and details are never shared with third parties.

If you have any questions, please contact the pricing administrator, [pricing@fastmarkets.com](mailto:pricing@fastmarkets.com).

## Price discovery and methodology

The aim of this section is to provide a clear overview of the pricing methodology and price specifications of all the non-ferrous metals markets that Fastmarkets AMM assesses.

Fastmarkets AMM produces independent, fair and representative price assessments on the US non-ferrous metals market on a periodic basis, most often daily, weekly and monthly. It reserves the right, based on market variations or other factors, to change the frequency of any price, assessment or index published after notifying the market of its intent.

Fastmarkets AMM reporters are charged with speaking to a broad sample of market participants closely or specifically involved in the buying and selling of the metal of interest. Representatives of this market, may include both sides of known contract(s), may include producers, consumers, traders and brokers.

The reporter's goal is to discover as many details as possible of all market activity including concluded business, made offers, and received bids or prices quotes over a certain defined period – generally the period since the conclusion of the previous quotation.

Pricing data is usually collected via phone conversations and email exchanges with market participants; all the relevant pricing details are entered into the Fastmarkets AMM pricing database and available for peer review.

Fastmarkets AMM follows industry convention for all price points, assessments and indexes. Reporters ensure that the information they receive matches these conventions.

Occasionally, Fastmarkets AMM might receive price data for material where a transaction, contract, reported bid, offer or quote may differ in some element from convention – for instance, non-standard material quality, delivery terms or delivery location, cargo size or payment terms. In such cases Fastmarkets AMM normalizes the data.

Fastmarkets AMM does not use volume/quantity/tonnage weighted averages and will not use information that is suspect or from an anonymous sources who refuse to detail and verify their involvement in the industry.

At the end of a pricing session, Fastmarkets AMM reporters will collate information received and review it before setting a price or assessment. In some cases, it will set a price range, to reflect the spread of prices at which business has been transacted, offered or bid. In other cases it will specify as single number, midpoint, or index which is compiled from single numbers and/or ranges.

While Fastmarkets AMM does not use volume/quantity/tonnage weighted averages, it does use weighting in that greater importance is given to actual and/or concluded transaction data. Depending on market liquidity, it is not always possible to obtain actual transaction data; in such cases, Fastmarkets AMM reserves the right to base its prices on also on bids, offers and assessments and the context of related benchmarks and/or analogous transactions, bids, offers and assessments to inform any or no directional change in pricing.

When required, particularly in instances where a market moves dramatically, Fastmarkets AMM seeks to confirm all information on deals either by requesting a signed copy of the contract; we also accept other materials as evidence of claimed deals and reserve the right to check deal information with the counterparty, middleman, trader or other knowledgeable participant.

Fastmarkets AMM uses its expert judgment and applies consistent procedures to exclude outlying numbers and discard prices that it believes may be questionable, unrepeatable or otherwise unrepresentative of current market conditions.

All price assessment inputs are gathered by one or more reporters who cover that/those specific market(s). Prices are reviewed and approved by a senior reporter or editor (all of whom have access to the first reporter's or reporters' documentation) prior to publication. In this way Fastmarkets AMM ensures consistency in the application of the methodology and the exercising of judgement.

In the event that no relevant data has been reported in the assessed period, for example as a result of holidays, Fastmarkets AMM reserves the right to roll the price over.

Unless stated otherwise, the usual data collection deadline for most Fastmarkets AMM prices is 4pm New York time on the day the price is scheduled to be updated, with prices to be published by 5pm.

## Methodology and price specification review process

Fastmarkets AMM continually develops and revises its methodologies in consultation with industry participants. If there are changes in the industry, Fastmarkets AMM will revise or adopt product specifications, trading terms, conditions or other factors that reflect and are representative of typical working practices in the industry. All methodologies, changes, revisions, adaptations or other are approved by Fastmarkets AMM' Editor and senior management.

Please note that changes to the methodology and/or details affecting the price are implemented following a formal consultation process which starts with Fastmarkets AMM posting on its website and/or in its daily issue an advance pricing notice providing clear details and timeframe for the change proposed. Fastmarkets AMM concurrently reaches out to known participants in the specific market for feedback, comment and suggestions. The objective of the consultation process is to give market participants sufficient time and opportunity to provide feedback. Fastmarkets AMM will consider all views about the change proposed, but reserves the right to make changes it deems necessary.

## Calculation of monthly average prices

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

Fastmarkets calculates and publishes monthly averages based on these independent, proprietary assessments and indices in two distinct ways: simple averages and rolling averages.

### Simple average

Fastmarkets' simple monthly averages, traditionally published by Fastmarkets MB, are calculated by dividing the sum of the price quotations by the number of quotations published during the calendar month. For assessments, Fastmarkets derives both the monthly average high price and the Fastmarkets monthly average low price using this method. For indices, a single monthly average price point is calculated.

For example, there were five weekly price quotations for Chrome Ore South Africa UG2 concentrates index basis 42% cif China, \$ per tonne during the month of June 2018. Prices were published each Friday from June 1, 2018, with the assessments reading \$206 per tonne, \$208 per tonne, \$210 per tonne, \$211 per tonne and \$208 per tonne during the period. The simple monthly average is calculated by taking the sum of the five assessments and dividing that by the number of total assessments over the period - in this case, five. The simple monthly average for June 2018 was \$208.60 per tonne.

Most prices produced outside of the Americas are typically calculated on a simple-average basis.

### Rolling average

Fastmarkets' rolling monthly averages, traditionally published by Fastmarkets AMM, are calculated by dividing the sum of the daily price quotations by the number of the quotations published during the calendar month. In a rolling average scenario, prices are published on a daily basis, regardless of how frequently they are updated. Daily price quotations are rolled for working days until the following price change, excluding holidays and weekends. No pricing input is published on holidays or weekends.

For example, there were five weekly price quotations for Chrome Ore South Africa UG2 concentrates index basis 42% cif China, \$ per tonne during the month of June 2018, with the first price update made on Friday, June 1. According to Fastmarkets' calculation, the price assessment from Friday is rolled over and republished on the Monday, Tuesday, Wednesday and Thursday of the following week, with the newly updated price published each Friday. The rolling monthly average is then calculated by taking the sum of all daily published prices and dividing it by the 21 total inputs over the period. The rolling monthly average price for June 2018 is therefore \$208.71 per tonne.

Most prices produced from the Americas are typically calculated on a rolling-average basis.

## Base metals

# Aluminium

**Assessment:** **Aluminium P1020 Midwest duty-paid premium**  
**Quality:** London Metal Exchange specification P1020A or 99.7% minimum Al purity (silicon 0.10% max, iron 0.20% max, zinc 0.03%, gallium 0.04%, vanadium 0.03%)  
**Location:** Delivered consumer works Midwest  
**Unit:** US cents per pound  
**Quantity:** 20 tons  
**Publication:** Twice a week, every Tuesday and Thursday

**Calculated:** **Aluminium P1020 Midwest duty-paid all-in free-market price**  
**Quality:** London Metal Exchange specification P1020A or 99.7% minimum Al purity (silicon 0.10% max, iron 0.20% max, zinc 0.03%, gallium 0.04%, vanadium 0.03%)  
**Location:** Delivered consumer works Midwest  
**Unit:** US cents per pound  
**Formula:** London Metal Exchange cash aluminium PM bid price plus AMM Midwest aluminium premium  
**Quantity:** 20 tons  
**Publication:** Daily

**Assessment:** **Aluminium P1020 cif Baltimore ports premium**  
**Grade:** P1020A or 99.7% minimum aluminium purity (silicon 0.10% maximum, iron 0.20% maximum)  
**Location:** Shipped to ports in Baltimore, Maryland, premium on top of London Metal Exchange cash prices, net back to Baltimore  
**Unit:** US cents per lb  
**Quantity:** 100 tonnes  
**Form:** Ingot  
**Payment terms:** 30 days, other payment terms normalized  
**Publication:** Weekly

**Calculated:** **Aluminium P1020 cif all-in free-market price**  
**Grade:** LME specification P1020A or 99.7% minimum aluminium purity (silicon 0.10% maximum, iron 0.20% maximum, zinc 0.03% maximum, gallium 0.04% maximum, vanadium 0.03% maximum)  
**Location:** Delivered consumer works Midwest US, premium on top of LME cash prices, net back to Baltimore  
**Unit:** US cents per lb  
**Quantity:** 100 tonnes  
**Formula:** London Metal Exchange cash aluminium PM bid price plus American Metal Market's P1020 premium cif Baltimore, Maryland, ports  
**Delivery:** Within four weeks  
**Form:** Ingot  
**Payment terms:** 30 days, other payment terms normalized  
**Publication:** Daily

**Assessment:** **Aluminium P1020 in-warehouse 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  
**Unit:** USD per tonne  
**Quantity:** 25 tonnes  
**Form:** Ingot, T-bars, Sow  
**Payment terms:** Cash against documents (7 days after bill of lading date); other terms normalized Delivery window: Prompt Release  
**Publication:** Weekly. Tuesday between 3pm and 4pm London time

**Assessment:** **Aluminium 6063 extrusion billet upcharge**  
**Grade:** Extrusion billet ingot to meet Aluminium Assn specification AA6063 US. Aluminium 99.45%, silicon 0.20-0.60%, iron 0.35%, copper 0.10%, manganese 0.10%, magnesium 0.45-0.90%, chromium 0.10%, zinc 0.10%, titanium 0.10%  
**Location:** Delivered Midwest  
**Unit:** US cents per pound  
**Quantity:** 20 tons  
**Publication:** Every two weeks, Thursday

**Calculated:** **Aluminium alloy C355**  
**Quality:** Silicon 4.50-5.50%, iron 0.13%, copper 1.00-1.50%, manganese 0.05%, magnesium 0.50-0.60%, zinc 0.05%, titanium 0.20%, aluminium remainder  
**Location:** Delivered. Domestic producer estimated price.  
**Unit:** US dollars per pound  
**Formula:** Calculated. Formula: LME cash aluminium official price (ask) + Fastmarkets AMM Midwest aluminium premium (average) + Fastmarkets AMM alloy surcharge assessment.  
**Quantity:** 20 tons  
**Publication:** Daily

**Calculated:** **Aluminium alloy A356.2**  
**Quality:** Silicon 6.50-7.50%, iron 0.12%, copper 0.10%, manganese 0.05%, magnesium 0.30-0.45%, zinc 0.05%, titanium 0.20%, aluminium remainder  
**Location:** Delivered. Domestic producer estimated price.  
**Unit:** US dollars per pound  
**Formula:** LME cash aluminium official price (ask) + Fastmarkets AMM Midwest aluminium premium (average) + Fastmarkets AMM alloy surcharge assessment.  
**Quantity:** 20 tons  
**Publication:** Daily

**Calculated:** **Aluminium 6061 (extrusion hom)**  
**Quality:** Aluminium 99.45%, silicon 0.40-0.80%, iron 0.70%, copper 0.15-0.40%, manganese 0.15%, magnesium 0.80-1.20%, chromium 0.15-0.35%, zinc 0.25%, titanium 0.15%  
**Location:** Delivered. Domestic producer estimated price.  
**Unit:** US dollars per pound  
**Quantity:** 20 tons  
**Publication:** Monthly

**Assessment:** **Aluminium 6063 (extrusion hom)**  
**Unit:** US dollars per pound  
**Location:** Delivered  
**Quality:** Aluminium 99.45%, silicon 0.20-0.60%, iron 0.35%, copper 0.10%, manganese 0.10%, magnesium 0.45-0.90%, chromium 0.10%, zinc 0.10%, titanium 0.10%  
**Price Type:** Calculated  
**Quantity:** 20 tons  
**Publication:** Monthly

**Assessment:** **Aluminium alloy A380.1**  
**Quality:** Copper 3.00-4.00%, iron 1.00%, magnesium 0.10%, manganese 0.50%, nickel 0.50%, silicon 7.50-9.50%, tin 0.35%, zinc 2.90%, aluminium remainder. Form: Ingot  
**Location:** Delivered Midwest  
**Unit:** US cents per pound  
**Quantity:** Truckload/20 tons  
**Payment terms:** Net 30 days post delivery  
**Publication:** Twice a week, every Monday and Thursday

**Assessment:** **Aluminium alloy 319.1**  
**Quality:** Copper 3.00-4.00%, iron 0.80%, magnesium 0.10%, manganese 0.50%, nickel 0.35%, silicon 5.50-6.50%, titanium 0.25%, zinc 1.00%  
**Location:** Delivered Midwest  
**Unit:** US cents per pound  
**Quantity:** 20 tons  
**Publication:** Twice a week, every Monday and Thursday

**Assessment:** **Aluminium alloy 356.1**  
**Quality:** Copper 0.25%, iron 0.50%, magnesium 0.25-0.45%, manganese 0.50%, silicon 6.50-7.50%, titanium 0.25%, zinc 0.35%  
**Location:** Delivered Midwest  
**Unit:** US cents per pound  
**Quantity:** 20 tons  
**Publication:** Twice a week, every Monday and Thursday

**Calculated:** **Copper cathode**  
**Quality:** Grade 1 Electrolytic Copper Cathode as adopted by the American Society for Testing and Materials (B115-00)  
**Location:** Delivered Midwest  
**Unit:** US cents per pound  
**Formula:** Calculated. Formula: Comex spot close price plus AMM copper premium  
**Publication:** Daily

**Assessment:** **Aluminium alloy A360.1**  
**Quality:** Copper 0.60%, iron 1.00%, magnesium 0.45-0.60%, manganese 0.35%, nickel 0.50%, silicon 9.0-10.0%, tin 0.15%, zinc 0.40%  
**Location:** Delivered Midwest  
**Unit:** US cents per pound  
**Quantity:** 20 tons  
**Publication:** Twice a week, every Monday and Thursday

**Assessment:** **Copper rod premium**  
**Quality:** Purity of 99.95-99.99%  
**Gauge:** Thicknesses of 8 millimeters or 0.3125 inches  
**Location:** Delivered Midwest  
**Unit:** US cents per pound  
**Quantity:** 25,000 pounds  
**Publication:** Monthly, first Thursday

**Assessment:** **Aluminium alloy A413.1**  
**Quality:** Copper 1.00%, iron 1.00%, magnesium 0.10%, manganese 0.35%, nickel 0.50%, silicon 11.0-13.0%, tin 0.15%, zinc 0.40%  
**Location:** Delivered Midwest  
**Unit:** US cents per pound  
**Quantity:** 20 tons  
**Publication:** Twice a week, every Monday and Thursday

**Assessment:** **Lead 99.97% ingot premium**  
**Quality:** 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)  
**Location:** Delivered consumer works, Midwest  
**Unit:** US cents per pound  
**Quantity:** 20 tonnes  
**Delivery:** Within 5 weeks  
**Form:** Ingot  
**Payment terms:** 30 days, other payment terms normalised  
**Publication:** Weekly, Tuesday

## Lead

## Copper

**Assessment:** **Copper cathode premium**  
**Quality:** Delivered premium over cost of Grade 1 Electrolytic Copper Cathode as adopted by the American Society for Testing and Materials (B115-00)  
**Location:** Delivered Midwest  
**Unit:** US cents per pound  
**Quantity:** 25,000 lbs  
**Publication:** Weekly, Tuesday

**Assessment:** **Lead 99.99% ingot premium**  
**Quality:** Lead of 99.99% minimum purity conforming to LME specification BS EN 12659:1999, GB/T 469/2005 or ASTM B29-03 (2009)  
**Location:** Delivered consumer works, Midwest  
**Unit:** US cents per pound  
**Quantity:** 20 tonnes  
**Form:** Ingot  
**Delivery window:** Within 5 weeks  
**Payment terms:** 30 days, other payment terms normalised  
**Publication:** Weekly, Tuesday



**Calculated:** **Lead 99.97% price**  
**Quality:** Delivered premium over cost of lead of 99.97% purity conforming to BS EN 12659:1999, GB/T 469/2005 or ASTM B29-03 (2009)  
**Location:** Delivered consumer works, Midwest  
**Unit:** US cents per pound  
**Formula:** London Metal Exchange official cash AM bid lead price plus AMM lead premium  
**Form:** Ingot  
**Publication:** Daily

**Assessment:** **Lead 99.97% ingot warrants**  
**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)  
**Location:** In any LME-approved warehouse in the USA, premium on top of LME cash prices  
**Unit:** USD per tonne  
**Quantity:** 25 tonnes  
**Delivery:** Prompt release  
**Form:** Cathode  
**Payment terms:** Cash, other payment terms normalized  
**Publication:** Weekly. Tuesday between 3pm and 4pm London time

## Nickel

**Assessment:** **Nickel cathode premium**  
**Quality:** 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  
**Location:** Delivered consumer works US  
**Unit:** US cents per lb  
**Quantity:** 20 tonnes  
**Delivery window:** Within four weeks  
**Form:** 4x4 cut cathode  
**Payment terms:** 30 days, other payment terms normalized  
**Publication:** Every Tuesday between 3pm and 4pm London time

**Calculated:** **Nickel cathode**  
**Quality:** 99.8% minimum primary 4x4 nickel cut cathodes 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. Smaller cut cathode dimensions may be normalized.  
**Location:** Delivered consumer works US  
**Unit:** US cents per lb  
**Formula:** LME official cash AM bid price plus nickel 4x4 cathode delivered US premium  
**Quantity:** 20 tonnes  
**Delivery:** Within four weeks  
**Form:** 4x4 cut cathode  
**Payment terms:** 30 days, other payment terms normalized  
**Publication:** Daily

**Assessment:** **Nickel briquette premium**  
**Quality:** 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  
**Location:** Delivered consumer works US  
**Unit:** US cents per lb  
**Quantity:** 20 tonnes  
**Delivery:** Within four weeks  
**Form:** Briquette  
**Payment terms:** 30 days, other payment terms normalized  
**Publication:** Every Tuesday between 3pm and 4pm London time

**Calculated:** **Nickel briquette price**  
**Quality:** 99.8% minimum primary nickel  
 briquettes 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  
**Location:** Delivered consumer works US  
**Unit:** US cents per lb  
**Formula:** LME official cash AM bid price plus  
 nickel 4x4 cathode delivered US  
 premium  
**Quantity:** 20 tonnes  
**Delivery window:** Within four weeks  
**Form:** Briquette  
**Payment terms:** 30 days, other payment terms  
 normalized  
**Publication:** Daily

**Assessment:** **Tin ingot in-warehouse Baltimore premium**  
**Quality:** Minimum 99.85% tin purity  
 conforming to LME specification:  
 BS EN 610:1996, max 500ppm lead,  
 total impurities must not exceed  
 0.15%  
**Location:** In-warehouse Baltimore, premium  
 on top of LME cash prices  
**Unit:** US dollars per tonne  
**Quantity:** 20 tonnes  
**Form:** Ingot  
**Payment terms:** Cash against documents, other  
 payment terms normalized  
**Publication:** Weekly. Tuesday 3pm to 4pm  
 London time

## Tin

**Assessment:** **Tin grade A premium**  
**Quality:** Delivered premium over cost of tin  
 of 99.85% purity (min) conforming  
 to BS EN 610:1996  
**Location:** US Midwest  
**Unit:** US dollars per tonne  
**Quantity:** 20 tonnes  
**Publication:** Weekly, Tuesday

**Calculated:** **Tin grade A price**  
**Unit:** US dollars per tonne  
**Quality:** Tin of 99.85% purity (min)  
 conforming to BS EN 610:1996 (LME)  
**Formula:** London Metal Exchange official  
 cash AM bid tin price plus AMM tin  
 premium  
**Publication:** Daily

## Zinc

**Assessment:** **Zinc Special High Grade premium**  
**Quality:** Min 99.995% special high  
 grade zinc, conforming to LME  
 specifications: BS EN 1179:2003,  
 ISO 752:2004 - ZN-1 grade, ASTM  
 B6-12 - LME grade or GB/T 470-2008  
**Location:** Delivered consumer works, Midwest  
**Unit:** US cents per pound  
**Quantity:** 20 tonnes  
**Delivery:** Within 4 weeks  
**Form:** Ingot  
**Payment terms:** 30 days, other payment terms  
 normalised  
**Publication:** Weekly, Tuesday

**Assessment:** **Zinc SHG ingot warrants**  
**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  
**Location:** In any LME-approved warehouse in  
 the USA, premium on top of LME  
 cash prices  
**Unit:** USD per tonne  
**Quantity:** 25 tonnes  
**Delivery window:** Prompt release  
**Form:** Ingot  
**Payment terms:** Cash, other payment terms  
 normalized  
**Publication:** Weekly. Tuesday 3-4pm London

**Calculated:** **Zinc Special High Grade price**  
**Quality:** Zinc of 99.995% purity (min.) conforming to BS EN 1179: 2003  
**Location:** Delivered consumer works, Midwest  
**Unit:** US cents per pound  
**Formula:** London Metal Exchange official cash AM bid zinc price plus AMM zinc premium  
**Publication:** Daily

**Assessment:** **Zinc No3 and No7 die casting alloy premium**  
**Quality:** Aluminium 3.70-4.30%, magnesium 0.005-0.06%, copper max. 0.10%, iron max. 0.05%, lead max. 0.005%, cadmium max. 0.004%, tin max. 0.002%, zinc remainder  
**Location:** Delivered Midwest  
**Unit:** US cents per pound  
**Quantity:** 20 tons  
**Publication:** Every two weeks, Thursday

**Calculated:** **Zinc No3 and No7 die casting alloy price**  
**Quality:** Aluminium 3.70-4.30%, magnesium 0.005-0.06%, copper max. 0.10% , iron max. 0.05%, lead max. 0.005%, cadmium max. 0.004%, tin max. 0.002%, zinc remainder  
**Location:** Delivered Midwest  
**Unit:** US cents per pound  
**Formula:** London Metal Exchange official cash AM bid zinc price plus AMM zinc Nos. 3 and 7 die casting alloys, premium  
**Publication:** Daily

**Assessment:** **Zinc No. 5 die casting alloy premium**  
**Quality:** Aluminium 3.70-4.30%, magnesium 0.02-0.06%, copper 0.70-1.20%, iron max. 0.05%; lead max. 0.005%, cadmium max. 0.004%, tin max. 0.002%; zinc remainder  
**Location:** Delivered Midwest  
**Unit:** US cents per pound  
**Quantity:** 20 tons  
**Publication:** Every two weeks, Thursday

**Calculated:** **Zinc No5 die casting alloy price**  
**Quality:** Aluminium 3.70-4.30%, magnesium 0.02-0.06%, copper 0.70-1.20%, iron max 0.05%, lead max 0.005%, cadmium max 0.004%, tin max 0.002%, zinc remainder  
**Location:** Delivered Midwest  
**Unit:** US cents per pound  
**Formula:** London Metal Exchange official cash AM bid zinc price plus AMM zinc No.5 die casting alloy premium  
**Publication:** Daily

**Assessment:** **Zinc No2 die casting alloy premium**  
**Quality:** Aluminium 3.70-4.30%, magnesium 0.02-0.06%, copper 2.60-3.30%, iron max. 0.05%, lead max. 0.005%, cadmium max. 0.004%, tin 0.002%, zinc remainder  
**Location:** Delivered Midwest  
**Unit:** US cents per pound  
**Quantity:** 20 tons  
**Publication:** Every two weeks, Thursday

**Calculated:** **Zinc No2 die casting alloys price**  
**Quality:** Aluminium 3.70-4.30%, magnesium 0.02-0.06%, copper 2.60-3.30%, iron max. 0.05%, lead max. 0.005%, cadmium max. 0.004%, tin 0.002%, zinc remainder  
**Location:** Delivered Midwest  
**Unit:** US cents per pound  
**Formula:** Calculated. Formula: London Metal Exchange official cash AM bid zinc price plus AMM zinc No2 die-casting alloy premium  
**Publication:** Daily

**Assessment:** **Zinc-aluminium No. 8 foundry alloy premium**  
**Quality:** Aluminium 8.00-8.80%, magnesium 0.01-0.03%, copper 0.80-1.30%; iron max. 0.006%, lead max. 0.006%, cadmium max. 0.006%, tin max. 0.003%; zinc remainder  
**Location:** Delivered Midwest  
**Unit:** US cents per pound  
**Quantity:** 20 tons  
**Publication:** Every two weeks, Thursday

Calculated: **Zinc-aluminium No. 8 foundry alloy price**

Quality: Aluminium 8.00-8.80%, magnesium 0.01-0.03%, copper 0.80-1.30%; iron max. 0.006%, lead max. 0.006%, cadmium max. 0.006%, tin max. 0.003%; zinc remainder

Location: Delivered Midwest

Unit: US cents per pound

Formula: London Metal Exchange official cash AM bid zinc price plus AMM zinc-aluminium No. 8 foundry alloy premium

Publication: Daily

Assessment: **Zinc-aluminium No. 27 foundry alloy premium**

Quality: Aluminium 25.00-28.00%, magnesium 0.01-0.02%, copper 2.00-2.50%, iron max. 0.075%, lead max. 0.006%, cadmium max. 0.006%, tin max. 0.003%, zinc remainder

Location: Delivered Midwest

Unit: US cents per pound

Quantity: 20 tons

Publication: Every two weeks, Thursday

Assessment: **Zinc-aluminium No. 12 foundry alloy premium**

Quality: Aluminium 10.50-11.50%, magnesium 0.01-0.03%, copper 0.50-1.20%, iron max. 0.075%, lead max. 0.006%, cadmium max. 0.006%; tin max. 0.003%, zinc remainder

Location: Delivered Midwest

Unit: US cents per pound

Quantity: 20 tons

Publication: Every two weeks, Thursday

Calculated: **Zinc-aluminium No. 27 foundry alloys price**

Quality: Aluminium 25.00-28.00%, magnesium 0.01-0.02%, copper 2.00-2.50%, iron max. 0.075%, lead max. 0.006%, cadmium max. 0.006%, tin max. 0.003%, zinc remainder

Location: Delivered Midwest

Unit: US cents per pound

Formula: London Metal Exchange official cash AM bid zinc price plus AMM zinc-aluminium No. 27 foundry alloys premium

Publication: Daily

Calculated: **Zinc-aluminium No.12 foundry alloy price**

Quality: Aluminium 10.50-11.50%, magnesium 0.01-0.03%, copper 0.50-1.20%, iron max. 0.075%, lead max. 0.006%, cadmium max. 0.006%; tin max. 0.003%, zinc remainder

Location: Delivered Midwest

Unit: US cents per pound

Formula: London Metal Exchange official cash AM bid zinc price plus AMM zinc-aluminium No. 12 foundry alloy premium

Publication: Daily

# Titanium

**Calculated:** **Titanium sponge**  
**Location:** FOB shipping point  
**Unit:** US dollars per pound  
**Publication:** Monthly  
**Note:** Imported for consumption from Japan, US Department of Commerce data, average of most recent three months available, landed duty-paid value

**Assessment:** **Titanium ingot**  
**Quality:** 6Al-4V (Aluminum 6%, vanadium 4%, titanium remainder)  
**Location:** FOB shipping point  
**Unit:** US dollars per pound  
**Publication:** Quarterly

**Assessment:** **Titanium plate, alloy**  
**Quality:** AMS 4911 ½ inch x 48 inch x 120 inch  
**Location:** FOB shipping point  
**Unit:** US dollars per pound  
**Publication:** Quarterly

**Assessment:** **Titanium bar, alloy**  
**Quality:** AMS 4928, 1-inch diameter  
**Location:** FOB shipping point  
**Unit:** US dollars per pound  
**Publication:** Quarterly

**Assessment:** **Titanium plate, commercially pure**  
**Quality:** ASTM-B265 Grade 2, ½ inch x 96 inch x 240 inch  
**Location:** FOB shipping point  
**Unit:** US dollars per pound  
**Publication:** Quarterly

**Assessment:** **Titanium sheet, commercially pure**  
**Quality:** ASTM-B265 Grade 2, 1/8 inch x 36 inch x 96 inch  
**Unit:** US dollars per pound  
**Location:** FOB shipping point  
**Publication:** Quarterly

**Calculated:** **Titanium sponge**  
**Location:** FOB shipping point  
**Unit:** US dollars per pound  
**Publication:** Monthly  
**Note:** Imported for consumption from Japan, US Department of Commerce data, average of most recent three months available, landed duty-paid value

**Assessment:** **Titanium ingot**  
**Quality:** 6Al-4V (Aluminum 6%, vanadium 4%, titanium remainder)  
**Location:** FOB shipping point  
**Unit:** US dollars per pound  
**Publication:** Quarterly

**Assessment:** **Titanium plate, alloy**  
**Quality:** AMS 4911 ½ inch x 48 inch x 120 inch  
**Location:** FOB shipping point  
**Unit:** US dollars per pound  
**Publication:** Quarterly

**Assessment:** **Titanium bar, alloy**  
**Quality:** AMS 4928, 1-inch diameter  
**Location:** FOB shipping point  
**Unit:** US dollars per pound  
**Publication:** Quarterly

**Assessment:** **Titanium plate, commercially pure**  
**Quality:** ASTM-B265 Grade 2, ½ inch x 96 inch x 240 inch  
**Location:** FOB shipping point  
**Unit:** US dollars per pound  
**Publication:** Quarterly

**Assessment:** **Titanium sheet, commercially pure**  
**Quality:** ASTM-B265 Grade 2, 1/8 inch x 36 inch x 96 inch  
**Location:** FOB shipping point  
**Unit:** US dollars per pound  
**Publication:** Quarterly

## Ferro-alloys

**Assessment:** **Ferro-chrome, high carbon:**  
**Quality:** Chromium min. 62.00%, silicon max. 3.00%, carbon 6.00-8.00%  
**Location:** FOB warehouse  
**Unit:** US cents per pound  
**Quantity:** 20 tons  
**Publication:** Once a week, every Thursday

**Assessment:** **Ferro-chrome, low carbon, 0.05%C-65% min Cr:**  
**Quality:** Chromium min. 65.00%, carbon 0.05%, silicon max. 1.00%  
**Location:** FOB warehouse  
**Unit:** US cents per pound  
**Quantity:** 20 tons  
**Publication:** Once a week, every Thursday

**Assessment:** **Ferro-chrome, low carbon, 0.10%C-62% min Cr:**  
**Quality:** Chromium min 62.00%, carbon 0.10%, silicon max 1.00%  
**Location:** FOB warehouse  
**Unit:** US cents per pound  
**Quantity:** 20 tons  
**Publication:** Once a week, every Thursday

**Assessment:** **Ferro-chrome, low carbon, 0.15%C-60% min Cr:**  
**Quality:** Chromium min. 60.00%, carbon 0.15%, silicon max. 1.00%  
**Location:** FOB warehouse  
**Unit:** US cents per pound  
**Quantity:** 20 tons  
**Publication:** Once a week, every Thursday

**Assessment:** **Ferro-manganese, high carbon:**  
**Quality:** Manganese 78.00%, carbon 7.50%  
**Location:** FOB warehouse  
**Unit:** US dollars per long ton  
**Quantity:** 20 tons  
**Publication:** Once a week, every Thursday

**Assessment:** **Ferro-manganese, medium carbon:**  
**Quality:** Manganese min. 80.00%, carbon max. 1.50%  
**Location:** FOB warehouse  
**Unit:** US cents per pound  
**Quantity:** 20 tons  
**Publication:** Once a week, every Thursday

**Assessment:** **Ferro-manganese, low carbon:**  
**Quality:** Manganese min. 80.00%, carbon max. 0.80%  
**Location:** FOB warehouse  
**Unit:** US cents per pound  
**Quantity:** 20 tons  
**Publication:** Once a week, every Thursday

**Assessment:** **Ferro-silicon:**  
**Quality:** Silicon 75.00%  
**Location:** FOB warehouse  
**Unit:** US cents per pound  
**Quantity:** 20 tons  
**Publication:** Once a week, every Thursday

**Assessment:** **Ferro-molybdenum:**  
**Quality:** Molybdenum 65.00-70.00%  
**Location:** FOB warehouse  
**Unit:** US dollars per pound  
**Quantity:** 10 tons  
**Publication:** Once a week, every Thursday

**Assessment:** **Ferro-vanadium:**  
**Quality:** Vanadium 70.00-80.00%  
**Location:** FOB warehouse  
**Unit:** US dollars per pound  
**Quantity:** 10 tons  
**Publication:** Once a week, every Thursday

**Assessment:** **Molybdenum canned molybdic oxide:**  
**Quality:** Molybdenum min. 57.00%, copper max. 0.50%; phosphorus 0.05%; lead 0.05%; sulfur 0.10%; carbon 0.10%; moisture 0.10%  
**Location:** FOB warehouse  
**Unit:** US dollars per pound  
**Quantity:** 10 tons  
**Publication:** Once a week, every Thursday

Assessment: **Silico-manganese:**  
Quality: Manganese min. 65.00%; silicon min. 16.00%  
Location: FOB warehouse  
Unit: US cents per pound  
Quantity: 20 tons  
Publication: Once a week, every Thursday

Assessment: **Silicon metal:**  
Quality: Silicon 98.50%, iron 0.50%, aluminum 0.50%, calcium 0.30%  
Location: Delivered  
Unit: US cents per pound  
Quantity: 20 tons  
Publication: Once a month

## Contacts

### **Thorsten Schier**

Managing Editor, Americas

+1 646 274 6240

[tschier@fastmarkets.com](mailto:tschier@fastmarkets.com)

### **Christopher Kavanagh**

North American Non-ferrous Editor

+1 212 224 3918

[christopher.kavanagh@fastmarkets.com](mailto:christopher.kavanagh@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 advisor 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.