



argusmedia.com

ARGUS METAL PRICES

Contents:

| | |
|--|----|
| Methodology overview | 2 |
| The report | 5 |
| US ferrous scrap - weekly | 6 |
| Ferrous scrap specifications | 6 |
| US ferrous scrap - monthly | 7 |
| Ferrous scrap specifications - del consumer | 7 |
| Ferrous scrap specifications - del foundry | 8 |
| Tool steel scrap | 8 |
| US steel feedstocks | 9 |
| US steel feedstock specifications | 9 |
| Ferrous scrap freight | 9 |
| Coal freight | 9 |
| Ferrous scrap freight specifications | 9 |
| US stainless steel and specialty steel | 10 |
| Stainless steel scrap specifications | 10 |
| Stainless steel coil specifications | 10 |
| Bulk and noble alloys, and feedstocks specifications | 12 |
| Aluminum | 14 |
| Aluminium specifications | 14 |
| Copper and brass | 16 |
| Copper and brass specifications | 16 |
| Minor metals | 18 |
| Minor metals specifications | 19 |
| Minor metals specifications - monthly | 20 |
| Titanium scrap specifications | 21 |
| Nickel and zinc | 22 |
| Nickel and zinc specifications | 22 |
| Cupro-nickel and super alloys scrap | 22 |

LAST UPDATED: AUGUST 2017

The most up-to-date Argus Metal Prices Methodology and Specification Guide is available on www.argusmedia.com

Methodology overview

Methodology rationale

Argus strives to construct methodologies that reflect the way the market trades. Argus aims to produce price assessments which are reliable and representative indicators of commodity market values and are free from distortion. As a result, the specific currencies, volume units, locations and other particulars of an assessment are determined by industry conventions.

In the ferrous scrap, steel feedstocks, stainless steel scrap, ferro-alloys, aluminium, copper, brass, minor metals, zinc, titanium scrap, nickel and super alloys scrap markets, Argus publishes physical market prices in the open market as laid out in the specifications and methodology guide. Argus uses the trading period deemed by Argus to be most appropriate, in consultation with industry, to capture market liquidity.

In order to be included in the assessment process, deals must meet the minimum volume, delivery, timing and specification requirements in our methodology. In illiquid markets, and in other cases where deemed appropriate, Argus assesses the range within which product could have traded by applying a strict process outlined later in this methodology.

Survey process

Argus price assessments are informed by information received from a wide cross section of market participants, including producers, consumers and intermediaries. Argus reporters engage with the industry by proactively polling participants for market data. Argus will contact and accept market data from all credible market sources including front and back office of market participants and brokers. Argus will also receive market data from electronic trading platforms and directly from the back offices of market participants. Argus will accept market data by telephone, instant messenger, email or other means.

Argus encourages all sources of market data to submit all market data to which they are a party that falls within the Argus stated methodological criteria for the relevant assessment. Argus encourages all sources of market data to submit transaction data from back office functions.

Throughout all markets, Argus is constantly seeking to increase the number of companies willing to provide market data. Reporters are mentored and held accountable for expanding their pool of contacts. The number of entities providing market data can vary significantly from day to day based on market conditions.

For certain price assessments identified by local management, if more than 50pc of the market data involved in arriving at a price assessment is sourced from a single party the supervising editor will engage in an analysis of the market data with the primary reporter to ensure that the quality and integrity of the assessment has not been affected.

Market data usage

In each market, Argus uses the methodological approach deemed to be the most reliable and representative for that market. Argus will utilise various types of market data in its methodologies, to include:

- Transactions
- Bids and offers
- Other market information, to include spread values between grades, locations, timings, and many other data.

In many markets, the relevant methodology will assign a relatively higher importance to transactions over bids and offers, and a relatively higher importance to bids and offers over other market information. Certain markets however will exist for which such a hierarchy would produce unreliable and non-representative price assessments, and so the methodology must assign a different relative importance in order to ensure the quality and integrity of the price assessment. And even in markets for which the hierarchy normally applies, certain market situations will at times emerge for which the strict hierarchy would produce non-representative prices, requiring Argus to adapt in order to publish representative prices.

Verification of transaction data

Reporters carefully analyse all data submitted to the price assessment process. These data include transactions, bids, offers, volumes, counterparties, specifications and any other information that contributes materially to the determination of price. This high level of care described applies regardless of the methodology employed. Specific to transactions, bids, and offers, reporters seek to verify the price, the volume, the specifications, location basis, and counterparty. In some transactional average methodologies, reporters also examine the full array of transactions to match counterparties and arrive at a list of unique transactions. In some transactional average methodologies, full details of the transactions verified are published electronically and are accessible by subscribers. The deals are also published in the daily report.

Several tests are applied by reporters in all markets to transactional data to determine if it should be subjected to further scrutiny. If a transaction has been identified as failing such a test, it will receive further scrutiny. For assessments used to settle derivatives and for many other assessments, Argus has established internal procedures that involve escalation of inquiry within the source's company and escalating review within Argus management. Should this process determine that a transaction should be excluded from the price assessment process, the supervising editor will initiate approval and, if necessary, documentation procedures.

Primary tests applied by reporters

- Transactions not transacted at arm's length, including deals between related parties or affiliates.
- Transaction prices that deviate significantly from the mean of all transactions submitted for that day.
- Transaction prices that fall outside of the generally observed lows and highs that operated throughout the trading day.
- Transactions that are suspected to be a leg of another transaction or in some way contingent on an unknown

transaction.

- Single deal volumes that significantly exceed the typical transaction volume for that market.
- Transaction details that are identified by other market participants as being for any reason potentially anomalous and perceived by Argus to be as such.
- Transaction details that are reported by one counterparty differently than the other counterparty.
- Any transaction details that appear to the reporter to be illogical or to stray from the norms of trading behaviour. This could include but is not limited to divergent specifications, unusual delivery location and counterparties not typically seen.
- Transactions that involve the same counterparties, the same price and delivery dates are checked to see that they are separate deals and not one deal duplicated in Argus records.

Secondary tests applied by editors for transactions identified for further scrutiny

Transaction tests

- The impact of linkage of the deal to possible other transactions such as contingent legs, exchanges, options, swaps, or other derivative instruments. This will include a review of transactions in markets that the reporter may not be covering.
- The nature of disagreement between counterparties on transactional details.
- The possibility that a deal is directly linked to an offsetting transaction that is not publicly known, for example a "wash trade" which has the purpose of influencing the published price.
- The impact of non-market factors on price or volume, including distressed delivery, credit issues, scheduling issues, demurrage, or containment.

Source tests

- The credibility of the explanation provided for the outlying nature of the transaction.
- The track record of the source. Sources will be deemed more credible if they
 - Regularly provide transaction data with few errors.
 - Provide data by Argus' established deadline.
 - Quickly respond to queries from Argus reporters.
 - Have staff designated to respond to such queries.
- How close the information receipt is to the deadline for information, and the impact of that proximity on the validation process.

Assessment guidelines

When insufficient, inadequate, or no transaction information exists, or when Argus concludes that a transaction based methodology will not produce representative prices, Argus reporters will make an assessment of market value by applying intelligent judgment based on a broad array of factual market information. Reporters must use a high degree of care in gathering and validating all market data used in determining price assessments, a degree of care equal to that applying to gathering and validating transactions. The informa-

tion used to form an assessment could include deals done, bids, offers, tenders, spread trades, exchange trades, fundamental supply and demand information and other inputs.

The assessment process employing judgment is rigorous, replicable, and uses widely accepted valuation metrics. These valuation metrics mirror the process used by physical commodity traders to internally assess value prior to entering the market with a bid or offer. Applying these valuation metrics along with sound judgment significantly narrows the band within which a commodity can be assessed, and greatly increases the accuracy and consistency of the price series. The application of judgment is conducted jointly with the supervising editor, in order to be sure that guidelines below are being followed. Valuation metrics include the following:

Relative value transactions

Frequently transactions occur which instead of being an outright purchase or sale of a single commodity, are instead exchanges of commodities. Such transactions allow reporters to value less liquid markets against more liquid ones and establish a strong basis for the exercise of judgment.

- Exchange one commodity for a different commodity in the same market at a negotiated value.
- Exchange delivery dates for the same commodity at a negotiated value.
- Exchange a commodity in one location for the same commodity at another location at a negotiated value.

Bids and offers

If a sufficient number of bids and offers populate the market, then in most cases the highest bid and the lowest offer can be assumed to define the boundaries between which a deal could be transacted.

Comparative metrics

- The relative values between compared commodities are readily discussed in the market and can be discovered through dialogue with market participants. These discussions are the precursor to negotiation and conclusion of transactions.
- Comparison to the same commodity in another market centre.
- Comparison to a more actively traded but slightly different specification commodity in the same market centre.
- Comparison to the same commodity traded for a different delivery timing.
- Comparison to the commodity's primary feedstock or primary derived product(s).
- Comparison to trade in the same commodity but in a different modality (as in barge versus oceangoing vessel) or in a different total volume (as in full cargo load versus partial cargo load).

Volume minimums and transaction data thresholds

Argus typically does not establish thresholds strictly on the basis of a count of transactions, as this could lead to unreliable and non-representative assessments and because of the varying transportation infrastructure found in all commodity markets. Instead, minimum volumes are typically established which may

apply to each transaction accepted, to the aggregate of transactions, to transactions which set a low or high assessment or to other volumetrically relevant parameters.

For price assessments used to settle derivatives, Argus will seek to establish minimum transaction data thresholds and when no such threshold can be established Argus will explain the reasons. These thresholds will often reflect the minimum volumes necessary to produce a transaction-based methodology, but may also establish minimum deal parameters for use by a methodology that is based primarily on judgment.

Should no transaction threshold exist, or should submitted data fall below this methodology's stated transaction data threshold for any reason, Argus will follow the procedures outlined elsewhere in this document regarding the exercise of judgment in the price assessment process.

Transparency

Argus values transparency in energy markets. As a result, where available, we publish lists of deals in our reports that include price, basis, counterparty and volume information. The deal tables allow subscribers to cross check and verify the deals against the prices. Argus feels transparency and openness is vital to developing confidence in the price assessment process.

Swaps and forwards markets

Argus publishes forward assessments for numerous markets. These include forward market contracts that can allow physical delivery and swaps contracts that swap a fixed price for the average of a floating published price. Argus looks at forward swaps to inform physical assessments but places primary emphasis on the physical markets.

Publications and price data

Argus ferrous scrap, steel feedstocks, stainless steel scrap, ferro-alloys, aluminium, copper, brass, minor metals, zinc, titanium scrap, nickel and super alloys scrap prices are published in the Argus Metal Prices report. Subsets of these prices appear in other Argus market reports and newsletters in various forms. The price data are available independent of the text-based report in electronic files that can feed into various databases. These price data are also supplied through various third-party data integrators. The Argus website also provides access to prices, reports and news with various web-based tools. All Argus prices are kept in a historical database and available for purchase. Contact your local Argus office for information.

A publication schedule is available at www.argusmedia.com

Corrections to assessments

Argus will on occasion publish corrections to price assessments after the publication date. We will correct errors that arise from clerical mistakes, calculation errors, or a misapplication of our stated methodology. Argus will not retroactively assess markets based on new information learned after the assessments are published. We make our best effort to assess markets based on the information we gather during the trading day assessed.

Ethics and compliance

Argus operates according to the best practices in the publishing field, and maintains thorough compliance procedures throughout the firm. We want to be seen as a preferred provider by our sub-subscribers, who are held to equally high standards, while at the same time maintaining our editorial integrity and independence. Argus has a strict ethics policy that applies to all staff. The policy can be found on our website at www.argusmedia.com. Included in this policy are restrictions against staff trading in any energy commodity or energy related stocks, and guidelines for accepting gifts. Argus also has strict policies regarding central archiving of email and instant messenger communication, maintenance and archiving of notes, and archiving of spreadsheets and deal lists used in the price assessment process. Argus publishes prices that report and reflect prevailing levels for open-market arms length transactions (please see the [Argus Global Compliance Policy](#) for a detailed definition of arms length).

Consistency in the assessment process

Argus recognises the need to have judgment consistently applied by reporters covering separate markets, and by reporters replacing existing reporters in the assessment process. In order to ensure this consistency, Argus has developed a programme of training and oversight of reporters. This programme includes:

- A global price reporting manual describing among other things the guidelines for the exercise of judgment
- Cross-training of staff between markets to ensure proper holiday and sick leave backup. Editors that float between markets to monitor staff application of best practices
- Experienced editors overseeing reporting teams are involved in daily mentoring and assisting in the application of judgment for illiquid markets
- Editors are required to sign-off on all price assessments each day, thus ensuring the consistent application of judgment.

Review of methodology

The overriding objective of any methodology is to produce price assessments which are reliable and representative indicators of commodity market values and are free from distortion. As a result, Argus editors and reporters are regularly examining our methodologies and are in regular dialogue with the industry in order to ensure that the methodologies are representative of the market being assessed. This process is integral with reporting on a given market. In addition to this ongoing review of methodology, Argus conducts reviews of all of its methodologies and methodology documents on at least an annual basis.

Argus market report editors and management will periodically and as merited initiate reviews of market coverage based on a qualitative analysis that includes measurements of liquidity, visibility of market data, consistency of market data, quality of market data and industry usage of the assessments. Report editors will review:

- Appropriateness of the methodology of existing assessments
- Termination of existing assessments
- Initiation of new assessments.

The report editor will initiate an informal process to examine viability. This process includes:

- Informal discussions with market participants
- Informal discussions with other stakeholders
- Internal review of market data

Should changes, terminations, or initiations be merited, the report editor will submit an internal proposal to management for review and approval. Should changes or terminations of existing assessments be approved, then formal procedures for external consultation are begun.

Changes to methodology

Formal proposals to change methodologies typically emerge out of the ongoing process of internal and external review of the methodologies. Formal procedures for external consultation regarding material changes to existing methodologies will be initiated with an announcement of the proposed change published in the relevant Argus report. This announcement will include:

- Details on the proposed change and the rationale
- Method for submitting comments with a deadline for submissions
- For prices used in derivatives, notice that all formal comments will be published after the given consultation period unless submitter requests confidentiality.

Argus will provide sufficient opportunity for stakeholders to analyse and comment on changes, but will not allow the time needed to follow these procedures to create a situation wherein unrepresentative or false prices are published, markets are disrupted, or market participants are put at unnecessary risk. Argus will engage with industry throughout this process in order to gain acceptance of proposed changes to methodology. Argus cannot however guarantee universal acceptance and will act for the good order of the market and ensure the continued integrity of its price assessments as an overriding objective.

Following the consultation period, Argus management will commence an internal review and decide on the methodology change. This will be followed by an announcement of the decision, which will be published in the relevant Argus report and include a date for implementation. For prices used in derivatives, publication of stakeholders' formal comments that are not subject to confidentiality and Argus' response to those comments will also take place.

The report

Argus publishes metal prices that report and reflect prevailing levels for open-market arms length transactions.

Various methodological approaches are employed in reporting metals markets to produce the most representative price assessments.

These include volume-weighted averages of deals done, lows and highs of deals done, and other methods.

In illiquid markets, Argus assesses the range within which metals could have traded, based on bids and offers, movements of similar or related grades, and extensive polling of market participants.

Formula-priced deals, market fundamentals and information regarding trade in material that does not meet specifications also inform assessments, but a primary emphasis is placed on the physical markets.

To be included in the price formation process, deals must meet the strict delivery, timing and specification requirements in the methodology, and must be executed at arms length between a willing buyer and seller.

In markets where liquidity is split across several locations, information may be normalised to a single reference hub, for example by making adjustments for transportation costs, where appropriate and in line with market practice.

Survey method and verification

Price assessments rely on a wide variety of sources for information, including refiners, marketers, importers, traders and brokers.

Argus does not restrict itself to one subsection of the market, such as a single trading platform or a single informational channel, for the market information collected. Market surveys are intended to be balanced in approach and are conducted by experienced industry specialists.

In most cases, information relating to material that falls outside of the stated specifications will not be used in the assessment process. Exceptions may be made if an acceptable and appropriate normalisation process can be applied.

In markets where liquidity is split across several locations, verified spot trades may be normalised to a single reference hub, for example by making adjustments for transportation costs, where appropriate and in line with market practice.

US ferrous scrap - weekly

Introduction

Argus Metal Prices publishes weekly price assessments and market commentary on the US ferrous scrap markets.

Basis of assessment

Assessments are for the named material meeting the lot size, timing

and delivery criteria listed in the table below. Assessments are of the range in which repeatable trade took place or in which it could have taken place in the absence of transactions since the last assessment.

Timing of assessment

Prices are assessed and published weekly, on Friday. Market information received after 4pm Houston time on the day of assessment may not be included in the assessment process.

Ferrous scrap specifications

| Assessment | Quantity | Timing | Currency/unit |
|---|----------|-----------|---------------|
| Regional ferrous scrap | | | |
| US eastern (del Philadelphia, Pittsburgh, Cleveland/Youngstown) | | | |
| #1 HMS | 500gt | 30 days | \$/gt |
| #2 HMS | 500gt | 30 days | \$/gt |
| Shredded | 500gt | 30 days | \$/gt |
| P&S, 5ft | 500gt | 30 days | \$/gt |
| #1 busheling | 500gt | 30 days | \$/gt |
| US midwest (del Chicago, Detroit, St Louis, Cincinnati/Indianapolis) | | | |
| #1 HMS | 500gt | 30 days | \$/gt |
| #2 HMS | 500gt | 30 days | \$/gt |
| Shredded | 500gt | 30 days | \$/gt |
| P&S, 5ft | 500gt | 30 days | \$/gt |
| #1 busheling | 500gt | 30 days | \$/gt |
| US southeast (del Birmingham, Carolinas) | | | |
| #1 HMS | 500gt | 30 days | \$/gt |
| #2 HMS | 500gt | 30 days | \$/gt |
| Shredded | 500gt | 30 days | \$/gt |
| P&S, 5ft | 500gt | 30 days | \$/gt |
| #1 busheling | 500gt | 30 days | \$/gt |
| Ferrous containerized scrap | | | |
| New York container (fas New York) | | | |
| HMS 1/2 (80:20) | 500t | 2-6 weeks | \$/gt |
| Shredded | 500t | 2-6 weeks | \$/gt |
| P&S, 5ft | 500t | 2-6 weeks | \$/gt |
| Los Angeles container (fas Los Angeles) | | | |
| HMS 1/2 (80:20) | 500t | 2-6 weeks | \$/gt |
| Shredded | 500t | 2-6 weeks | \$/gt |
| P&S, 5ft | 500t | 2-6 weeks | \$/gt |
| San Francisco container (fas San Francisco) | | | |
| HMS 1/2 (80:20) | 500t | 2-6 weeks | \$/gt |
| Shredded | 500t | 2-6 weeks | \$/gt |
| P&S, 5ft | 500t | 2-6 weeks | \$/gt |
| Seattle container (fas Seattle) | | | |
| HMS 1/2 (80:20) | 500t | 2-6 weeks | \$/gt |
| Shredded | 500t | 2-6 weeks | \$/gt |
| P&S, 5ft | 500t | 2-6 weeks | \$/gt |
| Ferrous scrap export yard buying prices | | | |
| Boston (delivered) | | | |
| #1 HMS | 500t | 30 days | \$/gt |
| P&S, 5ft | 500t | 30 days | \$/gt |
| Shredder feed | 500t | 30 days | \$/gt |

| Assessment | Quantity | Timing | Currency/unit |
|--|---|-----------|---------------|
| New York (delivered) | | | |
| #1 HMS | 500t | 30 days | \$/gt |
| P&S, 5ft | 500t | 30 days | \$/gt |
| Shredder feed | 500t | 30 days | \$/gt |
| Philadelphia (delivered) | | | |
| #1 HMS | 500t | 30 days | \$/gt |
| P&S, 5ft | 500t | 30 days | \$/gt |
| Shredder feed | 500t | 30 days | \$/gt |
| Houston (delivered) | | | |
| #1 HMS | 500t | 30 days | \$/gt |
| P&S, 5ft | 500t | 30 days | \$/gt |
| Shredder feed | 500t | 30 days | \$/gt |
| Los Angeles (delivered) | | | |
| #1 HMS | 500t | 30 days | \$/gt |
| P&S, 5ft | 500t | 30 days | \$/gt |
| Shredder feed | 500t | 30 days | \$/gt |
| San Francisco (delivered) | | | |
| #1 HMS | 500t | 30 days | \$/gt |
| P&S, 5ft | 500t | 30 days | \$/gt |
| Shredder feed | 500t | 30 days | \$/gt |
| Seattle/Portland (delivered) | | | |
| #1 HMS | 500t | 30 days | \$/gt |
| P&S, 5ft | 500t | 30 days | \$/gt |
| Shredder feed | 500t | 30 days | \$/gt |
| Ferrous scrap prices | | | |
| US east coast bulk (fob New York) | | | |
| HMS 1/2 (80:20) | 5,000t | 2-8 weeks | \$/t |
| Shredded | 5,000t | 2-8 weeks | \$/t |
| P&S, 5ft | 5,000t | 2-8 weeks | \$/t |
| US west coast bulk (fob Los Angeles) | | | |
| HMS 1/2 (80:20) | 5,000t | 2-8 weeks | \$/t |
| Shredded | 5,000t | 2-8 weeks | \$/t |
| P&S, 5ft | 5,000t | 2-8 weeks | \$/t |
| Taiwan container (cfr) | | | |
| HMS 1/2 (80:20) | 500t | 2-6 weeks | \$/t |
| Composite delivered US consumer | | | |
| <i>Composite prices are calculated on Fridays as the average of monthly prices published for the named material in the markets listed below. Composite prices are published as a single value.</i> | | | |
| #1 HMS | Chicago, Birmingham, Cleveland, Houston/San Antonio, Philadelphia | | |
| Shredded | Chicago, Birmingham, Cleveland, Cincinnati/Indianapolis, Philadelphia | | |
| #1 busheling | Chicago, Birmingham, Cleveland, Cincinnati/Indianapolis, Philadelphia | | |
| P&S, 5ft | Chicago, Birmingham, Cleveland, Houston/San Antonio, Philadelphia | | |

US ferrous scrap - monthly

Introduction

Argus Metal Prices publishes monthly price assessments and market commentary on the US ferrous scrap markets.

Basis of assessment

Assessments are for the named material meeting the lot size, timing and delivery criteria listed in the table below. Assessments are published as a single price at which repeatable trade took place or at which it could have taken place in the absence of transactions since the last assessment.

Ferrous scrap specifications - del consumer

| Assessment | Quantity | Timing | Currency/ unit |
|--------------------------------|----------|---------|-------------------|
| US delivered consumer | | | |
| Birmingham | | | |
| #1 HMS | 500gt | 30 days | \$/gt |
| #2 HMS | 500gt | 30 days | \$/gt |
| #1 busheling | 500gt | 30 days | \$/gt |
| Factory bundles | 500gt | 30 days | \$/gt |
| Shredded | 500gt | 30 days | \$/gt |
| P&S, 5ft | 500gt | 30 days | \$/gt |
| Machine shop turnings | 500gt | 30 days | \$/gt |
| Carolinas | | | |
| #1 HMS | 500gt | 30 days | \$/gt |
| #1 busheling | 500gt | 30 days | \$/gt |
| Shredded | 500gt | 30 days | \$/gt |
| P&S, 5ft | 500gt | 30 days | \$/gt |
| Machine shop turnings | 500gt | 30 days | \$/gt |
| Tin can bundles | 500gt | 30 days | \$/gt |
| Chicago | | | |
| #1 HMS | 500gt | 30 days | \$/gt |
| #1 busheling | 500gt | 30 days | \$/gt |
| #1 bundles | 500gt | 30 days | \$/gt |
| Shredded | 500gt | 30 days | \$/gt |
| P&S, 5ft | 500gt | 30 days | \$/gt |
| Machine shop turnings | 500gt | 30 days | \$/gt |
| Cincinnati/Indianapolis | | | |
| #1 HMS | 500gt | 30 days | \$/gt |
| #1 busheling | 500gt | 30 days | \$/gt |
| #1 bundles | 500gt | 30 days | \$/gt |
| Shredded | 500gt | 30 days | \$/gt |
| P&S, 5ft | 500gt | 30 days | \$/gt |
| Machine shop turnings | 500gt | 30 days | \$/gt |
| Cleveland/Youngstown | | | |
| #1 HMS | 500gt | 30 days | \$/gt |
| #1 busheling | 500gt | 30 days | \$/gt |
| Factory bundles | 500gt | 30 days | \$/gt |
| #1 bundles | 500gt | 30 days | \$/gt |
| Shredded | 500gt | 30 days | \$/gt |
| P&S, 5ft | 500gt | 30 days | \$/gt |
| Machine shop turnings | 500gt | 30 days | \$/gt |
| Tin can bundles | 500gt | 30 days | \$/gt |

Timing of assessment

Prices are assessed and published on or before the 10th day of the calendar month, depending on when the majority of trade for a given location is completed. Market information received after 4pm Houston time on the day of assessment may not be included in the assessment process.

| Assessment | Quantity | Timing | Currency/ unit |
|----------------------------|----------|---------|-------------------|
| Dallas | | | |
| #1 HMS | 500gt | 30 days | \$/gt |
| #1 busheling | 500gt | 30 days | \$/gt |
| Shredded | 500gt | 30 days | \$/gt |
| P&S, 5ft | 500gt | 30 days | \$/gt |
| Machine shop turnings | 500gt | 30 days | \$/gt |
| Detroit | | | |
| #1 HMS | 500gt | 30 days | \$/gt |
| #1 busheling | 500gt | 30 days | \$/gt |
| Factory bundles | 500gt | 30 days | \$/gt |
| #1 bundles | 500gt | 30 days | \$/gt |
| Shredded | 500gt | 30 days | \$/gt |
| P&S, 5ft | 500gt | 30 days | \$/gt |
| Machine shop turnings | 500gt | 30 days | \$/gt |
| Tin can bundles | 500gt | 30 days | \$/gt |
| Houston/San Antonio | | | |
| #1 HMS | 500gt | 30 days | \$/gt |
| #1 busheling | 500gt | 30 days | \$/gt |
| Shredded | 500gt | 30 days | \$/gt |
| P&S, 5ft | 500gt | 30 days | \$/gt |
| Machine shop turnings | 500gt | 30 days | \$/gt |
| Philadelphia | | | |
| #1 HMS | 500gt | 30 days | \$/gt |
| #2 HMS | 500gt | 30 days | \$/gt |
| #1 busheling | 500gt | 30 days | \$/gt |
| Factory bundles | 500gt | 30 days | \$/gt |
| #1 bundles | 500gt | 30 days | \$/gt |
| Shredded | 500gt | 30 days | \$/gt |
| P&S, 5ft | 500gt | 30 days | \$/gt |
| Machine shop turnings | 500gt | 30 days | \$/gt |
| Pittsburgh | | | |
| #1 HMS | 500gt | 30 days | \$/gt |
| #2 HMS | 500gt | 30 days | \$/gt |
| #1 busheling | 500gt | 30 days | \$/gt |
| Factory bundles | 500gt | 30 days | \$/gt |
| Shredded | 500gt | 30 days | \$/gt |
| P&S, 5ft | 500gt | 30 days | \$/gt |
| Machine shop turnings | 500gt | 30 days | \$/gt |
| Tin can bundles | 500gt | 30 days | \$/gt |

Ferrous scrap specifications - del foundry

| Assessment | Quantity | Timing | Currency/ unit |
|--|----------|---------|-------------------|
| Delivered foundry, specialty consumer | | | |
| Chicago | | | |
| Black/foundry busheling | 500gt | 30 days | \$/gt |
| Clean auto cast | 500gt | 30 days | \$/gt |
| Clean fresh cast iron borings | 500gt | 30 days | \$/gt |
| Ductile-quality shredded clips | 500gt | 30 days | \$/gt |
| Low-alloy punchings | 500gt | 30 days | \$/gt |
| #1 machine cast | 500gt | 30 days | \$/gt |
| P&S, 2ft | 500gt | 30 days | \$/gt |
| Cleveland | | | |
| Clean auto cast | 500gt | 30 days | \$/gt |
| Philadelphia | | | |
| Black/foundry busheling | 500gt | 30 days | \$/gt |
| P&S, 2ft | 500gt | 30 days | \$/gt |
| Dealer selling prices | | | |
| Houston (fob) | | | |
| #1 HMS | 500gt | 30 days | \$/gt |
| #1 busheling | 500gt | 30 days | \$/gt |
| #1 bundles | 500gt | 30 days | \$/gt |
| Shredded | 500gt | 30 days | \$/gt |
| P&S, 5ft | 500gt | 30 days | \$/gt |
| Machine shop turnings | 500gt | 30 days | \$/gt |
| St Louis (fob) | | | |
| #1 HMS | 500gt | 30 days | \$/gt |
| #1 busheling | 500gt | 30 days | \$/gt |
| #1 bundles | 500gt | 30 days | \$/gt |
| Shredded | 500gt | 30 days | \$/gt |
| P&S, 5ft | 500gt | 30 days | \$/gt |
| Machine shop turnings | 500gt | 30 days | \$/gt |

Tool steel scrap

Argus Metal Prices publishes calculated prices for tool steel scrap.

Prices are calculated by weighting the price of component and feedstock metals according to formulas developed from collaboration with the industry. Prices are calculated only on those days when one or more component price has changed. Prices are expressed as a low-high range and in US dollars per pound (lb).

Prices are assessed for

H13
M1
M2
M42
T1
T15

US steel feedstocks

Introduction

Argus Metal Prices publishes weekly price assessments and market commentary on the US steel feedstocks markets.

Basis of assessment

Assessments are for the named material meeting the lot size, timing

US steel feedstock specifications

| Assessment | Quantity | Timing | Currency/ unit |
|---------------------------------------|----------|-----------|-------------------|
| Regional ferrous scrap | | | |
| New Orleans (cif New Orleans) | | | |
| Pig iron basic Brazilian | 5,000t | 2-8 weeks | \$/t |
| Pig iron basic Ukrainian/Russian | 5,000t | 2-8 weeks | \$/t |
| Hot briquetted iron (HBI) | 5,000t | 2-8 weeks | \$/t |
| Pig iron basic | 5,000t | 2-8 weeks | \$/t |
| Pig iron nodular | 5,000t | 2-8 weeks | \$/t |
| Chicago pig iron, delivered | | | |
| Basic | 1,270t | 30 days | \$/t |
| Nodular | 1,270t | 30 days | \$/t |
| Pittsburgh pig iron, delivered | | | |
| Basic | 1,270t | 30 days | \$/t |
| Nodular | 1,270t | 30 days | \$/t |

Ferrous scrap specifications - International, Russia domestic

| Assessment | Specification |
|-----------------------------|--|
| Ferrous scrap | |
| HMS 1/2 (80:20), cfr Turkey | See the Argus Steel Feedstocks methodology |
| Iron ore fines | |
| 62% FE cfr Qingdao | See the Argus Steel Feedstocks methodology |
| Metallurgical coal | |
| low-vol fob Hampton Roads | See the Argus Steel Feedstocks methodology |
| low-vol A fob Hampton Roads | See the Argus Steel Feedstocks methodology |
| low-vol B fob Hampton Roads | See the Argus Steel Feedstocks methodology |

Ferrous scrap freight

Introduction

Argus Metal Prices publishes ferrous scrap freight rates.

Basis of assessment

Assessments are for transportation meeting the lot size, modality, load and discharge port listed. Assessments are of the range in which repeatable trade took place or in which it could have taken place in the absence of transactions since the last assessment.

Timing of assessment

Bulk freight prices are assessed weekly, on Friday. Containerised scrap freight prices are assessed monthly, on the last working day of the month. Market information received after 4pm Houston time on the day of assessment may not be included in the assessment process.

and delivery criteria listed in the table below. Assessments are of the range in which repeatable trade took place or in which it could have taken place in the absence of transactions since the last assessment.

Timing of assessment

Prices are assessed and published weekly, on Friday. Market information received after 4pm Houston time on the day of assessment may not be included in the assessment process.

Coal freight

Argus Metal Prices contains iron ore freight rates, published in \$/t.

Coking coal routes covered

US east coast-Japan 75,000t Panamax
US east coast-ARA 140,000t Capesize

See the [Argus Freight methodology](#).

Rounding

Ferrous scrap freight rates are rounded to two decimal places, ending in 0 or 5.

Ferrous scrap freight specifications

| Assessment | Modality | Quantity | Load port | Discharge port |
|---|-----------|----------|---------------|-----------------|
| Ferrous scrap bulk export New York-Turkey | Bulk | 5,000t | New York | Turkey all |
| Ferrous scrap bulk export Los Angeles-South Korea | Bulk | 5,000t | Los Angeles | South Korea all |
| Ferrous scrap containerised export New York-Mumbai | Container | 500t | New York | Mumbai |
| Ferrous scrap containerised export Los Angeles-Taiwan | Container | 500t | Los Angeles | Taiwan all |
| Ferrous scrap containerised export San Francisco-Taiwan | Container | 500t | San Francisco | Taiwan all |
| Ferrous scrap containerised export Seattle-Taiwan | Container | 500t | Seattle | Taiwan all |

US stainless steel and specialty steel

Introduction

Argus Metal Prices publishes daily, weekly and monthly price assessments and market commentary on the US stainless steel scrap and flat rolled coil markets.

Basis of assessment

Assessments are for the named material meeting the lot size, timing and delivery criteria listed in the table below. Assessments are of the range in which repeatable trade took place or in which it could have taken place in the absence of transactions since the last assessment.

Flat rolled coil producer surcharges are the arithmetic average of surcharges announced by US producers.

Stainless steel scrap nickel contained in 304/316 scrap solids spread del US consumer is expressed as a differential to the LME official nickel cash price.

Timing

Weekly price assessments are published each Thursday.

Monthly stainless steel scrap price assessments are published on the first publication date on or after the 15th of the calendar month.

Monthly stainless steel coil price assessments are published on the first publication date of the calendar month.

Market information received after 4pm Houston time on the day of assessment may not be included in the assessment process.

Stainless steel scrap specifications

| Assessment | Quality | Quantity | Currency/ unit | Assessment frequency | Transacted/ transactable | Timing | Basis |
|---|--|-----------|-------------------|-------------------------|-----------------------------|---------|--------|
| 304 (18-8) solids del US processor | ISRI Sabot, unprocessed | truckload | \$/lb | daily | on day of assessment | 30 days | del US |
| 304 (18-8) turnings del US processor | ISRI Ultra, unprocessed | truckload | \$/lb | daily | on day of assessment | 30 days | del US |
| 316 solids del US processor | SSINA S31600 scrap clips/solids, unprocessed | truckload | \$/lb | daily | on day of assessment | 30 days | del US |
| 316 turnings del US processor | SSINA S31600 turnings, unprocessed | truckload | \$/lb | daily | on day of assessment | 30 days | del US |
| 409/410 solids del US processor | SSINA S40900/S41000 scrap clips/solids, unprocessed | truckload | \$/gross ton | weekly | since last assessment | 30 days | del US |
| 430 solids del US processor | SSINA S43000 scrap clips/solids, unprocessed | truckload | \$/gross ton | weekly | since last assessment | 30 days | del US |
| 304 (18-8) solids cif Rotterdam | See the Argus Metals International methodology | | | | | | |
| 304 (18-8) solids cif Taiwan | See the Argus Metals International methodology | | | | | | |
| Chrome contained in 304/316 solids del US consumer | High-carbon ferro-chrome in 304/316 scrap clips/solids | truckload | \$/lb | monthly | since last assessment | 30 days | del US |
| Iron contained in 304/316 solids del US consumer | Ferrous scrap in 304/316 scrap clips/solids | truckload | \$/lb | monthly | since last assessment | 30 days | del US |
| Nickel contained in 304/316 solids spread del US consumer | Nickel in 304/316 scrap clips/solids | truckload | \$/lb | monthly | since last assessment | 30 days | del US |
| Molybdenum contained in 316 solids del US consumer | Molybdenum oxide in 316 scrap clips/solids | truckload | \$/lb | monthly | since last assessment | 30 days | del US |

Stainless steel coil specifications

| Assessment | Quality | Quantity | Currency/ unit | Assessment frequency | Transacted/ transactable | Timing | Basis |
|--------------------------------|--------------------------|-----------|-------------------|-------------------------|-----------------------------|---------|-------------|
| 301 flat rolled coil surcharge | SSINA S30100 | truckload | \$/lb | monthly | on day of assessment | 30 days | ex-works US |
| 304 flat rolled coil surcharge | SSINA S30400 | truckload | \$/lb | monthly | on day of assessment | 30 days | ex-works US |
| 316 flat rolled coil surcharge | SSINA S31600 | truckload | \$/lb | monthly | on day of assessment | 30 days | ex-works US |
| 301 flat rolled coil | SSINA S30100; gauge 7-14 | truckload | \$/lb | monthly | on day of assessment | 30 days | ex-works US |
| 304 flat rolled coil | SSINA S30400; gauge 7-14 | truckload | \$/lb | monthly | on day of assessment | 30 days | ex-works US |
| 316 flat rolled coil | SSINA S31600; gauge 7-14 | truckload | \$/lb | monthly | on day of assessment | 30 days | ex-works US |

Ferro-Alloys

Introduction

Argus Metal Prices publishes price assessments and market commentary on the North American ferro-alloys markets.

Basis of assessment

Price assessments are for spot physical material for prompt delivery, with cash payment and in lump form. Packaging norms are in bags, loose in bulk or in drums, in line with market convention.

For US in-warehouse price assessments, the main delivery locations are Baltimore, Pittsburgh, Chicago, Houston and Decatur (Alabama); Portland (Oregon) and Los Angeles, with other warehouse locations also taken into account where appropriate. Fob US in-warehouse price assessments are inclusive of duties.

See the bulk alloy and feedstock specifications tables for details.

Product specifications for each assessment, such as currency, unit of trade and quality follow recognised industry standards such as norms published by the Minor Metals Trade Association and other widely used specifications.

Assessments are of the range in which repeatable trade took place or in which it could have taken place in the absence of transactions since the last assessment.

Timing of assessment

Prices are assessed and published weekly, on Thursday. Market information received after 4pm Houston time on the day of assessment may not be included in the assessment process.

Rounding

Ferro-alloy price assessments are published to up to two decimal places.

| Bulk and noble alloys, and feedstocks specifications | | | | | | | | | |
|---|---|------------------------------|----------------|--------------|---------------|------------|-----------------------------------|-------------------------|-----------|
| Alloy | Grade | Basis | Duties/tariffs | Quantity | Currency/unit | Form | Packaging | Timing | Assesment |
| Ferro-boron | | | | | | | | | |
| 17% B fob warehouse US | Boron 17% minimum, silicon 1.5%, carbon 0.4%, aluminium 0.3%, phosphorous 0.035%, sulphur 0.01% maximum | fob US warehouse | Duty paid | <1000kg | \$/lb | 50mm x10mm | Drums, super sacks | within 30 days of trade | weekly |
| Ferro-chrome | | | | | | | | | |
| Charge chrome fob US | size 75mm x 25mm (3x1inch) max, Cr 47% min, C 6% - 8%, Si 6% max, P 0.05% max, S 0.06% max | fob US warehouse | Duty paid | truckload | \$/lb | Lump | As per customer specification | within 30 days of trade | weekly |
| HC min 60-65% Cr 6-8% C fob US warehouse (per lb Cr) | Chromium 60-65%, carbon 6-8% | fob US warehouse | Duty paid | 100t | \$/lb | Lump | Bulk | within 30 days of trade | weekly |
| LC 60% Cr 0.15% C fob US warehouse | Chromium 60-65%, carbon 0.15% maximum | fob US warehouse | Duty paid | 25t | \$/lb | Lump | Bulk | within 30 days of trade | weekly |
| LC min 60-65% Cr 0.05% C max 1.5% Si fob US warehouse (per lb Cr) | Chromium 60-65% minimum, carbon 0.05%, silicon 1.5% maximum | fob US warehouse | Duty paid | 25t | \$/lb | Lump | Bulk | within 30 days of trade | weekly |
| LC min 60-65% Cr 0.10% C max 1.5% Si fob US warehouse (per lb Cr) | Chromium 60-65% minimum, carbon 0.10%, silicon 1.5% maximum | fob US warehouse | Duty paid | 25t | \$/lb | Lump | Bulk | within 30 days of trade | weekly |
| Charge Chrome 52% Cr ddp Europe, \$/lb Cr | See the Argus Metals International methodology | | | | | | | | |
| Manganese | | | | | | | | | |
| Electrolytic metal min 99.7% fob US warehouse, \$/lb | Manganese 99.7% | fob US warehouse | Duty paid | 20t (+/- 2%) | \$/lb | Flake | Super sacks | within 30 days of trade | weekly |
| Silico-manganese | | | | | | | | | |
| min 65% Mn 16% Si fob North America warehouse | Manganese 65%, silicon 16% minimum, carbon 2% maximum | fob North America warehouse | Duty paid | 20t | \$/lb | Lump | Big bags of 1t, bulk | within 30 days of trade | weekly |
| Ferro-manganese | | | | | | | | | |
| HC min 80% Mn 6-8% C fob North America warehouse | Manganese 80% minimum, carbon 6-8% maximum | fob North America | Duty paid | 20t | \$/long ton | Lump | Big bags of 1t, steel drums, bulk | within 30 days of trade | weekly |
| MC 80% Mn 1-2% C fob North America warehouse | Manganese 80%, carbon 1-2% | fob North America | Duty paid | 20t | \$/lb | Lump | Super sacks, bulk | within 30 days of trade | weekly |
| Ferro-molybdenum | | | | | | | | | |
| 60% Mo ex-works China | See the Argus Metals International methodology | | | | | | | | |
| min 65% Mo max 1.5% Si fob North America warehouse (per lb Mo) | Molybdenum 65% minimum, silicon 1.5%, copper 0.5% maximum | fob North American warehouse | Duty paid | 40,000lb | \$/lb | Lump | Big bags, drums | within 30 days of trade | weekly |
| Ferro-niobium | | | | | | | | | |
| 65% Nb fob US warehouse | Niobium 65% minimum | fob US warehouse | Duty paid | <10,000lb | \$/lb | Lump | Bags of 1t, drums | within 30 days of trade | monthly |

| Alloy | Grade | Basis | Duties/tariffs | Quantity | Currency/unit | Form | Packaging | Timing | Assesment |
|---|---|-------------------|----------------|-----------------|---------------|-----------|----------------------|-------------------------|-----------|
| Ferro-silicon | | | | | | | | | |
| min 75% Si max 0.1% C fob US warehouse (per lb Si) | Silicon 75% minimum, aluminium 1.5%, carbon 0.10% maximum | fob US warehouse | Duty paid | 20-24t/25t | \$/lb | Lump | Big bags of 1t, bulk | within 30 days of trade | weekly |
| Ferro-titanium | | | | | | | | | |
| Ferro-titanium 70% Ti fob North America warehouse | Titanium 70% minimum | fob North America | Duty paid | 38,000lbs | \$/lb | 2" X 1/4" | Super sack | within 30 days of trade | weekly |
| Ferro-tungsten | | | | | | | | | |
| 75% W fob North America warehouse | Tungsten 75% minimum | fob North America | Duty paid | 38,000lbs | \$/lb | Lump | Drums, bulk | within 30 days of trade | weekly |
| Ferro-vanadium | | | | | | | | | |
| 78-82% V max 1.5% Si fob North America warehouse (per lb V) | Vanadium 78-82% minimum, aluminium 1.5%, silicon 1.5%, carbon 0.25%, phosphorous 0.06%, sulphur 0.05% maximum | fob North America | Duty paid | 20-24t (+/- 2%) | \$/lb | Lump | Big bags, drums | within 30 days of trade | weekly |
| Molybdenum oxide / concentrate | | | | | | | | | |
| Oxide min 57% fob US warehouse, \$/lb | Molybdenum 57% minimum, carbon 0.1%, phosphorus 0.05%, S 0.1%, copper 0.5%, lead 0.05% maximum | fob US warehouse | Duty unpaid | 20t (+/- 2%) | \$/lb | Powder | Drums, super sacks | Prompt | weekly |

Aluminum

Introduction

Argus Metal Prices publishes price assessments and market commentary on the US aluminum markets.

Basis of assessment

Assessments are for the named material delivered by truck, meeting the quantity and timing criteria listed in the table below. Assessments are of the range in which repeatable trade took place or in which it could have taken place in the absence of transactions since the last assessment.

Notes

- P1020 US midwest premium: assessed at a differential to LME official cash price for aluminium
- Primary 6061 US billet premium: assessed at a differential to

P1020 US midwest assessment

- Primary 6063 US billet premium: assessed at a differential to P1020 US midwest assessment

Timing of assessment

Prices are assessed and published weekly on the day specified in the table below. Market information received after 4pm Houston time on the day of assessment may not be included in the assessment process.

Rounding

Assessments are published to up to four decimal places, ending in 0 or 5.

Aluminium specifications

| Assessment | Quality | Transacted/ transactable | Day of assessment | Quantity | Timing |
|--|---|-----------------------------|----------------------|-----------|---------|
| Premiums - US (by truck to Indiana, Missouri, Wisconsin, Kentucky or Tennessee) | | | | | |
| P1020 US midwest | LME P1020A, 99.7% purity | on day of assessment | Wednesday | truckload | 30 days |
| P1020 US midwest transaction | calculated as the LME cash price settlement + the Argus P1020 US midwest premium assessment | | | | |
| 6061 billet | Aluminum Association 6061 | on day of assessment | Wednesday | truckload | 30 days |
| 6063 billet | Aluminum Association 6063 | on day of assessment | Wednesday | truckload | 30 days |
| 6063 billet transaction | calculated as the Argus P1020 US midwest transaction price + the Argus 6063 billet price assessment | | | | |
| Premiums - Rotterdam | | | | | |
| 6063 extrusion duty paid | See the Argus Metals International methodology | | | | |
| Mill grade, extruder scrap delivered US (by truck to Indiana, Missouri, Wisconsin, Kentucky or Tennessee) | | | | | |
| Cans (UBC) | ISRI Taldon; used aluminum beverage cans | on day of assessment | Tuesday | truckload | 30 days |
| 5052 clips | ISRI Tooth; Aluminum Association 5052 | on day of assessment | Tuesday | truckload | 30 days |
| Litho sheet | ISRI Tabloid | on day of assessment | Tuesday | truckload | 30 days |
| MLC | ISRI Taboo; mixed low copper aluminum alloy clips and/or solids for processing in mill | on day of assessment | Tuesday | truckload | 30 days |
| Painted siding | ISRI Tale for processing in mill | on day of assessment | Tuesday | truckload | 30 days |
| 6061 new, bare | Aluminum Association 6061, new bare extrusion scrap | on day of assessment | Tuesday | truckload | 30 days |
| 6061 truck wheels | ISRI Troma; Aluminum Association 6061; alloy truck wheels | on day of assessment | Tuesday | truckload | 30 days |
| 10/10 extrusions | ISRI Toto | on day of assessment | Tuesday | truckload | 30 days |
| A356 wheels | ISRI Troma; Aluminum Association A356; alloy wheels | on day of assessment | Tuesday | truckload | 30 days |
| 6063 new, bare | ISRI Tata; Aluminum Association 6063; new bare extrusion | on day of assessment | Tuesday | truckload | 30 days |
| EC wire | ISRI Talon; Electrical Conductor wire | on day of assessment | Tuesday | truckload | 30 days |
| 1100 & 3003 clips | ISRI Tooth; Aluminum Association 1100 and 3003 | on day of assessment | Tuesday | truckload | 30 days |
| Secondary smelter scrap - US (by truck to Indiana, Missouri, Wisconsin, Kentucky or Tennessee) | | | | | |
| MLC secondary | ISRI Taboo; mixed low copper aluminum alloy clips and/or solids for processing in secondary smelter | since last assessment | Thursday | truckload | 30 days |
| 1-1-3 sows | ISRI Throb | since last assessment | Thursday | truckload | 30 days |
| Old cast | ISRI Tense | since last assessment | Thursday | truckload | 30 days |
| Old sheet | ISRI Taint/tabor | since last assessment | Thursday | truckload | 30 days |
| Painted siding | ISRI Tale for processing in secondary smelter | since last assessment | Thursday | truckload | 30 days |
| Aluminum-copper radiators | ISRI Talk | since last assessment | Thursday | truckload | 30 days |
| Mixed 2000/7000 solids | ISRI Tough; Aluminum Association 2000 series, 7000 series | since last assessment | Thursday | truckload | 30 days |

| Assessment | Quality | Transacted/ transactable | Day of assessment | Quantity | Timing |
|--|--|-----------------------------|----------------------|-----------|---------|
| Mixed 2000/7000 turnings | ISRI: Tough; Aluminum Association 2000 series, 7000 series | since last assessment | Thursday | truckload | 30 days |
| High grade turnings | ISRI Telic; zinc max. 1.5% | since last assessment | Thursday | truckload | 30 days |
| Tweak and twitch - US (by truck to Indiana, Missouri, Wisconsin, Kentucky or Tennessee) | | | | | |
| Tweak | ISRI Tweak | since last assessment | Thursday | truckload | 30 days |
| Twitch | ISRI Twitch | since last assessment | Thursday | truckload | 30 days |
| Secondary alloy - US (by truck to Indiana, Missouri, Wisconsin, Kentucky or Tennessee) | | | | | |
| A380.1 | Aluminum Association A380.1 | since last assessment | Thursday | truckload | 30 days |
| 319.1 | Aluminum Association 319.1 | since last assessment | Thursday | truckload | 30 days |
| A356.1 | Aluminum Association A356.1 | since last assessment | Thursday | truckload | 30 days |
| A360.1 | Aluminum Association A360.1 | since last assessment | Thursday | truckload | 30 days |
| A413.1 | Aluminum Association A413.1 | since last assessment | Thursday | truckload | 30 days |
| B390 | Aluminum Association B390 | since last assessment | Thursday | truckload | 30 days |
| Scrap export prices | | | | | |
| Zorba cif China | See the Argus Metals International methodology | | | | |
| Taint/Tabor cif Asia port | See the Argus Metals International methodology | | | | |
| Taint/Tabor cif China | See the Argus Metals International methodology | | | | |
| Tense cif China | See the Argus Metals International methodology | | | | |

Copper and brass

Introduction

Argus Metal Prices publishes price assessments and market commentary on the US copper markets.

Basis of assessment

Assessments are for the named material meeting the lot size, timing and delivery criteria listed in the table below. Assessments are of the range in which repeatable trade took place or in which it could have taken place in the absence of transactions since the last assessment.

Notes

- Cathode premiums and cash spreads, which are assessed as:
 - US and Asia: a differential to the Comex current month (spot) copper settlement
 - Europe: a differential to LME official cash settlement
- Brass alloy copper next active month spread: the price of the copper component only, expressed as a differential to the

Comex next active month settlement (the nearest base contract month following the current delivery month).

- Brass alloy copper cash spread: the price of the copper component only, expressed as a differential to the Comex current month (spot) settlement.
- Brass alloy zinc cash spread: the price of the zinc component only, expressed as a differential to the LME official current month (spot) settlement.

Timing of assessment

Prices are assessed and published weekly on the day specified in the table below. Market information received after 4pm Houston time on the day of assessment may not be included in the assessment process.

Rounding

Assessments are published to up to four decimal places, ending in 0 or 5.

Copper and brass specifications

| Assessment | Quality | Transacted/ transactable | Day of assessment | Quantity | Timing | Basis |
|--|--|-----------------------------|----------------------|-----------|---------|--------------------------|
| Copper cathode premiums | | | | | | |
| Grade A del US midwest | ASTM B115-00 | since last assessment | Wednesday | 38,000lbs | 30 days | del Iowa, Illinois, Ohio |
| Grade A transaction | calculated as the Comex copper spot settlement + the Argus grade A del US midwest price assessment | | | | | |
| Grade A in-warehouse Rotterdam | See the Argus Metals International methodology | | | | | |
| Copper and brass scrap - delivered US | | | | | | |
| Bare bright cash spread | ISRI Barley | since last assessment | Wednesday | 38,000lbs | 30 days | del US |
| Bare bright transaction | calculated as the Comex copper spot settlement + the Argus bare bright cash spread assessment | | | | | |
| Bare bright next active month spread | ISRI Barley | since last assessment | Wednesday | 38,000lbs | 30 days | del US |
| #1 wire and tube cash spread | ISRI Berry/Candy | since last assessment | Wednesday | 38,000lbs | 30 days | del US |
| #1 wire and tube transaction | calculated as the Comex copper spot settlement + the Argus #1 wire and tube cash spread assessment | | | | | |
| #1 wire and tube next active month spread | ISRI Berry/Candy | since last assessment | Wednesday | 38,000lbs | 30 days | del US |
| Brass scrap radiators | ISRI Ocean | since last assessment | Wednesday | 38,000lbs | 30 days | del US |
| Brass scrap red brass solids | ISRI Ebony | since last assessment | Wednesday | 38,000lbs | 30 days | del US |
| Brass scrap 360 rod borings | ISRI Niche, CDA: C36000 alloy scrap | since last assessment | Wednesday | 38,000lbs | 30 days | del US |
| Copper and brass scrap - cif Asia-Pacific | | | | | | |
| Bare bright cash spread | See the Argus Metals International methodology | | | | | |
| Bare bright next active month spread | See the Argus Metals International methodology | | | | | |
| #1 wire and tube cash spread | See the Argus Metals International methodology | | | | | |
| #1 wire and tube next active month spread | See the Argus Metals International methodology | | | | | |
| #2 copper cash spread | See the Argus Metals International methodology | | | | | |
| #2 copper transaction | See the Argus Metals International methodology | | | | | |
| #2 copper next active month spread | See the Argus Metals International methodology | | | | | |
| Copper scrap motors | See the Argus Metals International methodology | | | | | |
| Brass scrap yellow brass | See the Argus Metals International methodology | | | | | |
| Brass alloy C200-series scrap - delivered | | | | | | |
| C200-series copper cash spread | ISRI Label | since last assessment | Wednesday | 38,000lbs | 30 days | del US |
| C200-series copper next active spread | ISRI Label | since last assessment | Wednesday | 38,000lbs | 30 days | del US |
| C200-series zinc cash spread | ISRI Label | since last assessment | Wednesday | 38,000lbs | 30 days | del US |

| Assessment | Quality | Transacted/ transactable | Day of assessment | Quantity | Timing | Basis |
|---|---|-----------------------------|----------------------|-----------|---------|--------|
| C210 cash transaction | calculated as $(0.95 * (\text{Comex Copper spot settlement} + \text{the Argus C200-series copper cash spread assessment})) + (0.05 * (\text{LME Zinc cash price} + \text{the Argus C200-series zinc cash spread}))$ | | | | | |
| C220 cash transaction | calculated as $(0.9 * (\text{Comex Copper spot settlement} + \text{the Argus C200-series copper cash spread assessment})) + (0.1 * (\text{LME Zinc cash price} + \text{the Argus C200-series zinc cash spread}))$ | | | | | |
| C230 cash transaction | calculated as $(0.85 * (\text{Comex Copper spot settlement} + \text{the Argus C200-series copper cash spread assessment})) + (0.15 * (\text{LME Zinc cash price} + \text{the Argus C200-series zinc cash spread}))$ | | | | | |
| C240 cash transaction | calculated as $(0.8 * (\text{Comex Copper spot settlement} + \text{the Argus C200-series copper cash spread assessment})) + (0.2 * (\text{LME Zinc cash price} + \text{the Argus C200-series zinc cash spread}))$ | | | | | |
| C260 cash transaction | calculated as $(0.7 * (\text{Comex Copper spot settlement} + \text{the Argus Brass scrap C260 (70:30) cash spread assessment})) + (0.3 * \text{LME Zinc cash price})$ | | | | | |
| C270 cash transaction | calculated as $(0.65 * (\text{Comex Copper spot settlement} + \text{the Argus C200-series copper cash spread assessment})) + (0.35 * (\text{LME Zinc cash price} + \text{the Argus C200-series zinc cash spread}))$ | | | | | |
| Brass scrap 70:30 (C260) spread delivered Europe | See the Argus Metals International methodology | | | | | |
| Brass scrap 70:30 (C260) delivered Europe transaction | See the Argus Metals International methodology | | | | | |
| Brass/bronze alloy - delivered | | | | | | |
| C83600 | CDA C83600 | since last assessment | Thursday | truckload | 30 days | del US |
| C84400 | CDA C84400 | since last assessment | Thursday | truckload | 30 days | del US |
| C87300 | CDA C87300 | since last assessment | Thursday | truckload | 30 days | del US |
| C87500 | CDA C87500 | since last assessment | Thursday | truckload | 30 days | del US |
| C95800 | CDA C95800 | since last assessment | Thursday | truckload | 30 days | del US |
| C89833 | CDA C89833 | since last assessment | Thursday | truckload | 30 days | del US |
| C89836 | CDA C89836 | since last assessment | Thursday | truckload | 30 days | del US |

Minor metals

Introduction

Argus Metal Prices publishes price assessments and market commentary on the US minor metals markets.

Basis of assessment

Minor metals price assessments are for spot physical material for prompt delivery. Product specifications for each assessment, such as currency, unit of trade and quality, follow recognised industry standards, such as norms published by the Minor Metals Trade Association and other widely used specifications.

Fob US prices in-warehouse are inclusive of duties.

Assessments are of the range in which repeatable trade took place or in which it could have taken place in the absence of transactions since the last assessment.

Assessments are for material certified as conflict free using recognised traceability systems in compliance with relevant legislation, and delivered to the market through legal routes, with relevant export taxes paid.

Titanium scrap

Argus assesses titanium scrap collection prices typically paid by scrap dealers and processors to direct generators of the scrap such

as manufacturers, known as industrial generators. These assessments include the cost of delivering product to the dealer or processor.

Timing of assessment

Weekly prices are assessed and published weekly on Tuesday, except for electrolytic manganese and silicon, which are assessed and published weekly on Thursday. Monthly prices are assessed and published on the last publication day of each month. Market information received after 4pm Houston time on the day of assessment may not be included in the assessment process.

Rounding

Minor metals price assessments are published to up to two decimal places.

| Minor metals specifications | | | | | | | |
|--|--|--------|--------------|---------------|-------------------------|----------------------|--|
| Assessment | Grade | Basis | Quantity | Currency/unit | Timing | Assessment frequency | |
| Antimony | | | | | | | |
| min 99.65% cif US | antimony 99.65 minimum | fob US | 10t (+/-2%) | \$/lb | within 30 days of trade | weekly | |
| Arsenic | | | | | | | |
| min 99% fob US warehouse | arsenic 99% minimum | fob US | 1t (+/-2%) | \$/lb | within 30 days of trade | weekly | |
| Bismuth | | | | | | | |
| Ingot min 99.99% fob US warehouse | bismuth 99.99% minimum | fob US | 1t (+/-2%) | \$/lb | within 30 days of trade | weekly | |
| min 99.99% ex-works China | See the Argus Metals International methodology | | | | | | |
| Cadmium | | | | | | | |
| min 99.95% fob US warehouse | cadmium 99.95% minimum | fob US | 10t (+/-2%) | \$/lb | within 30 days of trade | weekly | |
| min 99.99% fob US warehouse | cadmium 99.99% minimum | fob US | 10t (+/-2%) | \$/lb | within 30 days of trade | weekly | |
| Cobalt | | | | | | | |
| min 99.3% fob US warehouse | cobalt 99.3% minimum | fob US | 1t (+/-2%) | \$/lb | within 30 days of trade | weekly | |
| min 99.8% fob US warehouse | cobalt 99.8% minimum | fob US | 1t (+/-2%) | \$/lb | within 30 days of trade | weekly | |
| Germanium | | | | | | | |
| Dioxide min 99.99% du Rotterdam | See the Argus Metals International methodology | | | | | | |
| Metal min 99.99% cif main airport | See the Argus Metals International methodology | | | | | | |
| Indium | | | | | | | |
| Ingot min 99.99% fob US warehouse | indium 99% minimum | fob US | 100kg | \$/kg | within 30 days of trade | weekly | |
| min 99.99% ex-works China | See the Argus Metals International methodology | | | | | | |
| Magnesium | | | | | | | |
| min 99.9% fob US warehouse | magnesium 99.9% minimum | fob US | 20t (+/-2%) | \$/t | within 30 days of trade | weekly | |
| Manganese | | | | | | | |
| Electrolytic metal min 99.7% fob US warehouse | manganese 99.7% minimum | fob US | 20t (+/-2%) | \$/lb | within 30 days of trade | weekly | |
| Ruthenium | | | | | | | |
| Ruthenium 99% fob US warehouse | ruthenium 99.9% minimum | fob US | 500kg | \$/ozt | within 30 day sof trade | monthly | |
| Silicon | | | | | | | |
| 5-5-3 min 98.5% Si fob US warehouse | silicon 98.5% minimum; iron 0.5%, aluminium 0.5%, and calcium 0.3% maximum | fob US | 25t (+/-2%) | \$/lb | within 30 days of trade | weekly | |
| 5-5-3 min 98.5% Si fob US warehouse 90 days | silicon 98.5% minimum; iron 0.5%, aluminium 0.5%, and calcium 0.3% maximum | fob US | 100t (+/-2%) | \$/lb | 90 days | weekly | |
| Selenium | | | | | | | |
| Dioxide min 99% ex-works China | See the Argus Metals International methodology | | | | | | |
| min 99.5% fob US warehouse | selenium 99.5% minimum | fob US | 500kg | \$/lb | within 30 days of trade | weekly | |
| Tellurium | | | | | | | |
| min 99.95% fob US warehouse | tellurium 99.95% minimum | fob US | 500kg | \$/kg | within 30 days of trade | weekly | |
| Tungsten | | | | | | | |
| Ammonium paratungstate (APT) du Rotterdam (per mtu of WO3) | See the Argus Metals International methodology | | | | | | |

| Minor metals specifications - monthly | | | | | | |
|---|--|--------|------------------|---------------|-------------------------|-------------------------------|
| Assessment | Grade | Basis | Quantity | Currency/unit | Timing | Assessment frequency |
| Chromium | | | | | | |
| Aluminothermic fob US warehouse | chromium 99% | fob US | 10t (+/-2%) | \$/lb | within 30 days of trade | monthly |
| Molybdenum | | | | | | |
| Scrap 99.7% airmelt del US consumer | molybdenum 99.7% | fob US | >2,000lbs | \$/lb | within 30 days of trade | monthly |
| Scrap 99.9% del US vacuum consumer | molybdenum 99.7% | fob US | >2,000lbs | \$/lb | within 30 days of trade | monthly |
| Nickel-Cobalt | | | | | | |
| Refinery scrap cobalt contained del US processor | price basis percentage of cobalt (min 99.3%) in scrap generated by a nickel-cobalt refinery | del US | 2,500lbs | \$/lb | within 30 days of trade | monthly, on day of assessment |
| Refinery scrap nickel contained del US processor | price basis percentage of nickel in scrap generated by a nickel-cobalt refinery, expressed as a discount or premium to LME official cash price | del US | 2,500lbs | \$/lb | within 30 days of trade | monthly, on day of assessment |
| Niobium | | | | | | |
| (Columbium) scrap vacuum del US consumer | niobium 99.9% minimum | del US | >2,000lbs | \$/lb | within 30 days of trade | monthly |
| (Columbium) scrap vacuum del US processor | niobium 99.9% minimum | del US | >2,000lbs | \$/lb | within 30 days of trade | monthly |
| Rhenium | | | | | | |
| 99.9% fob US warehouse | rhenium 99.9% minimum | fob US | >100lbs | \$/lb | within 30 days of trade | monthly |
| APR catalyst 69.4% fob US warehouse | rhenium contained 69.4% minimum | fob US | >100lbs | \$/lb | within 30 days of trade | monthly |
| Tantalum | | | | | | |
| scrap 99.9% vacuum melted del US consumer | tantalum 99.9% minimum; processed scrap | del US | >2,000lbs | \$/lb | within 30 days of trade | monthly |
| scrap 99.9% vacuum melted del US processor | tantalum 99.9% minimum; unprocessed scrap | del US | >2,000lbs | \$/lb | within 30 days of trade | monthly |
| Titanium | | | | | | |
| 6Al 4V ingot fob US producer | titanium 90% aluminium 6%, vanadium 4% | fob US | 11,000-18,500lbs | \$/lb | within 30 days of trade | monthly |
| Tungsten | | | | | | |
| 99.9%min Chinese bar del US consumer | tungsten 99.9% minimum | del US | 2,000-10,000lbs | \$/lb | within 30 days of trade | monthly |
| 99.9% scrap del US processor | tungsten 99.9% minimum; unprocessed scrap solids | del US | 1,000-3,000lbs | \$/lb | within 30 days of trade | monthly |
| 99.9% scrap solids consumer price fob US producer | tungsten 99.9% minimum; processed scrap solids | fob US | 1,000-3,000lbs | \$/lb | within 30 days of trade | monthly |
| Carbide scrap inserts fob US processor | tungsten 88%, cobalt 6%, carbon 6% | fob US | >2,000lbs | \$/lb | within 30 days of trade | monthly |
| Carbide scrap rounds fob US processor | tungsten 86-88%, cobalt 6-8%, carbon 6% | fob US | >2,000lbs | \$/lb | within 30 days of trade | monthly |

| Titanium scrap specifications | | | | | | |
|--|--|--------|----------|---------------|-------------------------|------------|
| Alloy | Grade | Basis | Quantity | Currency/unit | Timing | Assessment |
| Titanium scrap | | | | | | |
| 6Al 4V turnings aero quality del US dealer/processor | titanium 90%, aluminium 6%, vanadium 4%; turnings, unprocessed, 3% allowed oil/moisture/magnetics | del US | 3,000lb | \$/lb | within 30 days of trade | weekly |
| Scrap 6Al 4V bulk weldable del US dealer/processor | titanium 90%, aluminium 6%, vanadium 4%; bulk weldable scrap, unprocessed | del US | 1,000lb | \$/lb | within 30 days of trade | weekly |
| Scrap 6Al 4V clips del US dealer/processor | titanium 90%, aluminium 6%, vanadium 4%; scrap clips, unprocessed | del US | 3,000lb | \$/lb | within 30 days of trade | weekly |
| Scrap grade CP1 solids del US dealer/processor | titanium grade CP1 scrap solids, unprocessed | del US | 3,000lb | \$/lb | within 30 days of trade | weekly |
| Scrap grade CP2 solids del US dealer/processor | titanium grade CP2 scrap solids, unprocessed | del US | 3,000lb | \$/lb | within 30 days of trade | weekly |
| Scrap grade CP3/4 solids del US dealer/processor | titanium grade CP3/4 scrap solids, unprocessed | del US | 3,000lb | \$/lb | within 30 days of trade | weekly |
| Turnings min 85% Ti non-tin bearing, mixed del US dealer/processor | mixed turnings del US processor titanium 85% minimum; non-tin bearing turnings, unprocessed, maximum 0.5% tin, 3% allowed oil/moisture/magnetics | del US | 3,000lb | \$/lb | within 30 days of trade | weekly |
| Turnings min 85% Ti tin bearing, mixed del US dealer/processor | titanium 85% minimum; tin bearing turnings, unprocessed, maximum 2% tin, 3% allowed oil/moisture/magnetics | del US | 3,000lb | \$/lb | within 30 days of trade | weekly |

Nickel and zinc

Introduction

Argus Metal Prices publishes price assessments and market commentary on the US nickel and zinc markets.

Basis of assessment

Assessments are for the named material meeting the lot size, timing and delivery criteria listed in the table below. Assessments are of the range in which repeatable trade took place or in which it could have taken place in the absence of transactions since the last assessment.

Note

- Nickel cathode zinc premiums are assessed as a differential to the LME official cash price

Timing of assessment

Nickel prices are assessed and published weekly, on Thursday. Zinc prices are assessed and published weekly, on Monday. Market information received after 4pm Houston time on the day of assessment may not be included in the assessment process.

Rounding

Assessments are published to up to four decimal places, ending in 0 or 5.

Nickel and zinc specifications

| Assessment | Quality | Quantity | Currency/unit | Assessment frequency | Transacted/transactable | Timing | Basis |
|---|---|-----------|---------------|----------------------|-------------------------|---------|--------|
| Nickel cathode premiums - delivered US | | | | | | | |
| 4x4 inch (small lots) | nickel 99.8% minimum, 4x4inch cut cathodes, melting grade | 5,000lbs | \$/lb | weekly | since last assessment | 30 days | del US |
| 4x4 inch (truckloads) | nickel 99.8% minimum, 4x4inch cut cathodes, melting grade | truckload | \$/lb | weekly | since last assessment | 30 days | del US |
| 4x4 inch (truckloads) transaction | calculated as the LME zinc cash settlement + the Argus 4x4 inch (truckloads) price assessment | | | | | | |
| 1x1 inch (small lots) | nickel 99.8% minimum, 1x1inch cut cathodes, plating grade | 5,000lbs | \$/lb | weekly | since last assessment | 30 days | del US |
| 1x1 inch (truckloads) | nickel 99.8% minimum, 1x1inch cut cathodes, plating grade | truckload | \$/lb | weekly | since last assessment | 30 days | del US |
| Zinc | | | | | | | |
| Special high grade del US premium | LME Zinc | truckload | \$/lb | weekly | since last assessment | 30 days | del US |
| Special high grade del US transaction | calculated as the LME Zinc cash settlement + the Argus special high grade del US premium price assessment | | | | | | |
| Scrap old zinc diecast del US | ISRI: Saves | truckload | \$/lb | weekly | since last assessment | 30 days | del US |

Cupro-nickel and super alloys scrap

Argus Metal Prices publishes calculated prices for cupro-nickel and super alloys scrap.

Inconel 607 vacuum melted
 Inconel 625 vacuum melted
 Inconel 718 vacuum melted
 Waspaloy vacuum melted

Prices are calculated by weighting the price of component and feedstock metals according to formulas developed from collaboration with the industry. Prices are calculated only on those days when one or more component price has changed. Prices are expressed as a low-high range and in US dollars per pound (lb).

Cupro-nickel prices are assessed for

C70600 (90:10)
 C71500 (70:30)
 Monel 400 (R)

Super alloys prices are assessed for

Hastelloy C air melted
 Hastelloy X air melted
 Inconel 600 vacuum melted
 Inconel 601 vacuum melted