METHODOLOGY AND SPECIFICATIONS GUIDE

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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

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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 information 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 frrous 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-scribers, 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.

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.

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 published as a low-high range of prices that traded, or could have traded, 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	Minimum quantity	Timing	Measure
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
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			
Composite prices are calculated on Fridays as the average of prices published for the named material in the markets listed below. Composite prices are published as a single value.			
#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 based on the market as it traded, or could have traded, since the last assessment.

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.

Ferrous scrap specifications - del consumer

Assessment	Minimum quantity	Timing	Measure
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
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	**Minimum quantity**	**Timing**	**Measure**
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 proprietary formulae. These formulae are reviewed at least annually. 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 and delivery criteria listed in the table below. Assessments are published as a low-high range of prices that traded, or could have traded, 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.

US steel feedstock specifications

Assessment	Minimum quantity	Timing	Measure
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

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.

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 published as a low-high range of prices that traded, or could have traded, 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.

Rounding

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

Ferrous scrap freight specifications

Assessment	Modality	Lot size	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 published as a low-high range of prices that traded, or could have traded, 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 frist 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	Minimum lot size	Currency/ unit	Assessment frequency	Transacted/ transactable	Timing	Delivery
304 (18-8) solids del US processor	ISRI Sabot, unprocessed	truckload	$/lb	daily	on day of assessment	30 days	delivered continental US
304 (18-8) turnings del US processor	ISRI Ultra, unprocessed	truckload	$/lb	daily	on day of assessment	30 days	delivered continental US
316 solids del US processor	SSINA S31600 scrap clips/solids, unprocessed	truckload	$/lb	daily	on day of assessment	30 days	delivered continental US
316 turnings del US processor	SSINA S31600 turnings, unprocessed	truckload	$/lb	daily	on day of assessment	30 days	delivered continental US
409/410 solids del US processor	SSINA S40900/S41000 scrap clips/ solids, unprocessed	truckload	$/gross ton	weekly	since last assessment	30 days	delivered continental US
430 solids del US processor	SSINA S43000 scrap clips/solids, unprocessed	truckload	$/gross ton	weekly	since last assessment	30 days	delivered continental 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	delivered continental 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	delivered continental 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	delivered continental US
Molybdenum contained in 316 solids del US consumer	Molybdenum oxide in 316 scrap clips/ solids	truckload	$/lb	monthly	since last assessment	30 days	delivered continental US

Stainless steel coil specifications

Assessment	Quality	Minimum lot size	Currency/ unit	Assessment frequency	Transacted/ transactable	Timing	Delivery
301 flat rolled coil surcharge	SSINA S30100	truckload	$/lb	monthly	on day of assessment	30 days	fob continental US
304 flat rolled coil surcharge	SSINA S30400	truckload	$/lb	monthly	on day of assessment	30 days	fob continental US
316 flat rolled coil surcharge	SSINA S31600	truckload	$/lb	monthly	on day of assessment	30 days	fob continental US
301 flat rolled coil	SSINA S30100; gauge 7-14	truckload	$/lb	monthly	on day of assessment	30 days	fob continental US
304 flat rolled coil	SSINA S30400; gauge 7-14	truckload	$/lb	monthly	on day of assessment	30 days	fob continental US
316 flat rolled coil	SSINA S31600; gauge 7-14	truckload	$/lb	monthly	on day of assessment	30 days	fob continental 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.

Price assessments are published as low-high ranges.

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.

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	Lot size	Currency/weight	Form	Packaging	Timing	Assessement
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	Lot size	Currency/weight	Form	Packaging	Timing	Assessement
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
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 warehouse	Duty paid	25t (+/-2%)	$/t	Lumps	Bags of 1t	within 30 days of trade	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 meeting the lot size, timing and delivery criteria listed in the table below. Assessments are published as a low-high range of prices that traded, or could have traded, on the day or during the period shown.

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	Minimum lot size	Timing	Delivery
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	by truck
6061 billet	Aluminum Association 6061	on day of assessment	Wednesday	truckload	30 days	by truck
6063 billet	Aluminum Association 6063	on day of assessment	Wednesday	truckload	30 days	by truck
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	by truck
5052 clips	ISRI Tooth; Aluminum Association 5052	on day of assessment	Tuesday	truckload	30 days	by truck
Litho sheet	ISRI Tabloid	on day of assessment	Tuesday	truckload	30 days	by truck
MLC	ISRI Taboo; mixed low copper aluminum alloy clips and/or solids for processing in mill	on day of assessment	Tuesday	truckload	30 days	by truck
Painted siding	ISRI Tale for processing in mill	on day of assessment	Tuesday	truckload	30 days	by truck
6061 new, bare	Aluminum Association 6061, new bare extrusion scrap	on day of assessment	Tuesday	truckload	30 days	by truck
6061 truck wheels	ISRI Troma; Aluminum Association 6061; alloy truck wheels	on day of assessment	Tuesday	truckload	30 days	by truck
10/10 extrusions	ISRI Toto	on day of assessment	Tuesday	truckload	30 days	by truck
A356 wheels	ISRI Troma; Aluminum Association A356; alloy wheels	on day of assessment	Tuesday	truckload	30 days	by truck
6063 new, bare	ISRI Tata; Aluminum Association 6063; new bare extrusion	on day of assessment	Tuesday	truckload	30 days	by truck
EC wire	ISRI Talon; Electrical Conductor wire	on day of assessment	Tuesday	truckload	30 days	by truck
1100 & 3003 clips	ISRI Tooth; Aluminum Association 1100 and 3003	on day of assessment	Tuesday	truckload	30 days	by truck
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	by truck
1-1-3 sows	ISRI Throb	since last assessment	Thursday	truckload	30 days	by truck
Old cast	ISRI Tense	since last assessment	Thursday	truckload	30 days	by truck
Old sheet	ISRI Taint/tabor	since last assessment	Thursday	truckload	30 days	by truck
Painted siding	ISRI Tale for processing in secondary smelter	since last assessment	Thursday	truckload	30 days	by truck
Aluminum-copper radiators	ISRI Talk	since last assessment	Thursday	truckload	30 days	by truck
Mixed 2000/7000 solids	ISRI:Tough; Aluminum Association 2000 series, 7000 series	since last assessment	Thursday	truckload	30 days	by truck
Mixed 2000/7000 turnings	ISRI:Tough; Aluminum Association 2000 series, 7000 series	since last assessment	Thursday	truckload	30 days	by truck
High grade turnings	ISRI Telic; zinc max. 1.5%	since last assessment	Thursday	truckload	30 days	by truck

Assessment	Quality	Transacted/ transactable	Day of assessment	Minimum lot size	Timing	Delivery
Tweak and twitch - US (by truck to Indiana, Missouri, Wisconsin, Kentucky or Tennessee)						
Tweak	ISRI Tweak	since last assessment	Thursday	truckload	30 days	by truck
Twitch	ISRI Twitch	since last assessment	Thursday	truckload	30 days	by truck
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	by truck
319.1	Aluminum Association 319.1	since last assessment	Thursday	truckload	30 days	by truck
A356.1	Aluminum Association A356.1	since last assessment	Thursday	truckload	30 days	by truck
A360.1	Aluminum Association A360.1	since last assessment	Thursday	truckload	30 days	by truck
A413.1	Aluminum Association A413.1	since last assessment	Thursday	truckload	30 days	by truck
B390	Aluminum Association B390	since last assessment	Thursday	truckload	30 days	by truck
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 published as a low-high range of prices that traded, or could have traded, on the day or during the period shown.

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 price
  - Next active month spread: a differential to the Comex next active month contract (the nearest base contract month that is not the current delivery month).
  - Brass cash spread: the price of the copper component only, expressed as a differential to Comex 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	Minimum lot size	Timing	Delivery
Copper cathode premiums						
Grade A del US midwest	ASTM B115-00	since last assessment	Wednesday	38,000lbs	30 days	Iowa, Illinois, Ohio
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	Continental US
Bare bright next active month spread	ISRI Barley	since last assessment	Wednesday	38,000lbs	30 days	Continental US
#1 wire and tube cash spread	ISRI Berry/Candy	since last assessment	Wednesday	38,000lbs	30 days	Continental US
#1 wire and tube next active month spread	ISRI Berry/Candy	since last assessment	Wednesday	38,000lbs	30 days	Continental US
Brass scrap radiators	ISRI Ocean	since last assessment	Wednesday	38,000lbs	30 days	Continental US
Brass scrap red brass solids	ISRI Ebony	since last assessment	Wednesday	38,000lbs	30 days	Continental US
Brass scrap 360 rod borings	ISRI Niche, CDA: C36000 alloy scrap	since last assessment	Wednesday	38,000lbs	30 days	Continental 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 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 scrap spread - delivered						
C210 cash spread	ISRI Label, 94-96% copper	since last assessment	Wednesday	38,000lbs	30 days	Continental US
C220 cash spread	ISRI Label, 89-91% copper	since last assessment	Wednesday	38,000lbs	30 days	Continental US
C230 cash spread	ISRI Label, 84-86% copper	since last assessment	Wednesday	38,000lbs	30 days	Continental US
C240 cash spread	ISRI Label, 78.5 - 81.5% copper	since last assessment	Wednesday	38,000lbs	30 days	Continental US
C260 (70:30) cash spread	ISRI Label, 68.5- 71.5% copper	since last assessment	Wednesday	38,000lbs	30 days	Continental US
C270 cash spread	ISRI Label, 63-68.5% copper	since last assessment	Wednesday	38,000lbs	30 days	Continental US
Brass scrap 70:30 (C260) spread delivered Europe	See the Argus Metals International methodology					

Assessment	Quality	Transacted/ transactable	Day of assessment	Minimum lot size	Timing	Delivery
Brass/bronze alloy - delivered						
C83600	CDA C83600	since last assessment	Thursday	truckload	30 days	Continental US
C84400	CDA C84400	since last assessment	Thursday	truckload	30 days	Continental US
C87300	CDA C87300	since last assessment	Thursday	truckload	30 days	Continental US
C87500	CDA C87500	since last assessment	Thursday	truckload	30 days	Continental US
C95800	CDA C95800	since last assessment	Thursday	truckload	30 days	Continental US
C89833	CDA C89833	since last assessment	Thursday	truckload	30 days	Continental US
C89836	CDA C89836	since last assessment	Thursday	truckload	30 days	Continental 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.

Price assessments are published as low-high ranges.

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.

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. See below for a full list of product specifications.

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

Prices are assessed and published weekly, on Tuesday, except for electrolytic manganese and silicon, which 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

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

Minor metals specifications

Assessment	Grade	Basis	Location	Minimum lot size	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%)	$/t	within 30 days of trade	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	$/lb	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	Location	Minimum lot size	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%	del	US	>2,000lbs	$/lb	within 30 days of trade	monthly
Scrap 99.9% del US vacuum consumer	molybdenum 99.7%	del	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	delivered	continental 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 offical cash price	delivered	continental 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	delivered	US	>2,000lbs	$/lb	within 30 days of trade	monthly
(Columbium) scrap vacuum del US processor	niobium 99.9% minimum	delivered	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	delivered	US	>2,000lbs	$/lb	within 30 days of trade	monthly
scrap 99.9% vacuum melted del US processor	tantalum 99.9% minimum; unprocessed scrap	delivered	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	delivered	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	delivered	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	Lot size	Currency/ weight	Timing	Assessement
Titanium scrap						
6Al 4V turnings aero quality del US dealer/ processor	titanium 90%, aluminium 6%, vanadium 4%; turnings, unprocessed, 3% allowed oil/moisture/magnetics	delivered 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	delivered 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	delivered US	3,000lb	$/lb	within 30 days of trade	weekly
Scrap grade CP1 solids del US dealer/processor	titanium grade CP1 scrap solids, unprocessed	delivered US	3,000lb	$/lb	within 30 days of trade	weekly
Scrap grade CP2 solids del US dealer/processor	titanium grade CP2 scrap solids, unprocessed	delivered 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	delivered 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	delivered 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	delivered 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 published as a low-high range of prices that traded, or could have traded, on the day or during the period shown.

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	Minimum lot size	Currency/ unit	Assessment frequency	Transacted/ transactable	Timing	Delivery
Nickel cathode premiums - delivered US							
4x4inch (small lots)	nickel 99.8% minimum, 4x4inch cut cathodes, melting grade	5,000lbs	$/lb	weekly	since last assessment	30 days	delivered US
4x4inch (truckloads)	nickel 99.8% minimum, 4x4inch cut cathodes, melting grade	truckload	$/lb	weekly	since last assessment	30 days	delivered US
1x1inch (small lots)	nickel 99.8% minimum, 1x1inch cut cathodes, plating grade	5,000lbs	$/lb	weekly	since last assessment	30 days	delivered US
1x1inch (truckloads)	nickel 99.8% minimum, 1x1inch cut cathodes, plating grade	truckload	$/lb	weekly	since last assessment	30 days	delivered US
Zinc							
Special high grade del US premium	LME Zinc	truckload	$/lb	weekly	since last assessment	30 days	delivered continental US
Scrap old zinc diecast del US	ISRI: Saves	truckload	$/lb	weekly	since last assessment	30 days	delivered continental US

Cupro-nickel and super alloys scrap

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

Prices are calculated by weighting the price of component and feedstock metals according to proprietary formulae. These formulae are reviewed at least annually. 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
Inconel 607 vacuum melted
Inconel 625 vacuum melted
Inconel 718 vacuum melted
Waspaloy vacuum melted