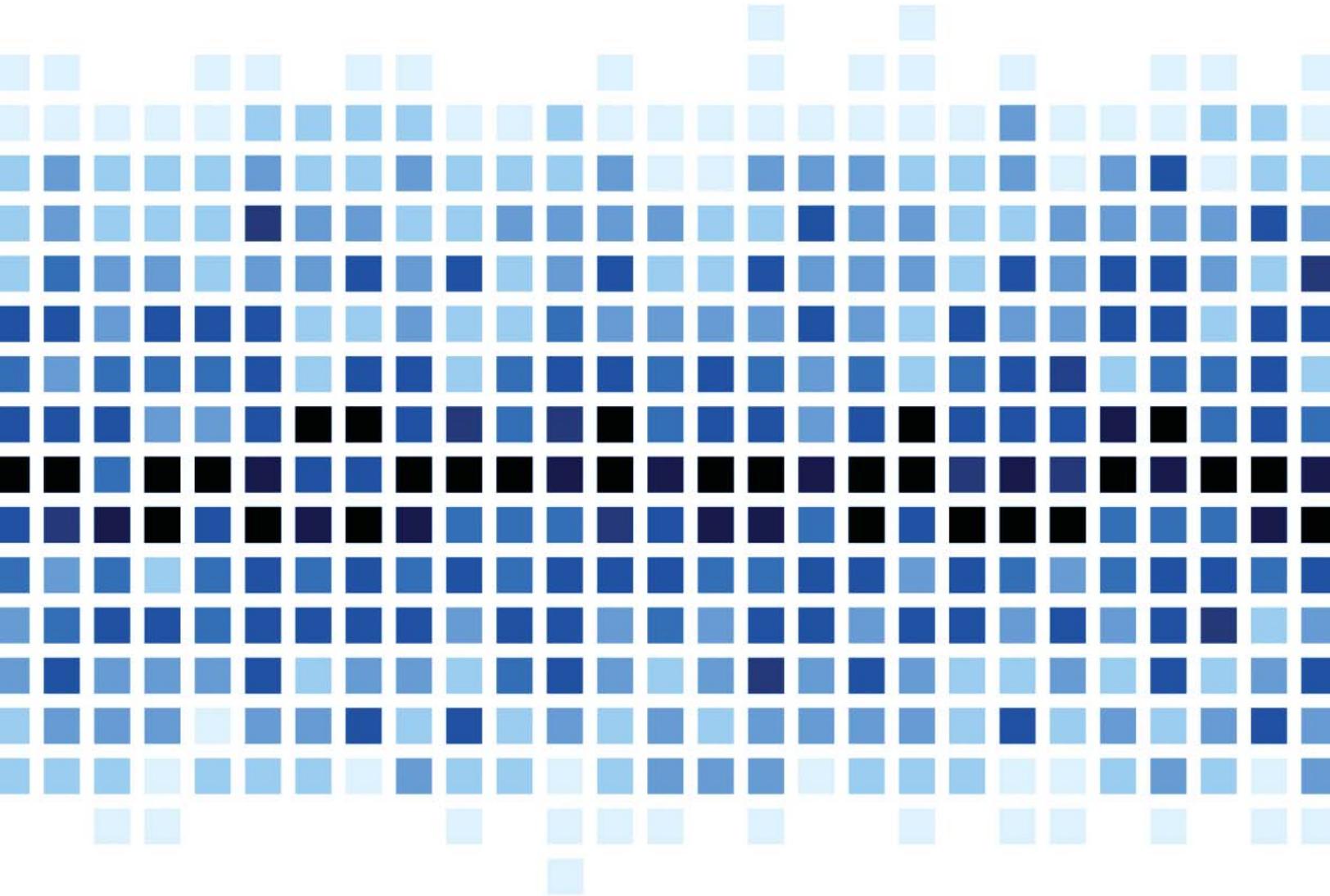


American Metal Market



A Quick Guide to AMM Pricing

American Metal Market is the leading independent price reporting agency in North America, and has been assessing metal prices since 1882. AMM is an impartial and independent PRA which engages with all sides of the market. Our editorial team follows a strict code of conduct and pricing procedures when assessing prices and calculating indices. All proprietary prices have transparent methodologies and price specifications for each price available online. AMM's pricing practices align with core IOSCO Principles for Price Reporting Agencies — a set of guidelines and best practices for price reporting promoted by the International Organization of Securities Commissions. Only a proper price reporting agency like AMM has the resources to collect the volume of data that should go into a truly representative price.

What We Do

American Metal Market publishes more than 1,400 proprietary metal prices including established benchmark prices trusted and used across the metals supply chain. In addition to proprietary prices, AMM also reports exchange prices for the London Metal Exchange, Nymex, Comex and Shanghai futures. (Separate data fees may apply.)

Referencing a price from AMM ensures continuity, consistency and transparency in all your financial transactions. Supporting and enforcing our commitment to pricing integrity is an auditable database that allows us to monitor, review and approve every step in the price assessment process including the gathering of market price data, the peer and editor sign-off, and finally the publishing of prices to our online database. AMM pricing is accessed through a variety of mechanisms negotiated as part of a license agreement.

Empower smart business decisions with the intelligence
of American Metal Market.



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AMM's Price Discovery Process

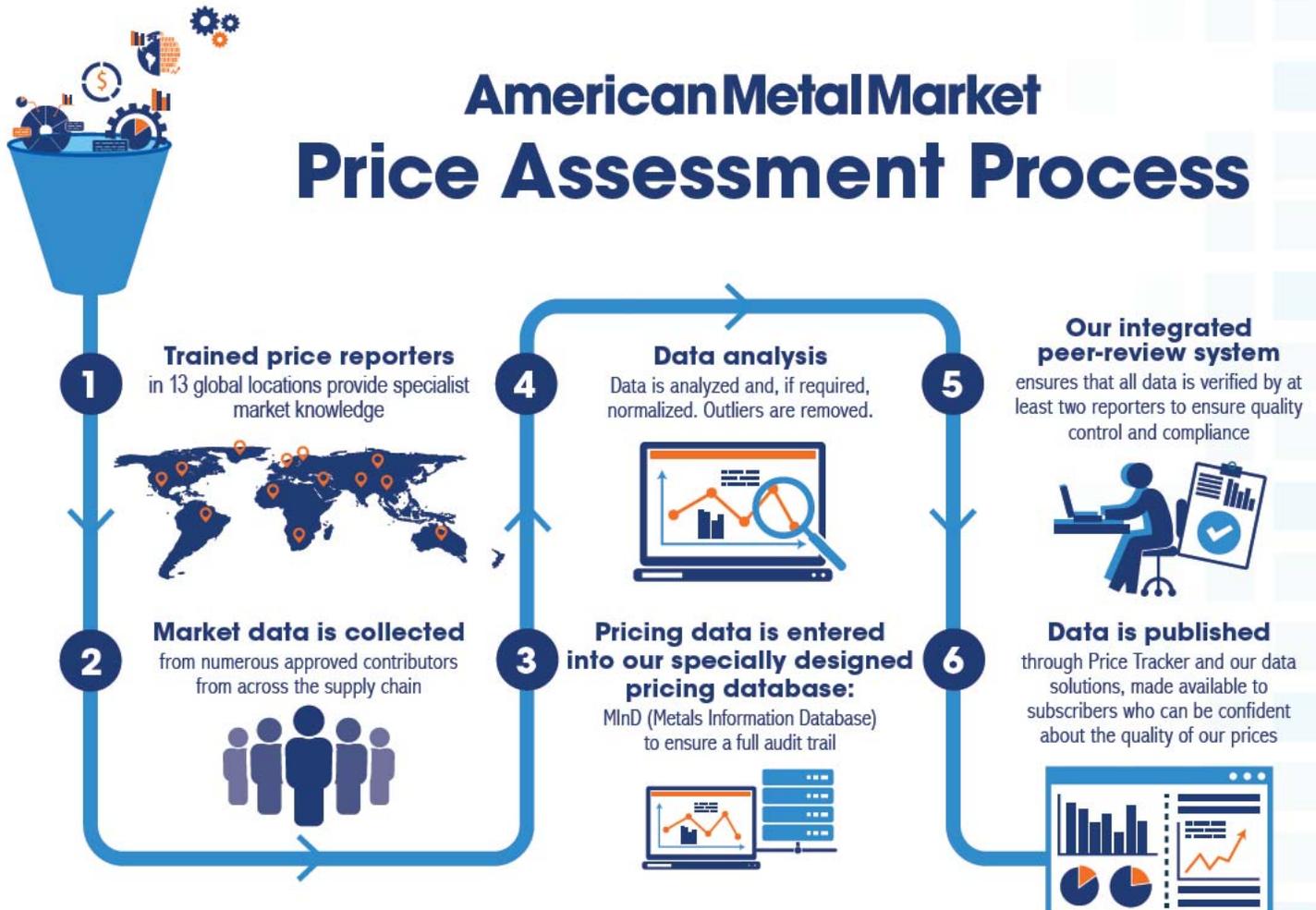
AMM produces independent, fair and representative price assessments for the metals market on a periodic basis, most often daily, weekly and monthly. All prices and assessments are based on regular contact with a wide variety of market participants, a group which is reviewed periodically by senior editors to ensure a balance of participants, buyers, sellers and others legitimately and actively involved in the marketplace.

AMM's trained price reporters are charged with speaking to a broad sample of market participants closely or specifically involved in the buying and selling of the metal of interest. The reporters' goal is to discover as many details as possible of all market activity including concluded business, made offers, and received bids or price quotes over a certain defined period – generally the period since the conclusion of the previous quotation.

Market data is usually collected via phone conversations and email exchanges with market participants; all the relevant pricing details are entered into the AMM pricing database and available for peer review. AMM follows industry convention for all price points, assessments and indexes. Reporters ensure that the information they receive matches these conventions.

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

At the end of a pricing session, AMM reporters will collate information received and review it before setting a



price or assessment. In some cases, it will set a price range (high and low), to reflect the spread of prices at which business has been transacted, offered or bid. In other cases it will specify as single number, midpoint, or index which is compiled from single numbers and/or ranges.

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

All price assessment inputs are gathered by reporters who cover that/those specific market(s). Prices are peer-reviewed and approved by a senior reporter or editor prior to publication. This thorough process ensures consistency in the application of the methodology for every AMM price.

A variety of data solutions deliver the published AMM prices to licensees who can have confidence in the quality of AMM data.

Methodology and Price Specification Review Process

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

For full Methodology and Price Specifications please visit amm.com/pricing/methodology

Code of Conduct

The Metal Bulletin Group's price reporters are required to abide by the company Code of Conduct that provides guidelines on important matters such as conflicts of interest, a gift and entertainment policy, personal account dealings, and pricing data confidentiality. Price reporters are also required to follow detailed methodologies and pricing procedures when assessing the market they cover.

For more details refer to the Metal Bulletin Group Code of Conduct: amm.com/pricing/methodology

Data Submitter Policy

Our reporters are always seeking to increase participation in the price discovery process and to add new data sources to provide pricing data as this makes our pricing more robust and transparent. As long as a potential source is an active market participant, buying and selling metals, they are welcome to take part in the AMM pricing process. AMM treats all communications of price, assessments, contract details and all other information as confidential and details are never shared with third parties.

For more information, please visit amm.com/pricing/methodology

AMM Material Price List

STEEL

Hot-rolled coil and sheet	Channels 8 x 11.5	Import OCTG - casing J/K55
Cold-rolled coil and sheet	Flat ½ x 4"	Seamless OCTG - casing N80
Hot-dipped galvanized	Cold-finished, 1" round, 1018 (carbon)	Import seamless OCTG - casing N80
Galvalume	Cold-finished, 1" round, 12L14 (carbon)	Seamless OCTG - casing L80
Electrogalvanized	Cold-finished, 1" round, 4140 (alloy)	Import seamless OCTG - casing L80
Aluminized (Type 1)	Hot-rolled (special bar quality), 1" round, 1000 series (carbon)	Seamless OCTG - casing P110
Motor Lamination	Hot-rolled (special bar quality), 1" round, 4100 series (alloy)	Import seamless OCTG - casing P110
Carbon Grade Cut-to-Length	Domestic hollow sections	Seamless linepipe
Carbon Grade Coiled	Welded mechanical tubing	Import seamless linepipe
Alloy Plate	ERW standard pipe A53 grade A	Seamless mechanical
Medium plate	Import standard pipe A53 grade A	Cold-drawn seamless mechanical
Heavy plate	ERW standard pipe A53 grade B	Mesh quality low carbon wire rod
Strip mill plates 48-inches	Import ERW standard pipe A53 grade B	Industrial quality low carbon wire rod
Strip mill plates 60-inches	Domestic ERW linepipe (X42)	High carbon wire rod
Strip mill plates 72-inches	Import ERW linepipe (X42)	Cold-heading quality wire rod
Reinforcing bar	OCTG - casing J/K55	Wire rod
Merchant bar		Medium sections
Angle 2 x 2 x ¼"		Steel beams W8x8
Angle 3 x 3 x ¼"		

STAINLESS STEEL

Coiled plate 304	Cold-rolled sheet 304L	Bar 416
Coiled plate 304L	Coiled plate 316L Bar 316	Bar 17Cr4Ni
Bar 304	Cold-rolled sheet 316L	
Cold-rolled sheet 304	Bar 303	

FERROUS SCRAP

No. 1 heavy melt	Cut structural/plate, 5' max.	Rerolling rails
No. 2 heavy melt	Foundry steel, 2' max.	Cut structural/plate, 5' max
No. 1 bundles	Cupola cast	Mixed cast
No. 2 bundles	Clean auto cast	Auto bodies
No. 1 busheling	Unstripped motor blocks	HMS 1&2 (80:20) East Coast (f.o.b. New York)
No. 1 industrial bundles	Heavy breakable cast	HMS 1&2 (80:20) West Coast (f.o.b. Los Angeles)
Shredded auto scrap	Drop broken machinery cast	Shredded Scrap East Coast (f.o.b. New York)
Machine shop turnings	Rail crops, 2' max.	
Cast iron borings	Random rails	
Cut structural/plate, 2' max.	Steel car wheels	
Cut structural/plate, 3' max.	Clean used densified cans	

STAINLESS STEEL SCRAP

304 new clips	316 solids, clips	430 new clips
304 solids, clips	409 bundles, solids	430 turnings
304 turnings	409 turnings	
316 clips and solids	430 bundles, solids	

FERROALLOYS

Chrome Ore lumpy 40-42%	Ferrochrome lumpy Cr charge, basis 52% Cr	Ferrovandium 70-80% V
Chrome Ore SA UG2 Met grade basis 42%	Ferromanganese, high carbon	Ferrovandium basis 78% min V
Chromium aluminothermic 99% min	Ferromanganese, medium carbon	Molybdenum canned molybdic oxide
Ferrochrome, high carbon	Ferromanganese, low carbon	Molybdenum concentrate 45% Mo
Ferrochrome, low carbon, 0.05%C-65% min Cr	Ferromanganese 78% Mn standard 7.5% C	Molybdenum Drummed molybdic oxide
Ferrochrome, low carbon, 0.10%C-62% min Cr	Ferromanganese basis 78% Mn Standard 7.5% C	Manganese Electrolytic Metal min 99.7%
Ferrochrome, low carbon, 0.15%C-60% min Cr	Ferromanganese min 65% Mn, max 7.0% C	Manganese ore Index 37% Mn
Ferrochrome 0.06% C max - 65% Cr	Ferromolybdenum	Manganese ore Index 44% Mn
Ferrochrome 0.10% C average 60-70% Cr	Ferromolybdenum 65/70% Mo	Silicomanganese 65% min Mn 16% min Si
Ferrochrome 6-8% C basis 60% Cr max. 1.5% Si	Ferromolybdenum basis 65% min Mo	Silicomanganese lumpy 65-75% Mn basis 15-19% Si
Ferrochrome 6-8% C basis 60-65% Cr max 2% Si	Ferrosilicon	Silicomanganese min 65% Mn max 17% Si
Ferrochrome 6-8% C, basis 50% Cr	Ferrosilicon Lumpy basis 75% Si	Silicon 98.5%
Ferrochrome 6-8% C, basis 50% Cr	Ferrosilicon min 75% Si, 7.5% C	Silicomanganese
Ferrochrome 8-9% C, basis 60% Cr	Ferrotitanium 68-72% Ti	Silicon metal
Ferrochrome chrome 50% Cr	Ferrotitanium 70% (max 4.5% Al)	Tungsten concentrate 65% W03
Ferrochrome Low phosphorous Cr min 65%, C max 7%, Si max 1%, P max 0.015%, Ti max 0.05%	Ferrotungsten basis 75% W	Tungsten Tungsten min 88.5% WO 3
	Ferrotungsten min 75% W	Vanadium pentoxide min 98%
	Ferrovandium	

NONFERROUS METALS

Aluminum P1020*	Copper cathode*	Titanium bar, alloy
Aluminum 6063 extrusion billet upcharge	Lead*	Titanium plate, commercially pure
Aluminum alloy C355 price	Magnesium price	Titanium sheet, commercially pure
Aluminum alloy A356.2 price	Nickel Tin Zinc Titanium	Zinc Special High Grade*
Aluminum 6061 (extrusion hom.) price	Nickel melting-grade premium	Zinc Nos. 3 and 7 die casting alloy*
Aluminum 6063 (extrusion hom.) price	Nickel melting material price	Zinc No. 5 die casting alloy*
Aluminum alloy A380.1 price	Nickel plating-grade premium	Zinc No. 2 die casting alloy*
Aluminum alloy 319.1 price	Nickel plating material price	Zinc-aluminum No. 8 foundry alloy*
Aluminum alloy 356.1 price	Tin grade A*	Zinc-aluminum No. 12 foundry alloy*
Aluminum alloy A360.1 price	Titanium sponge	Zinc-aluminum No. 27 foundry alloy*
Aluminum alloy A413.1	Titanium ingot	
	Titanium plate, alloy	

**Indicates both premium and price availability*

NONFERROUS SCRAP

No. 1 heavy copper and wire	Brass Ingot Makers' No. 1 bare bright	Aluminum-copper radiators
No. 2 heavy copper and wire	Brass Ingot Makers' No. 1	Nonferrous auto shred (90% aluminum)
Light copper	Brass Ingot Makers' No. 2	Heavy soft lead
Red brass solids	Brass Ingot Makers' light copper	Mixed hard lead
Red brass turnings, borings	Brass Ingot Makers' No. 1 comp. solids	Undrained, whole old batteries
Cocks and faucets	Brass Ingot Makers' comp., borings, turnings	Wheel weights
Brass pipe	Brass Ingot Makers' radiators	Scrap lead
Yellow brass solids	Brass Ingot Makers' yellow brass solids	Remelt lead
Mixed yellow brass turnings, borings	Mixed clips	Whole batteries
Yellow brass rod ends	Aluminum borings, turnings, clean and dry	Cable lead
Yellow brass rod turnings	Old aluminum, sheet and cast	New zinc die cast
70-30 brass clips	Used beverage cans	Old zinc die cast
Auto radiators (unsweated)	Industrial castings	Old zinc scrap
High-grade bronze gears	63S aluminum solids	Zinc die cast automotive grilles
High-grade low lead bronze	75S aluminum clips	New zinc clippings
Manganese bronze solids	75S borings, turnings, as is	Old zinc (clean)
Miscellaneous nickel-"silver" solids	Aluminum utensils	Galvanizers' dross
Manganese bronze turnings	Painted aluminum siding	New nickel clips and solids
Segregated low copper alloy clips: L 5052	Litho sheets	Nickel turnings
Segregated low copper alloy clips: 3105	Mixed high copper clips	New nickel-copper alloy clips and solids
Mixed low copper alloy clips	Mixed high zinc clips	New nickel-copper alloy turnings and shavings
Segregated low copper alloy clips	1-1-3 sows	Nickel-copper alloy castings
Brass mill No. 1 copper	Painted siding	Nickel-chrome-iron alloy solids
Refiners' copper No. 1	Turnings, clean and dry, high grade	Mixed low copper clips
Refiners' copper No. 2	Turnings, clean and dry, mixed grade	

AMM Scrap Prices are assessed at the following cities (where applicable)

Alabama	Detroit	Seattle/Portland
Arkansas/Tennessee Border	Houston	St. Louis
Atlanta	Los Angeles	South Carolina
Boston	New York	Youngstown
Buffalo	North Carolina/Virginia	Hamilton, Ontario
Chicago	Philadelphia	Montreal
Cincinnati	Pittsburgh	Toronto
Cleveland	San Francisco	Composites

Exchange Prices

NEW YORK FUTURES

Comex Copper

Comex Silver

NYMEX Palladium

Comex Gold

NYMEX Platinum

NYMEX Natural Gas

SHANGHAI FUTURES

Aluminium daily close

Copper daily close

Lead daily close

Zinc daily close

LME*

Aluminum Alloy

Copper

North American Special Aluminum
Alloy Contract (NASAAC)

Aluminum

Lead

Steel Billet

Aluminum Alloy Nasaac

Molybdenum

Zinc

Cobalt

Nickel

**LME prices are shown as official, unofficial, by 3 Months, Cash, Dec 1, Dec 2, Dec 3 where applicable to materials*

The **Metal Bulletin Group** aims to provide leading pricing intelligence, including independent industry benchmarks, for the metals and mining industry. The group's global portfolio of news, analysis, conferences and insight services complement these price benchmarks.

American MetalMarket

American Metal Market - The original metals price reporting agency since 1882 with more than 1,400 proprietary price assessments in 25 regions across North America.

MetalBulletin

Metal Bulletin - Global price reporting agency with over 950 proprietary price assessments covering every major trade region.



Industrial Minerals - From mine to market: global non-metallic minerals intelligence.

American MetalMarket EVENTS

American Metal Market Events - Delivering conferences and exhibitions for the ferrous and non-ferrous metals industries for more than 30 years.

MetalBulletin Research

Metal Bulletin Research - The world's leading independent provider of market analysis and forecasts for the global metals and mining industry.

scrapprice bulletin

Scrap Price Bulletin - The source for steel and iron scrap prices for scrap brokers, generators, distributors and manufacturers with weekly assessments for scrap prices in 18 major markets across North America.



FastMarkets - Providing real-time exchange pricing, news, physicals and pricing tools through a powerful data-delivery platform fully configurable displays that work on desktops, tablets and smartphones.

The Metal Bulletin Group is part of Euromoney Institutional Investor PLC, an international business-to-business information company focusing on the global financial community.

The Euromoney group provides an extensive portfolio of financial and business information, investment research and macroeconomic data, delivered largely in digital format on a yearly subscription basis.

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