

# Specifications Guide

## Global Nonferrous Metals

Latest update: September 2023

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## Definitions of the trading locations for which Platts publishes indexes or assessments

The following specifications guide contains the primary specifications for S&P Global Commodity Insights' Platts nonferrous metals assessments throughout the world. All assessments listed here employ Platts Assessments Methodology, as published at [https://www.spglobal.com/commodityinsights/plattscontent/\\_assets/\\_files/en/our-methodology/methodology-specifications/platts-assessments-methodology-guide.pdf](https://www.spglobal.com/commodityinsights/plattscontent/_assets/_files/en/our-methodology/methodology-specifications/platts-assessments-methodology-guide.pdf).

These guides are designed to give Platts subscribers as much information as possible about a wide range of methodology and specification questions.

This guide is current at the time of publication. Platts may issue further updates and enhancements to this guide and will announce these to subscribers through its usual publications of record. Such updates will be included in the next version of this guide. Platts editorial staff and managers are available to provide guidance when assessment issues require clarification.

**Platts nonferrous metals price assessments are timestamped; the time and location are noted below unless otherwise stated in the specification:**

**Asia:** 4:30 pm Singapore time

**Asia alumina:** 5:30 pm Singapore time

**US:** 4:30 pm US Eastern time

**US aluminum:** 4:00 pm US Eastern time

**Mexico:** 4:30 pm US Eastern time

**Brazil:** 4:00 pm Brazil time

**Europe:** 4:30 pm London time

More information on the Platts price assessment publication schedule can be found here: [Pricing Holiday Schedule | S&P Global Commodity Insights \(spglobal.com\)](#).

**Aluminum chain**

Assessment	Code	Mavg	Wavg	Qavg	Yavg	Type	Published	Page	Quality	Quantity	Dimensions	Incoterms	Location	Timing	Payment	UOM
<b>Alumina</b>																
Alumina FOB Australia	MMWAU00	MMWAU03	MMWAU04		MMWAU16	Assessment	Daily	PMA05	Sandy calcined Metallurgical / Smelter Grade Alumina (SGA)	30,000 mt and 35,000 mt bulk	max 12%-45 microns, min 88% +45 microns	FOB	Kwinana, Bunbury	Shipment 14-60 days	LC 30 days, BL 30 days	\$/mt
Alumina FOB Brazil differential to FOB Australia	MMWAD04	MMWAD03			MMWAD16	Assessment	Thursday	PMA05	Sandy calcined Metallurgical / Smelter Grade Alumina (SGA)	30,000 mt and 35,000 mt	max 12%-45 microns, min 88% +45 microns	FOB	Vila do Conde, Sao Luis	Shipment 14-60 days	LC 30 days, BL 30 days	\$/mt
Alumina Ex-Works China Yuan/mt	MMXCY00	MMXCY03	MMXCY04			Assessment	Daily	PMA05	Smelter Grade Alumina, which meets the latest Chinese official industrial standard under code GB/T24487-2009. Aluminum Oxide (Al2O3) content of minimum 98.4%.	Min 1,000 mt	Bags of 1.5 mt each.	Ex-works	Shanxi	Loading within 7 days	Cash	Yuan/mt
Alumina Ex-Works China	MMXWC00	MMXWC03	MMXWC04		MMXWC16	Calculation	Daily	PMA05	Smelter Grade Alumina, which meets the latest Chinese official industrial standard under code GB/T24487-2009. Aluminum Oxide (Al2O3) content of minimum 98.4%.	Min 1,000 mt	Bags of 1.5 mt each.	Ex-works	Shanxi	Loading within 7 days	Cash	\$/mt
Alumina CIF China	MMALZ00	MMALZ03	MMALZ04		MMALZ16	Calculation	Daily	PMA05	Sandy calcined Metallurgical / Smelter Grade Alumina (SGA)	30,000 mt and 35,000 mt bulk	max 12%-45 microns, min 88% +45 microns	CIF	Lianyungang	Shipment 14-60 days	LC 30 days, BL 30 days	\$/mt
Alumina CIF China Yuan/mt	MMACA00	MMACA03				Calculation	Daily	PMA05	Sandy calcined Metallurgical / Smelter Grade Alumina (SGA)	30,000 mt and 35,000 mt bulk	Sponge form, excluding shot coke	CIF	Lianyungang	Shipment 14-60 days	LC 30 days, BL 30 days	Yuan/mt
<b>Calcined Petcoke</b>																
Calcined Pet Coke FOB US Gulf Coast	MMXEVO0					Assessment	Monthly	PMA054	Anode-grade calcined petroleum coke: Sulfur 2.5-3%, Vanadium 300-400 ppm, Nickel max 250 ppm, Iron max 300 ppm, Silicon max 250 ppm, Calcium max 150 ppm, Sodium max 120 ppm, Ash max 0.50%, VBD 0.85-0.87 g/cc (ASTM scale).	10,000 mt to 15,000 mt	Sponge form, excluding shot coke	FOB	US Gulf ports	Loading 30-60 days forward	Net 30-60 days after B/L	\$/mt
<b>Aluminum</b>																
<b>US</b>																
US Aluminum Transaction Premium	MMAKE00	MMAKE03	AADDJ00		MMAKE16	Assessment	Daily	PMA0413	Min 99.7% high-grade P1020A (LME spec, max 0.1% Si, 0.2% Fe, 0.03% zinc, 0.04% gallium, 0.03% vanadium)	min full 45,000 lb truckloads, typical 100-1,000 mt	ingot, low-profile sow or T-bars	DDP, delivery by truck or rail	Midwest consumer works	within 7-30 days	Net 30 days	Cents/lb
US Alum Transaction Premium \$/mt (conversion)	MMATP00	MMATP03	MMATP04			Calculation	Daily	PMA0413	Min 99.7% high-grade P1020A	min full 45,000 lb truckloads, typical 100-1,000 mt	ingot, low-profile sow or T-bars	DDP, delivery by truck or rail	Midwest consumer works	within 7-30 days	Net 30 days	\$/mt

**Aluminum chain**

Assessment	Code	Mavg	Wavg	Qavg	Yavg	Type	Published	Page	Quality	Quantity	Dimensions	Incoterms	Location	Timing	Payment	UOM
Aluminum US Market (All-in)	MMAAE00	MMAAE03	MMAAE04		MMAAE16	Assessment	Daily	PMA0413	Min 99.7% high-grade P1020A	min full 45,000 lb truckloads, typical 100-1,000 mt	ingot, low-profile sow or T-bars	DDP, delivery by truck or rail	Midwest consumer works	within 7-30 days	Net 30 days	Cents/lb
Aluminum US Transaction (All-in)	MMAAF10	MMAAF02	MMAAF01		MMAAF16	Assessment	Daily	PMA0413	Min 99.7% high-grade P1020A	min full 45,000 lb truckloads, typical 100-1,000 mt	ingot, low-profile sow or T-bars	DDP, delivery by truck or rail	Midwest consumer works	within 7-30 days	Net 30 days	Cents/lb
Aluminum US All-in (Basis CME)	ALINA00	ALINA03				Calculation	Daily	PMA0413	Min 99.7% high-grade P1020A	min full 45,000 lb truckloads, typical 100-1,000 mt	ingot, low-profile sow or T-bars	DDP, delivery by truck or rail	Midwest consumer works	within 7-30 days	Net 30 days	Cents/lb
Aluminum US All-in (Basis CME) \$/mt (conversion)	ALINB00	ALINB03				Calculation	Daily	PMA0413	Min 99.7% high-grade P1020A	min full 45,000 lb truckloads, typical 100-1,000 mt	ingot, low-profile sow or T-bars	DDP, delivery by truck or rail	Midwest consumer works	within 7-30 days	Net 30 days	\$/mt
US Aluminum Net-Cash Premium	MMACN00	MMACN03	MMACN04		MMACN16	Assessment	Daily	PMA0413	Min 99.7% high-grade P1020A	min full 45,000 lb truckloads, typical 100-1,000 mt	ingot, low-profile sow or T-bars	DDP, delivery by truck or rail	Midwest consumer works	within 7-30 days	Net cash	Cents/lb
Aluminum P1020 US Import Duty cents/lb	MMOEU00	MMOEU03	MMOEU04		MMOEU16	Calculation	Daily	PMA0413	Min 99.7% high-grade P1020A		ingot, low-profile sow or T-bars					Cents/lb
Aluminum P1020 US Import Duty \$/mt	MMOHU00	MMOHU03	MMOHU04		MMOHU16	Calculation	Daily	N/A	Min 99.7% high-grade P1020A		ingot, low-profile sow or T-bars					\$/mt
Aluminum P1020 MW US Transaction Premium (Implied Duty-Unpaid) delivered US Midwest	MMOFU00	MMOFU03	MMOFU04		MMOFU16	Calculation	Daily	PMA0413	Min 99.7% high-grade P1020A	min full 45,000 lb truckloads, typical 100-1,000 mt	ingot, low-profile sow or T-bars	DDU	Midwest consumer works	within 7-30 days	Net 30 days	Cents/lb
Aluminum P1020 MW US Transaction Premium (Implied Duty-Unpaid) delivered US Midwest \$/mt	MMOIU00	MMOIU03	MMOIU04		MMOIU16	Calculation	Daily	N/A	Min 99.7% high-grade P1020A	min full 45,000 lb truckloads, typical 100-1,000 mt	ingot, low-profile sow or T-bars	DDU	Midwest consumer works	within 7-30 days	Net 30 days	\$/mt
Aluminum P1020 Transaction Price (Implied Duty-Unpaid) delivered US Midwest	MMOGU00	MMOGU03	MMOGU04		MMOGU16	Calculation	Daily	PMA0413	Min 99.7% high-grade P1020A	min full 45,000 lb truckloads, typical 100-1,000 mt	ingot, low-profile sow or T-bars	DDU	Midwest consumer works	within 7-30 days	Net 30 days	Cents/lb
Aluminum P1020 Transaction Price (Implied Duty-Unpaid) delivered US Midwest \$/mt	MMOJU00	MMOJU03	MMOJU04		MMOJU16	Calculation	Daily	N/A	Min 99.7% high-grade P1020A	min full 45,000 lb truckloads, typical 100-1,000 mt	ingot, low-profile sow or T-bars	DDU	Midwest consumer works	within 7-30 days	Net 30 days	\$/mt
Aluminum US P1020 Duty Freight Factor cents/lb	AFLSB00					Calculation	Daily	PMA0413	Min 99.7% high-grade P1020A							Cents/lb

**Aluminum chain**

Assessment	Code	Mavg	Wavg	Qavg	Yavg	Type	Published	Page	Quality	Quantity	Dimensions	Incoterms	Location	Timing	Payment	UOM
Aluminum US P1020 Duty Freight Factor \$/mt	<b>AFLSA00</b>					Assessment	Daily	<b>PMA0413</b>	Min 99.7% high-grade P1020A							\$/mt
Aluminum CIF New Orleans duty-unpaid premium	<b>MMODU00</b>	<b>MMODU03</b>	<b>MMODU04</b>		<b>MMODU16</b>	Assessment	Daily	<b>PMA0413</b>	Min 99.7% high-grade P1020A	1,000 mt to 30,000 mt, normalized to 10,000 mt	ingot, low-profile sow or T-bars	CIF, free out, duty-unpaid	New Orleans	Arrival 30-60 days	Cash against documents	\$/mt
Aluminum CIF New Orleans duty-unpaid premium cents/lb	<b>MMNDU00</b>	<b>MMNDU03</b>	<b>MMNDU04</b>		<b>MMNDU16</b>	Calculation	Daily	<b>PMA0413</b>	Min 99.7% high-grade P1020A	1,000 mt to 30,000 mt, normalized to 10,000 mt	ingot, low-profile sow or T-bars	CIF, free out, duty-unpaid	New Orleans	Arrival 30-60 days	Cash against documents	Cents/lb
Aluminum CIF NOLA-MW premium differential cents/lb	<b>MMNOL00</b>	<b>MMNOL03</b>	<b>MMNOL04</b>		<b>MMNOL16</b>	Calculation	Daily	<b>PMA0413</b>	Min 99.7% high-grade P1020A	1,000 mt to 30,000 mt, normalized to 10,000 mt	ingot, low-profile sow or T-bars	CIF, free out, duty-unpaid	New Orleans	Arrival 30-60 days	Cash against documents	Cents/lb
Aluminum 6 Month P1020 Ingot (Premium)	<b>MMANJ04</b>					Assessment	Thursday	<b>PMA0413</b>	Min 99.7% high-grade P1020A	Min 25 mt	ingot, low-profile sow or T-bars	Delivered	US Midwest	6 months forward	Not specified	Cents/lb
Aluminum 6063 (Billet) Upcharge	<b>MMAKC00</b>	<b>AAMD000</b>			<b>AAMD016</b>	Assessment	Thursday	<b>PMA0413</b>	Primary, North American General Purpose 6063 billet, to Aluminum Assn. specifications	Min truckload	6063 billet, 7-8" diameter	Delivered	US Midwest	within 7-30 days	Net 30 days	Cents/lb

**Latin America**

Aluminum CIF Brazil premium duty-unpaid	<b>MMABP04</b>	<b>MMABP03</b>			<b>MMABP16</b>	Assessment	Friday	<b>PMA0017</b>	Min 99.7% high-grade P1020A	500-2,000 mt, 2,000 mt typical	standard ingot, sow and T-bars	CIF, duty-unpaid, excl VAT	Major Brazilian ports	within 30-60 days	Cash against documents	\$/mt
Aluminum DDP Southeast Brazil premium (low ICMS)	<b>MMABS04</b>	<b>MMABS03</b>			<b>MMABS16</b>	Assessment	Friday	<b>PMA0017</b>	Min 99.7% high-grade P1020A	25-500 mt, 100 mt typical	standard ingot, sow and T-bars	DDP excl VAT	Southeast Brazil	delivery within 30 days	Net 7 to net 10 days	\$/mt
Aluminum DDP Southeast Brazil premium (high ICMS)	<b>ABRAA04</b>	<b>ABRAA03</b>			<b>ABRAA16</b>	Assessment	Friday	<b>PMA0017</b>	Min 99.7% high-grade P1020A	25-500 mt, 100 mt typical	standard ingot, sow and T-bars	DDP excl VAT	Southeast Brazil	delivery within 30 days	Net 7 to net 10 days	\$/mt

**Europe**

Aluminum Good Western premium duty paid in-warehouse Rotterdam	<b>AALVE00</b>	<b>AALVH00</b>	<b>AALXJ00</b>		<b>AALVH16</b>	Assessment	Daily	<b>PMA421</b>	Min 99.7% high-grade P1020A	Typical 100-1,000 mt	ingot	IW	Rotterdam	Prompt	Net 30 days	\$/mt
Aluminum Good Western premium duty unpaid in-warehouse Rotterdam	<b>AALVI00</b>	<b>AALVK00</b>	<b>AALXK00</b>		<b>AALVK16</b>	Assessment	Daily	<b>PMA421</b>	Min 99.7% high-grade P1020A	Typical 100-1,000 mt	ingot	IW	Rotterdam	Prompt	Net 30 days	\$/mt
Low-carbon Aluminum Good Western premium duty paid in-warehouse Rotterdam	<b>LALVE00</b>	<b>LALVE03</b>	<b>LALVE04</b>		<b>LALVE16</b>	Assessment	Daily	<b>PMA421</b>	Min 99.7% high-grade P1020A	Typical 100-1,000 mt	ingot	IW	Rotterdam	Prompt	Net 30 days	\$/mt
Low-carbon Aluminum Good Western premium duty unpaid in-warehouse Rotterdam	<b>LALVI00</b>	<b>LALVI03</b>	<b>LALVI04</b>		<b>LALVI16</b>	Assessment	Daily	<b>PMA421</b>	Min 99.7% high-grade P1020A	Typical 100-1,000 mt	ingot	IW	Rotterdam	Prompt	Net 30 days	\$/mt

**Aluminum chain**

Assessment	Code	Mavg	Wavg	Qavg	Yavg	Type	Published	Page	Quality	Quantity	Dimensions	Incoterms	Location	Timing	Payment	UOM
Zero-carbon Aluminum Good Western premium duty paid in-warehouse Rotterdam	ZALVE00	ZALVE03	ZALVE04		ZALVE16	Calculation	Daily	PMA421	Min 99.7% high-grade P1020A	Typical 100-1,000 mt	ingot	IW	Rotterdam	Prompt	Net 30 days	\$/mt
Zero-carbon Aluminum Good Western premium duty unpaid in-warehouse Rotterdam	ZALVI00	ZALVI03	ZALVEI04		ZALVEI16	Calculation	Daily	PMA421	Min 99.7% high-grade P1020A	Typical 100-1,000 mt	ingot	IW	Rotterdam	Prompt	Net 30 days	\$/mt
Aluminum Billet DDP Italy	ABITA04	ABITA03	ABITC04	ABITA05	ABITA16	Assessment	Daily	PMA4310	6060/6063 billet	Min 50 mt	6060/6063 billet, 7-8" diameter	DDP	Italy	Within 60 days	Net 60 days	\$/mt
Aluminum Billet DDP Italy	ABITB04	ABITB03	ABITD04		ABITB16	Calculation	Daily	N/A	6060/6063 billet	Min 50 mt	6060/6063 billet, 7-8" diameter	DDP	Italy	Within 60 days	Net 60 days	Eur/mt
Low-Carbon Aluminum Billet DDP Italy	LCABI00	LCABI03	LCABI04		N/A	Assessment	Daily	PMA4310	6060/6063 billet	Min 50 mt	6060/6063 billet, 7-8" diameter	DDP	Italy	Within 60 days	Net 60 days	\$/mt
Low-Carbon Aluminum Billet DDP Italy	LCABJ00	LCABJ03	LCABJ04		N/A	Calculation	Daily	N/A	6060/6063 billet	Min 50 mt	6060/6063 billet, 7-8" diameter	DDP	Italy	Within 60 days	Net 60 days	Eur/mt
Aluminum Billet DDP Germany	ABGEA04	ABGEA03	ABGEC04	ABGEA05	ABGEA16	Assessment	Daily	PMA4310	6060/6063 billet	Min 50 mt	6060/6063 billet, 7-8" diameter	DDP	Germany	Within 60 days	Net 30 Days	\$/mt
Aluminum Billet DDP Germany	ABGEB04	ABGEB03	ABGED04		ABGEB16	Calculation	Daily	N/A	6060/6063 billet	Min 50 mt	6060/6063 billet, 7-8" diameter	DDP	Germany	Within 60 days	Net 30 Days	Eur/mt
Low-Carbon Aluminum Billet DDP Germany	LCABG00	LCABG03	LCABG04		N/A	Assessment	Daily	PMA4310	6060/6063 billet	Min 50 mt	6060/6063 billet, 7-8" diameter	DDP	Germany	Within 60 days	Net 30 Days	\$/mt
Low-Carbon Aluminum Billet DDP Germany	LCABH00	LCABH03	LCABH04		N/A	Calculation	Daily	N/A	6060/6063 billet	Min 50 mt	6060/6063 billet, 7-8" diameter	DDP	Germany	Within 60 days	Net 30 Days	Eur/mt

**Asia**

CIF Japan Spot Premium	MMAA00	AAMDP00	MMANB04		AAMDP16	Assessment	Daily	PMA107	P1020A: min 99.7% Al, max 0.1% Si, 0.2% Fe, 0.03% zinc, 0.04% gallium, 0.03% vanadium	Min 250 mt	25 kg ingot, sows, T-bars	CIF	Yokohama, Nagoya, Osaka	Loading 15-60 days forward	Cash against documents or cash within 3 days of B/L	\$/mt
CIF Japan Fixed Price Equivalent (All-in)	MMJAL00	MMJAL03				Calculation	Daily	PMA419	P1020A: min 99.7% Al, max 0.1% Si, 0.2% Fe, 0.03% zinc, 0.04% gallium, 0.03% vanadium	Min 250 mt	25 kg ingot, sows, T-bars	CIF	Yokohama, Nagoya, Osaka	Loading 15-60 days forward	Cash against documents or cash within 3 days of B/L	\$/mt
CIF Japan Forward Quarter Premium	AAFGA00	AAFGB00	AAFGA04			Assessment	Daily	PMA107	P1020A: min 99.7% Al, max 0.1% Si, 0.2% Fe, 0.03% zinc, 0.04% gallium, 0.03% vanadium	Min 500 mt	25 kg ingot, sows, T-bars	CIF	Yokohama, Nagoya, Osaka	Within calendar quarter	Cash against documents or cash within 3 days of B/L	\$/mt

### Aluminum chain

Assessment	Code	Mavg	Wavg	Qavg	Yavg	Type	Published	Page	Quality	Quantity	Dimensions	Incoterms	Location	Timing	Payment	UOM
CIF Japan Quarter Fixed Price Equivalent (All-in)	MMJAQ00	MMJAQ03				Calculation	Daily	PMA419	P1020A: min 99.7% Al, max 0.1% Si, 0.2% Fe, 0.03% zinc, 0.04% gallium, 0.03% vanadium	Min 500 mt	25 kg ingot, sows, T-bars	CIF	Yokohama, Nagoya, Osaka	Within calendar quarter	Cash against documents or cash within 3 days of B/L	\$/mt
CIF Main Asian Ports Spot Aluminum Premium	AAFGG00	AAFGG03				Assessment	Daily	PMA107	P1020A: min 99.7% Al, max 0.1% Si, 0.2% Fe, 0.03% zinc, 0.04% gallium, 0.03% vanadium	Minimum 200 mt	25 kg ingot, sows, T-bars	CIF	Incheon, South Korea	Loading 15-60 days forward	Cash against documents or cash within 3 days of B/L	\$/mt
CFR China Import Price (All-in)	MMBAB00	MMBAB03				Calculation	Daily	PMA107	P1020A: min 99.7% Al, max 0.1% Si, 0.2% Fe, 0.03% zinc, 0.04% gallium, 0.03% vanadium	Not specified	Not specified	CFR	China	Spot	Not specified	Yuan/mt
CFR China Import Price (All-in)	MMBAB00	MMBAB03				Calculation	Daily	PMA107	P1020A: min 99.7% Al, max 0.1% Si, 0.2% Fe, 0.03% zinc, 0.04% gallium, 0.03% vanadium	Not specified	Not specified	CFR	China	Spot	Not specified	Yuan/mt

Scrap

Assessment	Code	Mavg	Wavg	Yavg	Type	Published	Page	Quality	Quantity	Dimensions	Incoterms	Location	Timing	Payment	UOM	Conversion code \$/mt	Mavg conv.	Wavg conv.	Yavg conv.
US Aluminum Old Cast	AAFBJ00	AAFFN00	AAMOU00	AAFFN16	Assessment	Monday/Thursday	PMA0300	Less than 1% Mg and Zn, low Fe, low contamination; minimum recovery rate 92%	Full truckload	NA	Delivered	Midwest	Within 30 days	Net 30 days	Cents/lb	ALUAB00	ALUAB04	ALUAB03	ALUAB16
US Aluminum Old Sheet	AAFBL00	AAFB000	AAMOT00	AAFB016	Assessment	Monday/Thursday	PMA0300	Non-cast aluminum items for consumption by secondary aluminum smelters to meet ISRI "taint/tabor"	Full truckload	NA	Delivered	Midwest	Within 30 days	Net 30 days	Cents/lb	ALUAM00	ALUAM04	ALUAM03	ALUAM16
US Aluminum Mill-Grade Mixed Low Copper Clips (MLCCs)	AAFBP00	AAFBR00	AAMOQ00	AAFBR16	Assessment	Monday/Thursday	PMA0300	Mixed-low copper clips able to be consumed by aluminum rolling mills, 1000, 3000, 5000, 6000 series only	Full truckload	NA	Delivered	Midwest	Within 30 days	Net 30 days	Cents/lb	ALUAD00	ALUAD04	ALUAD03	ALUAD16
US Alum Smelter-Grade MLCCs	AAFBT00	AAFBV00	AAFBU00	AAFBV16	Assessment	Monday/Thursday	PMA0300	Mixed-low copper clips for consumption by secondary aluminum smelters, loose, bare, new, no contamination, free of 2000 and 7000 series	Full truckload	NA	Delivered	Midwest	Within 30 days	Net 30 days	Cents/lb	ALUAC00	ALUAC04	ALUAC03	ALUAC16
US Aluminum Turnings	AAFCA00	AAFCC00	AAMON00	AAFCC16	Assessment	Monday/Thursday	PMA0300	Machine and tooling scrap for consumption by secondary aluminum smelters; high grade, clean and dry	Full truckload	NA	Delivered	Midwest	Within 30 days	Net 30 days	Cents/lb	ALUAA00	ALUAA04	ALUAA03	ALUAA16
US Low Grade Auto Shreds	AASS000	AASS003	AASS004	AASS016	Assessment	Monday/Thursday	PMA0300	Auto shreds generated through an eddy currentbased or hand separation process, containing at least 90% metallics and not more than 4% zinc	Full truckload	NA	Delivered	Midwest	Within 30 days	Net 30 days	Cents/lb	ALUAE00	ALUAE04	ALUAE03	ALUAE16
US High Grade Auto Shreds	AASSP00	AASSP03	AASSP04	AASSP16	Assessment	Monday/Thursday	PMA0300	Auto shreds generated through a heavy mediabased separation process, containing at least 98% metallics and not more than 1% free zinc, to include material from the following suppliers: Huron Valley, Ferrous Processing/SLC Recycling and Fort Wayne OmniSource Corp	Full truckload	NA	Delivered	Midwest	Within 30 days	Net 30 days	Cents/lb	ALUAF00	ALUAF04	ALUAF03	ALUAF16
US Alum UBCs	AAFGD00	AAMDC00		AAMDC16	Assessment	Thursday	PMA0413	Baled used beverage cans, to meet ISRI "taldon" specification	Full truckload	NA	Delivered	Midwest	Within 30 days	Net 30 days	Cents/lb				



Scrap

Assessment	Code	Mavg	Wavg	Yavg	Type	Published	Page	Quality	Quantity	Dimensions	Incoterms	Location	Timing	Payment	UOM	Conversion code \$/mt	Mavg conv.	Wavg conv.	Yavg conv.
US Aluminum Painted Siding	AASNW02	AASNW03		AASNW16	Assessment	Thursday	PMA0413	Siding consisting of clean, low-copper aluminum siding scrap, painted one or two sides, free of plastic coating, iron, dirt, corrosion, fiber, foam or fiberglass backing or other non-metallic items	Full truckload	NA		Delivered Midwest	Within 30 days	Net 30 days	Cents/lb				
US Aluminum 6063 New Bare Extrusion Scrap Discount	AAFCE00	AAMCZ00		AAMCZ16	Assessment	Thursday	PMA0413	New bare 6063 extrusion scrap	Full truckload	NA		Delivered Midwest	Within 30 days	Net 30 days	Cents/lb				
US Aluminum 6063 New Bare Extrusion Scrap (All-in)	AAFCE00	AAXVZ03	AAXVZ04		Calculation	Daily	PMA0413	New bare 6063 extrusion scrap all-in value daily	Full truckload	NA		Delivered Midwest	Within 30 days	Net 30 days	Cents/lb				
US Aluminum 6022 New Bare Scrap Discount	AAXVM04	AAXVM03		AAXVM16	Assessment	Thursday	PMA0413	New bare 6022 aluminum sheet scrap	Full truckload	Min thickness of 0.050 inches. Free of punchings less than half-inch in diameter		Delivered Midwest	Within 30 days	Net 30 days	Cents/lb				
US Aluminum 6022 New Bare Scrap (All-in)	AAXVM00	AAXVX03	AAXVX04		Calculation	Daily	PMA0413	New bare 6022 aluminum sheet scrap all-in value	Full truckload	Min thickness of 0.050 inches. Free of punchings less than half-inch in diameter		Delivered Midwest	Within 30 days	Net 30 days	Cents/lb				
US Aluminum 5052 New Bare Scrap Discount	ABSDB04	ABSDB03		ABSDB16	Assessment	Thursday	PMA0413	New bare 5052 aluminum sheet scrap	Full truckload	Min thickness 0.015 inches (.38 mm). Free of punchings less than 1/2" (1.27 cm) in size.		Delivered Midwest	Within 30 days	Net 30 days	Cents/lb				

Scrap

Assessment	Code	Mavg	Wavg	Yavg	Type	Published	Page	Quality	Quantity	Dimensions	Incoterms	Location	Timing	Payment	UOM	Conversion code \$/mt	Mavg conv.	Wavg conv.	Yavg conv.
US Aluminum 5052 New Bare Scrap (All-in)	<a href="#">ABSDA00</a>	<a href="#">ABSDA03</a>	<a href="#">ABSDA04</a>		Calculation	Daily	<a href="#">PMA0413</a>	New bare 5052 aluminum sheet scrap	Full truckload	Min thickness 0.015 inches (.38 mm). Free of punchings less than 1/2" (1.27 cm) in size.	Delivered	Midwest	Within 30 days	Net 30 days	Cents/lb				
<b>Latin America</b>																			
Aluminum old cast delivered NE Mexico pesos/kg	<a href="#">AAXXA04</a>	<a href="#">AAXXA03</a>		<a href="#">AAXXA16</a>	Assessment	Thursday	<a href="#">PMA201</a>	Old cast aluminum scrap with up to 5% contamination, min 88% recovery	Full truckload, 20 mt	NA	Delivered	Northeast Mexico	Within 30 days	Net 30 days	Pesos/kg				
Aluminum old cast delivered NE Mexico cents/lb	<a href="#">AAXUA04</a>	<a href="#">AAXUA03</a>		<a href="#">AAXUA16</a>	Calculation	Thursday	<a href="#">PMA201</a>	Old cast aluminum scrap with up to 5% contamination, min 88% recovery	Full truckload, 20 mt	NA	Delivered	Northeast Mexico	Within 30 days	Net 30 days	Cents/lb				
Aluminum old sheet delivered NE Mexico pesos/kg	<a href="#">AAXXB04</a>	<a href="#">AAXXB03</a>		<a href="#">AAXXB16</a>	Assessment	Thursday	<a href="#">PMA201</a>	Non-cast aluminum scrap items for consumption by secondary aluminum smelters to meet ISRI "taint/tabor" grade, containing 2-3% Fe	Full truckload, 20 mt	NA	Delivered	Northeast Mexico	Within 30 days	Net 30 days	Pesos/kg				
Aluminum old sheet delivered NE Mexico cents/lb	<a href="#">AAXUB04</a>	<a href="#">AAXUB03</a>		<a href="#">AAXUB16</a>	Calculation	Thursday	<a href="#">PMA201</a>	Non-cast aluminum scrap items for consumption by secondary aluminum smelters to meet ISRI "taint/tabor" grade, containing 2-3% Fe	Full truckload, 20 mt	NA	Delivered	Northeast Mexico	Within 30 days	Net 30 days	Cents/lb				
Aluminum UBCs delivered NE Mexico pesos/kg	<a href="#">AAXXC04</a>	<a href="#">AAXXC03</a>		<a href="#">AAXXC16</a>	Assessment	Thursday	<a href="#">PMA201</a>	Baled used beverage cans, to meet ISRI "taldon" specification.	Full truckload, 20 mt	NA	Delivered	Northeast Mexico	Within 30 days	Net 30 days	Pesos/kg				
Aluminum UBCs delivered NE Mexico cents/lb	<a href="#">AAXUC04</a>	<a href="#">AAXUC03</a>		<a href="#">AAXUC16</a>	Calculation	Thursday	<a href="#">PMA201</a>	Baled used beverage cans, to meet ISRI "taldon" specification.	Full truckload, 20 mt	NA	Delivered	Northeast Mexico	Within 30 days	Net 30 days	Cents/lb				
Aluminum 6063 new bare scrap delivered NE Mexico pesos/kg	<a href="#">AAXXD04</a>	<a href="#">AAXXD03</a>		<a href="#">AAXXD16</a>	Assessment	Thursday	<a href="#">PMA201</a>	6063 new bare scrap, free of paint, may be anodized - may include press scrap with butts	Full truckload, 20 mt	NA	Delivered	Northeast Mexico	Within 30 days	Net 30 days	Pesos/kg				
Aluminum 6063 new bare scrap del NE Mexico cents/lb	<a href="#">AAXUD04</a>	<a href="#">AAXUD03</a>		<a href="#">AAXUD16</a>	Calculation	Thursday	<a href="#">PMA201</a>	6063 new bare scrap, free of paint, may be anodized - may include press scrap with butts	Full truckload, 20 mt	NA	Delivered	Northeast Mexico	Within 30 days	Net 30 days	Cents/lb				
Aluminum Cans Scrap Brazil Dom Prod FOT	<a href="#">SB01018</a>				Assessment	Monday	<a href="#">N/A</a>	Baled used beverage cans, to meet ISRI "taldon" specification	500-2,000 mt	NA	FOT	Southeast Brazil	2-4 weeks	At sight	Real/kg				

**Scrap**

Assessment	Code	Mavg	Wavg	Yavg	Type	Published	Page	Quality	Quantity	Dimensions	Incoterms	Location	Timing	Payment	UOM	Conversion code \$/mt	Mavg conv.	Wavg conv.	Yavg conv.
Aluminum Castings Brazil Dom Prod FOT	<b>SB01020</b>				Assessment	Monday	<b>N/A</b>	New, clean, uncoated and unpainted, low copper aluminum scrap of two or more alloys. Grease and oil not to total more than 1%	500-2,000 mt	NA	FOT	Southeast Brazil	2-4 weeks	At sight	Real/kg				
Aluminum Profile Extrusion Brazil Dom Prod FOT	<b>SB01022</b>				Assessment	Monday	<b>N/A</b>	New, clean, uncoated aluminum castings, forgings, and extrusions of one specified alloy only and to be free from sawings, stainless steel, zinc, iron, dirt, oil, grease and other non-metallic items	500-2,000 mt	NA	FOT	Southeast Brazil	2-4 weeks	At sight	Real/kg				

**Carbon-Accounted Aluminum Spreads**

US Aluminum MWT -A380 Spread	<b>ALUMB00</b>	<b>ALUMB03</b>			Calculation	Monday/Thursday	<b>PMA0300</b>	P1020A and A380 alloy			Delivered	Midwest	Within 30 days		Cents/lb				
US Aluminum MWT - Mill-MLCCs Spread	<b>ALUMC00</b>	<b>ALUMC03</b>			Calculation	Monday/Thursday	<b>PMA0300</b>	P1020A and scrap Mill-grade MLCCs			Delivered	Midwest	Within 30 days		Cents/lb				
US Aluminum MWT -UBCs Spread	<b>ALUMA04</b>	<b>ALUMA03</b>			Calculation	Thursday	<b>PMA0413</b>	P1020A and scrap UBCs			Delivered	Midwest	Within 30 days		Cents/lb				

Secondary alloys

Assessment	Code	Mavg	Wavg	Yavg	Type	Published	Page	Quality	Quantity	Dimensions	Incoterms	Location	Timing	Payment	UOM	Conversion code \$/mt	Mavg conv.	Wavg conv.	Yavg conv.
<b>US</b>																			
Aluminum A380 alloy	MMAAD00	MMAAD02	MMAAD01	MMAAD16	Assessment	Monday/Thursday	PMA0300	8-9.5% Si, 1% Fe, 3-4% Cu, 0.5% Mn, 0.1% Mg, 0.5% Ni, 2.9% Zn, 0.35% Sn	Full truckload	NA	Delivered	Midwest	Within 30 days	Net 30 to net 60 days	Cents/lb	ALUAL00	ALUAL04	ALUAL03	ALUAL16
Aluminum 319 alloy	MMAAC00	MMAAC02	MMAAC01	MMAAC16	Assessment	Monday/Thursday	PMA0300	5.5-6.5% Si, 0.8% Fe, 3-4% Cu, 0.50% Mn, 0.1% Mg, 0.35% Ni, 1% Zn, 0.25% Ti	Full truckload	NA	Delivered	Midwest	Within 30 days	Net 30 to net 60 days	Cents/lb	ALUAK00	ALUAK04	ALUAK03	ALUAK16
Aluminum 356 alloy	MMAAB00	MMAAB02	MMAAB01	MMAAB16	Assessment	Monday/Thursday	PMA0300	6.5-7.56% Si, 0.5% Fe, 0.25% Cu, 0.35% Mn, 0.25-0.45% Mg, 0.35% Zn, 0.25% Ti	Full truckload	NA	Delivered	Midwest	Within 30 days	Net 30 to net 60 days	Cents/lb	ALUAJ00	ALUAJ04	ALUAJ03	ALUAJ16
Aluminum F132 alloy	MMAAA00	MMAAA02	MMAAA01	MMAAA16	Assessment	Monday/Thursday	PMA0300	8.5-10% Si, 0.6% Fe, 2-4% Cu, 0.2% Mn, 0.9-1.3% Mg, 0.1% Ni, 1% Zn, 0.2% Ti	Full truckload	NA	Delivered	Midwest	Within 30 days	Net 30 to net 60 days	Cents/lb	ALUAH00	ALUAH04	ALUAH03	ALUAH16
Aluminum B390 alloy	FAALB00	FAALB03	FAALB04	FAALB16	Assessment	Monday/Thursday	PMA0300	16-18% Si, 1.3% Fe max, 4-5% Cu, 0.5% Mn, 0.45-0.65% Mg, 0.1% Ni, 1.4% Zn, 0.2% Ti	Full truckload	NA	Delivered	Midwest	Within 30 days	Net 30 to net 60 days	Cents/lb	ALUAG00	ALUAG04	ALUAG03	ALUAG16
Aluminum A413 alloy	MMWUS00	MMWUS03	MMWUS04	MMWUS16	Assessment	Monday/Thursday	PMA0300	11-13% Si, 1% Fe max, 0.6% max Cu, 0.35% Mn, 0.1% Mg, 0.5% Ni, 0.5% Zn, 0.15% Sn	Full truckload	NA	Delivered	Midwest	Within 30 days	Net 30 to net 60 days	Cents/lb	ALUAI00	ALUAI04	ALUAI03	ALUAI16
<b>Europe</b>																			
Aluminum Alloy 226 DDP Germany	AALVT00	AALVU00		AALVU16	Assessment	Friday	PMA4310	226 LME Grade - DIN standard 1676	Min 1 truckload	NA	DDP	Germany	Prompt	Net 30 days	Eur/mt				
Aluminum Alloy 231 DDP Germany	ABLVT04	ABLVT03		ABLVT16	Assessment	Friday	PMA4310	231 - DIN standard 1676	Min 1 truckload	NA	DDP	Germany	Prompt	Net 30 days	Eur/mt				
<b>Asia</b>																			
Aluminum ADC12 EXW China	AAVSI00	AAVSI03		AAVSI16	Calculation	Tuesday	PMA810	JIS standard	Min 25 mt	Not specified	EXW	China	Within 14 days	TT within 5 days	\$/mt				
Aluminum ADC12 EXW China Yuan/mt	AAVSI02	AAVSI13			Assessment	Tuesday	PMA810	JIS standard	Min 25 mt	Not specified	EXW	China	Within 14 days	TT within 5 days	Yuan/mt				
Aluminum ADC12 FOB China	AAVSJ00	AAVSJ03		AAVSJ16	Assessment	Tuesday	PMA810	JIS standard	Min 25 mt	Not specified	FOB	Shanghai, Tianjin	Within 14 days	TT within 5 days	\$/mt				

## Aluminum Chain

### Alumina (Aluminum Oxide)

#### Market Close: 5:30 pm Singapore time (0930 GMT).

**Seaborne alumina (FOB Australia, FOB Brazil, and CIF China):** The assessments reflect the following specifications for sandy calcined metallurgical / smelter grade alumina (SGA): max SiO<sub>2</sub> 0.025%, max Fe<sub>2</sub>O<sub>3</sub> 0.025%, max TiO<sub>2</sub> 0.007%, max Na<sub>2</sub>O 0.55%, max ZnO 0.015%, max P<sub>2</sub>O<sub>5</sub> 0.003%, max CaO 0.05%, max V<sub>2</sub>O<sub>5</sub> 0.005%, max loss on ignition (300-1000 degrees C) 1%, max alpha phase (Alumina Alpha or Alpha content) 12%, specific surface area 60-80 m<sup>2</sup>/g. Market information deviating from Platts standard specifications including cargo size and packaging may be considered for the assessment after normalization.

**FOB Australia:** Market information on an FOB Australia basis is prioritized for the assessment. Information on a CIF basis may be considered for the assessment after netting back to an FOB Australia equivalent using relevant assessed spot freight rates on the day of assessment for the appropriate dry bulk carriers, such as Handysize, Handymax or Supramax. Information for other FOB markets, such as India, Brazil or Jamaica, is not taken into account directly for assessment purposes but are actively monitored for price analysis.

**Market-on-Close (MOC) guidelines for FOB Australia:** Platts reflects standard operational tolerance for FOB Australia cargoes as per market practice of +/-5% of volume at the buyer's option. Platts has observed that typical loading laycans in the Australian spot market in the front month correspond to a 5-7 day range, and as such will accept offers on such a basis. For months where the specific loading laycan has not been declared, offers may be considered on a wider laycan basis, and may be normalized. Bids will be accepted on a 30-day laycan basis. Seller's option to declare timing is assumed, as per typical market practice. Bids or offers submitted in the MOC

process must clearly state loading from Bunbury or Kwinana or both at the time of submission, with the specific port to be nominated after the trade. Seller's option on nomination of a specific port in a multi-port bid/offer is assumed, as per market practice. MOC participants should state the terms of payment in their bid or offer at the time of submission. For further details please refer to the Metals Timing and Increment Guidelines: [https://www.spglobal.com/commodityinsights/PlattsContent/\\_assets/\\_files/en/our-methodology/methodology-specifications/metals\\_timing\\_increment\\_guidelines.pdf](https://www.spglobal.com/commodityinsights/PlattsContent/_assets/_files/en/our-methodology/methodology-specifications/metals_timing_increment_guidelines.pdf)

**CIF China:** The calculation reflects the following formula: FOB Australia Alumina (MMWAU00) plus Dry Bulk Freight Alumina Bunbury/Kwinana-Lianyungang 30,000 mt Handysize (MMACH00).

**FOB Brazil to FOB Australia differential:** The assessment represents the premium or discount (differential) for alumina in the Atlantic basin to the benchmark Platts Alumina FOB Australia daily assessment (MMWAU00). The assessment reflects cargoes basis FOB Brazil. Material from other countries in the Atlantic region may be price normalized to FOB Brazil.

**Ex-works China:** Platts normalizes all price information gathered from other major alumina producing Chinese provinces – Henan, Shandong, Guangxi, and Guizhou – back to an ex-works Shanxi basis.

#### Calcined Petcoke (CPC)

**Calcined Petroleum Coke FOB US Gulf Coast:** The assessment reflects the spot price of anode grade calcined petroleum coke (CPC), suitable for aluminum smelters, traded on an FOB Gulf Coast/Mississippi River region basis at the close of the assessment period on the day of publishing. Larger loadings of up to 25,000-45,000mt may be price normalized to the specified loading size of 10,000-15,000mt.

In the absence of spot liquidity, information for adjacent regions and markets may also be taken into consideration after normalization or netbacks using the appropriate freight costs.

The assessment is published at midday ET on the last business day of the month.

## Aluminum

### US

**Market-on-Close (MOC) guidelines:** For information on the MOC assessment process for P1020A aluminum please refer to the Metals Timing and Increment Guidelines: [https://www.spglobal.com/commodityinsights/PlattsContent/\\_assets/\\_files/en/our-methodology/methodology-specifications/metals\\_timing\\_increment\\_guidelines.pdf](https://www.spglobal.com/commodityinsights/PlattsContent/_assets/_files/en/our-methodology/methodology-specifications/metals_timing_increment_guidelines.pdf)

**MW US Transaction Premium (MWP):** The assessment reflects a daily premium or discount to the LME cash settlement price for spot physical minimum 99.7% high-grade P1020A aluminum, and considers LME-deliverable, any-origin ingot, low-profile sow or T-bars, normalized to sow/T-bar shape.

Spot market information is collected daily for the assessment process across a wide range of market participants including producers, traders and consumers.

Market information deviating from Platts standard specifications, as outlined in the specifications table, may be considered for the assessment after normalization. Values reported as a negotiated premium or discount are given priority in the assessment process over implied premiums or discounts derived from fixed price "All-in" values.

The daily assessment reflects delivery duty paid (DDP) to a typical-freight consumer in a broad US Midwest region via truck or rail.

Based on market input, Platts has categorized freight costs for typical locations observed for the North American market as “Average”, “Close” or “Extra”.

Locations with “Average” freight costs are determined as the basis locations for the price assessments. These locations include Anderson, Lafayette, and Warrick, Indiana; Berea, Russellville and Shelbyville, Kentucky; St. Louis, Missouri; Carthage, Huntington and New Johnsonville, Tennessee; Manitowoc, Wisconsin; and Ravenswood, West Virginia.

Locations with “Extra” or “Close” freight costs are normalized to “Average” based on differential values surveyed from market participants.

The assessment is timestamped at 4:00pm US Eastern time to reflect the most widely tradable and repeatable premium or discount values prevailing at the close of US markets. The assessment follows the London publication schedule. On US holidays, the value from the most recent prior business day is carried over. Effectively, the transaction premium assessment published on a US holiday is the same as the value from the prior assessment day, as trading activity is typically limited with the bulk of market participants absent for holidays.

**MW US Market (“All-in”):** The assessment reflects a daily all-inclusive (“All-in”) spot physical price for minimum 99.7% high-grade P1020A aluminum. See specifications for MW US Transaction Premium.

In the absence of “All-in” spot market information, Platts may also refer to other relevant market data, including prevailing exchange-traded values plus applicable premium or discount for delivery to a typical-freight US Midwest aluminum consumer. Where exchange values are used, Platts normalizes to the middle of the 7-30 days forward delivery period specified for the assessment based on the prevailing cash to M3 or month-to-month forward curve structure. For example, on April 28, 2023, taking the middle of the 7-30 day forward delivery

period, the May 16 exchange value on the cash to M3 forward curve was used as the basis for the assessment. The May 16 exchange value at \$2372/mt on April 28, was then converted to 107.59 cents/lb and added to the US transaction premium (MMAKE00) of 25.15 cents/lb, rounded to the nearest quarter cent, resulting in an MW US Market assessment (MMAAE00) of 132.75 cents/lb.

**MW US Transaction Price (“All-in”):** The sum of the daily LME high-grade aluminum cash settlement price, converted into cents/lb, and the US MWP (MMAKE00). See specifications for MW US Transaction Premium.

**Aluminum US “All-in” (Basis CME):** The sum of COMEX’s physically deliverable Aluminum (ALI) price, converted into cents/lb, and the US MWP. See specifications for MW US Transaction Premium.

**MW US Net-Cash Premium:** The daily assessment reflects the premium or discount to the LME cash settlement price based on net-cash terms, taking into account the prevailing spread between net-cash and net-30 terms, on a cents/lb basis. All other specifications are as for the MW US Transaction Premium.

**P1020A US Import Duty:** Daily calculation of the \$/mt and cts/lb-equivalent of prevailing Section 232 import duty for dutiable cargoes.

Applying prevailing duty of 10% as of May 2023, the calculation is as follows: 1) deduct the P1020A US Duty Freight Factor (\$/mt: AFLSA00; cts/lb AFLSB00) from the US Midwest Transaction Price (MMAAF10) to derive an implied FOB Canada value; 2) divide the FOB value by 1.1, creating an implied duty-unpaid FOB value; 3) multiply this implied duty-unpaid value by 0.1 to generate the P1020A US Import Duty.

**P1020A MW US Transaction Premium (Implied Duty-Unpaid) delivered US Midwest:** Daily value calculated by deducting the P1020A US Import Duty from the MW US Transaction Premium.

**P1020A MW US Transaction Price (Implied Duty-Unpaid) delivered US Midwest:** Daily value calculated by deducting the P1020A US Import Duty from the MW US Transaction Price.

**P1020A US Duty Freight Factor:** Daily freight factor determined by adding together inland US freight, Canada-US sea vessel/ barge/truck/rail freight and relevant loading and unloading charges to net back to an FOB Canada basis from a delivered US Midwest basis.

**CIF New Orleans duty-unpaid premium:** Daily assessment of the premium or discount, in \$/mt, to the LME cash settlement price for P1020A grade aluminum on a CIF New Orleans basis, free out, duty-unpaid, taking into account breakbulk cargoes in spot cargo sizes as outlined in the specifications table. Market information on a CIF Mobile or CIF Houston basis is considered for the assessment after normalization to a CIF New Orleans basis. Platts also publishes a cents/lb conversion and calculated NOLA to US MWP (MMAKE00) differential.

**US Six-Months P1020A:** Weekly US premium or discount to LME cash settlement for minimum 99.7% high-grade aluminum, delivered Midwest, based on market data collected during the current week for pricing six months forward. Reflects both physical and financial derivatives business.

**US Spot 6063 Billet Upcharge:** Weekly US spot upcharge assessment over current P1020A MW US Transaction Price.

#### Latin America

**Aluminum CIF Brazil premium duty unpaid:** Weekly assessment of the premium or discount to the LME cash settlement price for spot physical high-grade aluminum. CIF Brazil includes major ports Santos/SP, Itajai/SC, Itaguaí/RJ and Sao Francisco do Sul/ SC, FOB values from exporting regions may also be considered in the assessment process. Duty unpaid, VAT not included (ICMS, PIS/Cofins and IPI). ‘Cash against documents’ payment term reflects payment at arrival or up to 7 days prior to arrival at the discharge port.

**Aluminum DDP Southeast Brazil premium (low ICMS), Aluminum DDP Southeast Brazil premium (high ICMS):** Weekly assessments of the premium or discount to the LME cash settlement price for spot physical high-grade aluminum, subject to low or high ICMS tax\* after payment of the “All-in” price. Southeast Brazil includes Sao Paulo, Rio de Janeiro, Minas Gerais and Espirito Santo. Duty paid, VAT not included (VAT comprising ICMS, PIS/Cofins and IPI is excluded at the point of assessment).

\*As of May 2023, low ICMS is defined as 0-4% and high ICMS as 12%.

## Europe

### Primary aluminum

**Good Western Premium Rotterdam:** \$/mt premium or discount to LME cash for Western-origin minimum 99.7% ingot meeting LME high-grade specifications. Assessed duty-paid and duty-unpaid in-warehouse Rotterdam.

**Low-Carbon Aluminum Price (LCAP):** Daily assessment in \$/mt of the premium or discount over LME cash for primary aluminum (as specified above) produced with a maximum emissions level of 4 mt of CO<sub>2</sub> per mt of aluminum, based on Scope 1, 2 at the smelter. Other emission levels may be normalized to this basis, including material using carbon offset credits to meet 4 mt of CO<sub>2</sub> at the smelter, and emissions specified on a cradle-to-gate basis. The assessment applies only to aluminum which has had its smelter Scope 1 and 2 emissions certified by an internationally accepted, independent organization. Market participants will be expected to supply proof of such certification upon request. In the absence of observable spot market activity, Platts may consider other verifiable data reported. Platts may observe direct market activity as well as the effect of movements in related markets through spread differentials, for example.

**Zero-Carbon Aluminum Price (ZCAP):** Daily calculation in \$/mt of the premium or discount over LME cash for primary

aluminum, with the cost of offsetting the carbon emissions of the LCAP assessment (see specifications above) to zero, based on the value of the daily Platts CORSIA-eligible carbon credit price assessment (CEC), measured in US dollars per mt CO<sub>2</sub>-equivalent (\$/mtCO<sub>2</sub>e). CORSIA, the Carbon Offsetting and Reduction Scheme for International Aviation, is referenced by a wide range of non-aviation industries as an acceptable approach for voluntarily curbing carbon’s impact on climate change. Details of the assessment methodology for the Platts CEC are available in the Carbon Markets Specifications Guide at the following link: [https://www.spglobal.com/commodityinsights/PlattsContent/\\_assets/\\_files/en/our-methodology/methodology-specifications/method\\_carbon\\_credits.pdf](https://www.spglobal.com/commodityinsights/PlattsContent/_assets/_files/en/our-methodology/methodology-specifications/method_carbon_credits.pdf)

**ZCAP is calculated using the following formula:**  $ZCAP = LCAP + (4 * CEC)$ .

### Aluminum billet

**Aluminum Billet 6060/6063:** Daily assessments of the physical spot market price in \$/mt and Eur/mt for min 99.7% aluminum as 6060/6063 billet with a diameter of 7-inch or 8-inch. Other qualities are considered and may be normalized to Platts base standard specifications, subject to prevailing market differentials. Minimum 50 mt shipments for delivery within 60 days.

**Low-Carbon Aluminum Billet 6060/6063 (LCAB):** Daily assessments of the physical spot market price in \$/mt and Eur/mt reflect assessment specifications for standard 6060/6063 aluminum billet (as specified above) produced with a maximum emissions level of 4 mt of CO<sub>2</sub> per mt of aluminum, based on Scope 1, 2 at the smelter. Other emission levels may be normalized to this basis, including material using carbon offset credits to meet 4 mt of CO<sub>2</sub> at the smelter, and emissions specified on a cradle to-gate basis. Assessments apply only to aluminum which has had its smelter Scope 1 and 2 emissions certified by an internationally

accepted, independent organization. Market participants will be expected to supply proof of such certification upon request. In the absence of observable spot market activity, Platts may consider other verifiable data reported. Platts may observe direct market activity as well as the effect of movements in related markets through spread differentials, for example.

Platts carbon-accounted primary aluminum and aluminum billet assessments do not encompass emissions of other production-related activities, such as mining and raw material transportation (Scope 3).

## Asia

**CIF Japan Spot Premium:** Daily assessment of the spot premium or discount to the futures cash settlement price for high-grade aluminum. Origin specifications align with the market definition of Good Western material and exclude metal originating in Iran, India, Egypt and Russia. Material from LME warehouses is also excluded.

In order to ensure the underlying futures structure is accounted for when assessing the CIF Japan Spot Premium, Platts normalizes all indications to a base month. The base month is the calendar month plus one (M+1). For example, if Platts is assessing during the month of November, then the assessment will reflect December as the base month. Normalization is not required for trades reported with a December quotation period (QP) and a December laycan as long as they fall within the 15-60 days loading window. Trades reported outside the base month will be normalized using the most current futures exchange inter-month spread. For example, a trade reported in November, with a December QP and a January laycan, and which falls within the 15-60 days loading period, will be normalized using the December-January inter-month spread at the time of the trade.

Platts also publishes an “All-in” price, which is calculated as the sum of futures cash settlement and the spot CIF Japan premium assessment.

**CIF Japan Forward Quarter Premium (industry-settled):**

Industry-negotiated premium or discount to the futures price at time of shipment. The premium range reflects the majority of concluded quarterly price settlements for annual long-term contracts for standard grade P1020A, which may be normalized in the case of packaged deals tied to value-added-products (VAP) where an impact on market value is observed. All trades reported that align to current Platts methodology are considered, irrespective of whether they were sold by aluminum producers, traders or consumers. Cargoes leave ports during the quarter for which the contract has been negotiated. The final value or range is published when a sufficient number of transactions have been concluded to reflect a repeatable value for the quarter in question. Should contract negotiations extend beyond the first business day of the quarter, no quarterly value would be published until a sufficient number of transactions have been concluded.

**CIF Main Asian Ports Spot Premium:** Daily assessment of the spot premium or discount to the prevailing futures cash settlement price for high-grade aluminum. The CIF Main Asian Ports (MAP) premium reflects the spot market value of P1020A of any-origin ingot, sow or T-bars. The CIF MAP premium is assessed with South Korea's Incheon as the basis port and considers shipments to main ports in Asia, excluding Japan, for freight normalization purposes. Platts prioritizes material of duty-free origin for the CIF MAP premium, in line with prevailing market practice for imports into South Korea. In the event where non duty-free market data is observed, Platts will test this information in the market and may normalize for assessment purposes.

**CFR China (“All-in”) Import Price:** Automated daily formula price reflecting the theoretical import value for importing P1020A aluminum into China. The calculation is the current futures cash settlement price plus current midpoint of the Platts CIF Japan Spot Premium (MMANA00) x Yuan exchange rate x Value Added Tax + China port charges. This assessment enables comparison with the China domestic Shanghai Futures Exchange current front month price, as well as the various domestic spot prices.

**Aluminum Scrap****US**

US aluminum scrap assessments are published twice per week unless otherwise specified.

**Old Cast:** Aluminum castings for consumption by secondary aluminum smelters, to meet ISRI “tense” specification, crushed cast, shreddable, less than 1% Mg and Zn, low Fe, low contamination; minimum recovery rate 92%; cents/lb, within 30-day delivery, US Midwest.

**Old Sheet:** Non-cast aluminum items for consumption by secondary aluminum smelters to meet ISRI “taint/tabor” specification; cents/lb, 30-day delivery, US Midwest.

**Mill-grade MLCCs:** Mixed-low copper clips able to be consumed by aluminum rolling mills, 1000, 3000, 5000, 6000 series only; cents/lb, 30-day delivery, US Midwest.

**Smelter-grade MLCCs:** Mixed-low copper clips for consumption by secondary aluminum smelters, loose, bare, new, no contamination, free of 2000 and 7000 series; cents/lb, 30-day delivery, US Midwest.

**Turnings:** Machine and tooling scrap for consumption by secondary aluminum smelters; high grade, clean and dry; cents/lb, 30-day delivery, US Midwest.

**High-grade auto shreds:** Auto shreds generated through a heavy media-based separation process, to meet ISRI “twitch” specification, containing at least 98% metallics, not more than 1% free Zn, and maximum 0.30% Mg, with quality comparable to the following suppliers: Huron Valley, Ferrous Processing/SLC Recycling and Fort Wayne OmniSource Corp.; cents/lb, 30-day delivery, US Midwest.

**Low-grade auto shreds:** Auto shreds generated through an eddy current-based or hand separation process, to meet ISRI

“tweak” specification, containing at least 90% metallics and not more than 4% free Zn, and 1% Mg; cents/lb, 30-day delivery, US Midwest.

**UBCs:** Baled used beverage cans, to meet ISRI “taldon” specification; cents/lb, delivered, US Midwest. Reflects the range of spot business concluded by mill consumers and mid-to-large scrap dealers/consolidators/brokers. Business that is reported as non-Midwest or FOT/FCA (picked up) is adjusted to reflect average US Midwest delivery. Assessed once per week.

**Painted siding:** Siding consisting of clean, low-copper aluminum siding scrap, painted one or two sides, free of plastic coating, iron, dirt, corrosion, fiber, foam or fiberglass backing or other non-metallic items; cents/lb, 30-day delivery, US Midwest. Assessed once per week.

**6063 New bare extrusion scrap:** Aluminum scrap consisting of one alloy (typically 6063). Material may contain “butt ends” from the extrusion process, but must be free of any foreign contamination. Anodized material is acceptable, but free of oil, film, coating or paint, and free of stainless steel, iron or other metallics. Price data for straight 6063 press scrap or 6063 scrap containing another alloy, paint or oil may be normalized to the stated specification; cents/lb, 30-day delivery, US Midwest. The weekly assessment reflects a discount or premium to Thursday's Platts Aluminum Transaction price. Platts also publishes a daily “All-in” value, calculated as a sum of the last-assessed discount or premium and the daily Aluminum Transaction assessment.

**6022 New bare scrap:** New, bare aluminum sheet scrap meeting 6022 specification with a minimum thickness of 0.050 inches. Free of hair wire, wire screen, dirt and other non-metallic items, as well as punchings less than 1/2 inch (1.27 cm) in diameter. Grease and oil not to total more than 1%. Normalized to the stated specification; cents/lb, 30-day delivery, US Midwest. The weekly assessment reflects a discount or premium to



Thursday's Platts US Aluminum Midwest Transaction price. Platts also publishes a daily "All-in" value, calculated as a sum of the last-assessed discount or premium and the daily Midwest Transaction assessment.

**5052 New bare scrap:** New, bare aluminum scrap meeting 5052 specification with a minimum thickness of 0.015 inches (0.38 mm). Free of hair wire, wire screen, dirt and other non-metallic items, as well as punchings less than 1/2 inch (1.27 cm) in diameter, as per ISRI specifications. Grease and oil not to total more than 1%. Normalized to the stated specification; cents/lb, 30-day delivery, US Midwest. The weekly assessment reflects a discount or premium to Thursday's Platts Aluminum Transaction price. Platts also publishes a daily "All-in" value, calculated as a sum of the last-assessed discount or premium and the daily Aluminum Transaction assessment.

#### Latin America

**Old cast delivered NE Mexico:** Old cast aluminum scrap with up to 5% contamination, minimal 88% recovery. Delivered in northeastern Mexico (Nuevo Leon and Coahuila states). The price excludes VAT and is published in pesos/kg and cents/lb.

**Old sheet delivered NE Mexico:** Non-cast aluminum items for consumption by secondary aluminum smelters, ISRI "taint/tabor" grade, containing 2-3% Fe. Delivered in northeastern Mexico (Nuevo Leon and Coahuila states). The price excludes VAT and is published in pesos/kg and cents/lb.

**UBCs delivered NE Mexico:** Baled used beverage cans, ISRI "taldon" specification. Delivered in northeastern Mexico (Nuevo Leon and Coahuila states). The price excludes VAT and is published in pesos/kg and cents/lb.

**6063 new bare scrap delivered NE Mexico:** 6063 new bare scrap, free of paint, may be anodized - may include press scrap with butts. Delivered in northeastern Mexico (Nuevo Leon or Coahuila states). The price excludes VAT and is published in pesos/kg and cents/lb.

**Aluminum scrap FOT SE Brazil:** Platts assesses domestic prices of aluminum cans, castings and profile extrusion. For full specifications please see the table.

#### **Carbon-Accounted Aluminum Spreads**

Global low-carbon metals spreads and ratios provide price comparisons for usage of lower-carbon feedstocks versus traditional or higher-carbon feedstocks which help reduce the carbon footprint of aluminum semi-fabricated products. The aluminum carbon-accounted spreads follow the assessment schedule for the least frequent assessment in the series, ie, twice-weekly, typically on Mondays and Thursdays in the case of the MWT-A380 and MWT-MLCCs, and once a week on Thursdays for MWT-UBCs. In the event of holidays, they also follow any changes in assessment days for the least-frequent. If the daily Midwest Transaction price should not be available on a twice-weekly or weekly assessment date due to a holiday, then the spread will not be published.

The spreads are underpinned by existing Platts primary and secondary aluminum assessments. They can help quantify costs in meeting carbon emissions reduction targets and show how these costs may impact finished material prices.

**US Aluminum MWT - A380 Spread:** The difference between the US Aluminum Midwest Transaction price for P1020A and secondary A380 alloy, in cents/lb, twice weekly. ALUMB00 = MMAAF10 - MMAAD00

**US Aluminum MWT – Mill MLCCs Spread:** The difference between the US Aluminum Midwest Transaction price for P1020A and mill-grade MLCCs scrap, in cents/lb, twice weekly. ALUMC00 = MMAAF10 - AAFBP00

**US Aluminum MWT-UBCs Spread:** The difference between the US Aluminum Midwest Transaction price for P1020A and the weekly used beverage cans scrap assessment, in cents/lb, weekly. ALUMA04 = MMAAF10 - AAFCD00.

#### **Secondary Aluminum Alloys**

##### US

US secondary aluminum alloys are assessed twice per week. During certain holiday weeks where market activity is more limited, the assessments are carried out once per week. The assessments reflect spot deliveries to US Midwest customer works, payment net-30 to net-60 days, minimum 45,000-lb truckload amounts.

The A380 assessment reflects new A380 specification alloy produced by smelters with reverberatory furnaces, not warehoused LME North American Special Aluminium Alloy Contract (NASAAC). Other alloys are aligned with the Aluminum Association specifications or typical market specifications for 319.1, 356.1, 332.2 (for F132), A413 and B390.

Platts assessments represent the following qualities:

A380 – 8-9.5% Si, 1% Fe, 3-4% Cu, 0.5% Mn, 0.1% Mg, 0.5% Ni, 2.9% Zn, 0.35% Sn

319 – 5.5-6.5% Si, 0.8% Fe, 3-4% Cu, 0.50% Mn, 0.1% Mg, 0.35% Ni, 1% Zn, 0.25% Ti

356 – 6.5-7.56% Si, 0.5% Fe, 0.25% Cu, 0.35% Mn, 0.25-0.45% Mg, 0.35% Zn, 0.25% Ti

F132 – 8.5-10% Si, 0.6% Fe, 2-4% Cu, 0.2% Mn, 0.9-1.3% Mg, 0.1% Ni, 1% Zn, 0.2% Ti

B390 – 16-18% Si, 1.3% max Fe, 4-5% Cu, 0.5% Mn, 0.45-0.65% Mg, 0.1% Ni, 1.4% Zn, 0.2% Ti

A413 – 11-13% Si, 1% max Fe, 0.6% Cu max, 0.35% Mn, 0.1% Mg, 0.5% Ni, 0.5% Zn, 0.15% Sn

### Europe

**Aluminum Alloy 226, 231:** Secondary aluminum alloys are assessed in Eur/mt on a delivered German works basis, prompt delivery for a minimum of one truckload. Other qualities are considered and normalized to Platts base standard specifications, subject to prevailing market differentials. The 226 LME grade alloy is produced in conformity with GBD-ALSi9Cu3 as described in DIN standard 1676 (2020). The 231 alloy conforms to AlSi12(Cu) as described in DIN 1676.

### Asia

**ADC12 ex-works China:** The assessment reflects the domestic spot market price in yuan/mt and converted into a \$/mt value, ex-plant from a typical supplier. The spot price reflects information reported by physical market participants, including Chinese secondary aluminum smelters, diecasters, foundries, automotive companies, and traders.

**ADC12 FOB China:** The assessment reflects the export spot market price in \$/mt, FOB Chinese ports, mainly Shanghai and Tianjin. The spot price represents information reported by physical market participants, including secondary aluminum smelters, diecasters, foundries, automotive companies, and traders.

**Base metals**

Assessment	Code	Mavg	Wavg	Yavg	Type	Published	Page	Quality	Quantity	Dimensions	Incoterms	Location	Timing	Payment	UOM	Conversion code \$/mt	Mavg conv.	Wavg conv.	Yavg conv.	
<b>Copper Concentrate</b>																				
Clean Copper Concentrate CIF China Treatment Charge	PCCCB00	PCCCB03	PCCCB04		Assessment	Daily	PMA304	Cu 25%, Au 1g/mt, Ag 80g/mt, S 32%, Fe 28%, Pb 0.1%, Zn 1%, As 0.2%, Sb 0.02%, Hg 2.5ppm, Bi 150 ppm, F 330 ppm	min 5,000 mt	Not specified	CIF	main north China	Loading 1-3 months forward	LC at sight	\$/mt					
Clean Copper Concentrate CIF China Refining Charge	PCCCB00	PCCCB03	PCCCB04		Assessment	Daily	PMA304	Cu 25%, Au 1g/mt, Ag 80g/mt, S 32%, Fe 28%, Pb 0.1%, Zn 1%, As 0.2%, Sb 0.02%, Hg 2.5ppm, Bi 150 ppm, F 330 ppm	min 5,000 mt	Not specified	CIF	main north China	Loading 1-3 months forward	LC at sight	Cents/lb					
Clean Copper Concentrate CIF China	PCCCA00	PCCCA03	PCCCA04		Assessment	Daily	PMA304	Cu 25%, Au 1g/mt, Ag 80g/mt, S 32%, Fe 28%, Pb 0.1%, Zn 1%, As 0.2%, Sb 0.02%, Hg 2.5ppm, Bi 150 ppm, F 330 ppm	min 5,000 mt	Not specified	CIF	main north China	Loading 1-3 months forward	LC at sight	\$/mt					
Clean Copper Concentrate Producer-Trader Treatment Charge Differential	PCCCG00	PCCCG03	PCCCG04		Assessment	Daily	PMA304	Cu 25%, Au 1g/mt, Ag 80g/mt, S 32%, Fe 28%, Pb 0.1%, Zn 1%, As 0.2%, Sb 0.02%, Hg 2.5ppm, Bi 150 ppm, F 330 ppm	min 5,000 mt	Not specified	CIF	main north China	Loading 1-3 months forward	LC at sight	\$/mt					
Clean Copper Concentrate Producer-Trader Refining Charge Differential	PCCCH00	PCCCH03	PCCCH04		Assessment	Daily	PMA304	Cu 25%, Au 1g/mt, Ag 80g/mt, S 32%, Fe 28%, Pb 0.1%, Zn 1%, As 0.2%, Sb 0.02%, Hg 2.5ppm, Bi 150 ppm, F 330 ppm	min 5,000 mt	Not specified	CIF	main north China	Loading 1-3 months forward	LC at sight	Cents/lb					
<b>Copper</b>																				
Copper Cathode Premium Delivered US Midwest	MMACP00	MMACP03		MMACP16	Assessment	Tuesday	PMA350	Premium or discount to COMEX spot for Grade 1 or Grade A copper cathodes	200-1,000 mt	Not specified	Delivered	Midwest	Within 30 days	Cash	Cents/lb					
Copper US Transaction (All-in)	MMCUT00	MMCUT03	MMCUT04	MMCUT16	Calculation	Daily	PMA680	COMEX copper first position (spot) for Grade 1 or Grade A copper cathode (CMAAD10) plus the weekly Copper Cathode Premium assessment (MMACP00)	200-1,000 mt	Not specified	Delivered	Midwest	Within 30 days	Cash	Cents/lb					
Copper LME Premium CIF China	MMAMK00				Assessment	Daily	PMA106	LME registered grade A copper	Min 100 mt	Not specified	CIF	Shanghai	Delivery 7-56 days forward	LC 30 days, Telegraphic Transfer (TT), Documents against Payments (DP)	\$/mt					

**Base metals**

Assessment	Code	Mavg	Wavg	Yavg	Type	Published	Page	Quality	Quantity	Dimensions	Incoterms	Location	Timing	Payment	UOM	Conversion code \$/mt	Mavg conv.	Wavg conv.	Yavg conv.
Copper Cathode CIF Shanghai Top Brand ER Differential	ACTBA00	ACTBA03			Assessment	Daily	PMA106	LME registered grade A copper	Min 100 mt	Not specified	CIF	Shanghai	Delivery 7-56 days forward	LC 30 days, Telegraphic Transfer (TT), Documents against Payments (DP)	\$/mt				
Copper Cathode CIF Shanghai SX-EW Differential	ACTBB00	ACTBB03			Assessment	Daily	PMA106	LME registered grade A copper	Min 100 mt	Not specified	CIF	Shanghai	Delivery 7-56 days forward	LC 30 days, Telegraphic Transfer (TT), Documents against Payments (DP)	\$/mt				
Copper CIF China Fixed Price Equivalent (All-in)	MMCUC00	MMCUC03			Calculation	Daily	PMA419	LME registered grade A copper	Min 100 mt	Not specified	CIF	Shanghai	Delivery 7-56 days forward	LC 30 days, Telegraphic Transfer (TT), Documents against Payments (DP)	\$/mt				
<b>Copper Scrap</b>																			
Copper No1 Berry/Candy Scrap Discount	MMACJ10	MMACJ02		MMACJ16	Assessment	Tuesday	PMA350	Typical 97-98% Cu	Min truckload	wire, pipe and tubing	Delivered	Midwest	Within 30 days	Net 30 days	Cents/lb				
Copper No1 Bare Bright Discount	MMACL10	MMACL02		MMACL16	Assessment	Tuesday	PMA350	Typical 98-99% Cu	Min truckload	bricks, bales	Delivered	Midwest	Within 30 days	Net 30 days	Cents/lb				
Copper No2 Birch/Cliff Scrap Discount	MMACN10	MMACN02		MMACN06	Assessment	Tuesday	PMA350	Typical 94-96% Cu	Min truckload. 20 foot containers	wire and miscellaneous scrap	FAS	Major US ports	Within 30 days	Cash against documents	Cents/lb				
<b>Lead</b>																			
Lead US Premium	MMXCD00	MMXCD03		MMXCD16	Assessment	Tuesday	PMA306	99.97% pure corroding-grade lead, max 0.025% Bi, Min max 0.005% Ag, max 0.001% Cu, max 0.001% Fe	Min truckload	"2,000-lb blocks (sows) or 55-100 lb pigs (ingots)"	Delivered	Midwest	Within 30 days	Net 30 days	Cents/lb				
Lead NA Market (All-in)	MMALF01	AADDN00	MMALF04	MMALF16	Calculation	Daily	PMA306	99.97% pure corroding-grade lead, max 0.025% Bi, Min max 0.005% Ag, max 0.001% Cu, max 0.001% Fe	Min truckload	"2,000-lb blocks (sows) or 55-100 lb pigs (ingots)"	Delivered	Midwest	Within 30 days	Net 30 days	Cents/lb				

**Base metals**

Assessment	Code	Mavg	Wavg	Yavg	Type	Published	Page	Quality	Quantity	Dimensions	Incoterms	Location	Timing	Payment	UOM	Conversion code \$/mt	Mavg conv.	Wavg conv.	Yavg conv.
<b>Lead Scrap</b>																			
Lead-acid batteries, used US Midwest (Weekly range)	MMLAA04	MMLAA03		MMLAA16	Assessment	Tuesday	PMA306	50% lead-acid, starter lighter ignition automotive batteries	Min truckload		Picked-up	US Midwest	30-day delivery	Net 30 days	Cents/lb				
Lead-acid batteries, used US Northeast (Weekly range)	MMLAB04	MMLAB03			Assessment	Tuesday	PMA306	50% lead-acid, starter lighter ignition automotive batteries	Min truckload		Picked-up	US Northeast	30-day delivery	Net 30 days	Cents/lb				
<b>Zinc</b>																			
Zinc MW SHG Premium	MMAYH00	MMAYH03			Assessment	Thursday	PMA306	Special high grade zinc	Min truckload, typical 200-400 mt		Delivered	Midwest	Within 30 days	Net 30 days	Cents/lb				
Zinc NA SHG (All-in)	MMABD10	MMABD02	MMABD01	MMABD16	Calculation	Daily	PMA306	Special high grade zinc	Min truckload, typical 200-400 mt		Delivered	Midwest	Within 30 days	Net 30 days	Cents/lb				
Zinc US Galvanizer Premium	MMAYI00				Assessment	Thursday	PMA306	Special high-grade zinc or continuous galvanizing grade zinc in jumbo form	1-2 railcars, or 4-9 truckloads	W 2426 lb (1100 kg), L 31.5" (80 cm), D 20" (50 cm), H 20" (50 cm)	Delivered	Midwest	Within 30 days	Net 30 days	Cents/lb				
Zinc NA Galvanizer (All-in)	MMABI10	MMABI02	MMABI01	MMABI16	Calculation	Daily	PMA306	Special high-grade zinc or continuous galvanizing grade zinc in jumbo form	1-2 railcars, or 4-9 truckloads	W 2426 lb (1100 kg), L 31.5" (80 cm), D 20" (50 cm), H 20" (50 cm)	Delivered	Midwest	Within 30 days	Net 30 days	Cents/lb				
<b>Zinc Secondary Alloys</b>																			
US Zinc Alloy No 3 (All-in)	MMABH10	MMABH02	MMABH01	MMABH16	Calculation	Daily	PMA306	All-in price for US zinc No. 3 Alloy	Min truckload, Not typical 100-250 mt		Delivered	Midwest	Within 30 days	Net 30 days	Cents/lb				
US Zinc MW Alloy No. 3 Premium	MMAYJ00				Assessment	Thursday	PMA306	Premium or discount to LME cash price for zinc No. 3 Alloy	Min truckload, Not typical 100-250 mt		Delivered	Midwest	Within 30 days	Net 30 days	Cents/lb				

**Base metals**

Assessment	Code	Mavg	Wavg	Yavg	Type	Published	Page	Quality	Quantity	Dimensions	Incoterms	Location	Timing	Payment	UOM	Conversion code \$/mt	Mavg conv.	Wavg conv.	Yavg conv.
<b>Tin</b>																			
Tin NY Dealer	MMAAW10	MMAAW02	MMAAW01	MMAAW16	Assessment	Monday/Thursday	PMA309	New York Grade A tin	Min 20 mt truckload	Not specified	IW duty paid	US	within 30 days	Net 30 days	Cents/lb	ALUAN00	ALUAN04	ALUAN03	ALUAN16
<b>Nickel</b>																			
Nickel US Cathode Premium Spot	MMAZM04				Assessment	Thursday	N/A	Min 99.8% Ni	Min 20 mt truckload	4x4" cut cathodes	Delivered	Midwest	within 30 days	Net 30 days	Cents/lb				
Nickel US Melt Premium Spot	MMAZI04	MMAZJ03			Assessment	Thursday	N/A	Min 99.8% Ni	Min 20 mt truckload	cathode and other forms	Delivered	Midwest	within 30 days	Net 30 days	Cents/lb				
Nickel Plate Premium Spot US	MMAZK04	MMAZL03			Assessment	Thursday	N/A	Min 99.8% Ni	Min 20 mt truckload	full plate uncut cathode	Delivered	Midwest	within 30 days	Net 30 days	Cents/lb				
Nickel NY Dealer Cathode (All-in)	MMAAQ00	MMAAQ03		MMAAQ16	Calculation	Thursday	PMA401	Min 99.8% Ni	Min 20 mt truckload	4x4" cut cathodes	Delivered	Midwest	within 30 days	Net 30 days	\$/lb				
Nickel NY Dealer Melt (All-in)	MMAAS00	MMAAS03		MMAAS16	Calculation	Thursday	PMA402	Min 99.8% Ni	Min 20 mt truckload	cathode and other forms	Delivered	Midwest	within 30 days	Net 30 days	\$/lb				
Nickel NY Dealer Plate (All-in)	MMAAU00				Calculation	Thursday	PMA403	Min 99.8% Ni	Min 20 mt truckload	full plate uncut cathode	Delivered	Midwest	within 30 days	Net 30 days	\$/lb				
Nickel Briquettes Premium Rotterdam	AALWJ00	AALWK00			Assessment	Friday	PMA415	LME grade min. 99.8% Ni	Min 20 mt truckload	Briquettes	IW	Rotterdam	within 30 days	Not specified	\$/mt				
Nickel Plating Premium Rotterdam	MMAYO04				Assessment	Friday	PMA415	LME grade min. 99.8% Ni	Min 20 mt truckload	4x4" cut cathodes	IW	Rotterdam	within 30 days	Not specified	\$/mt				
Nickel Uncut Cathode Rotterdam	MMAYP04				Assessment	Friday	PMA415	LME grade min. 99.8% Ni	Min 20 mt truckload	full plate uncut cathode	IW	Rotterdam	within 30 days	Not specified	\$/mt				

## Base metals

### Copper Concentrate

**CIF China copper concentrate treatment and refining charges (TC/RC) and “All-in” prices:** The Platts CCC assessments reflect spot market value of generic clean copper concentrate of any origin, expressed as TC/RC values and as an “All-in” value. The “All-in” prices are calculated using the TC/RC assessments and relevant copper, gold and silver futures prices from exchanges at 1630 Singapore time. Platts expresses TC/RC over base pricing month as M+3, with M being the middle month of the 3-month loading period.

Platts normalizes for different payable scales and quotation periods (QP). The payable scales are normalized as per the following guidelines:

Content	Payable of Full Content
18%≤Cu≤38%	96.5%, min deduction of one unit
Au<1g/mt	0%
1g/mt≤Au<3g/mt	90%
3g/mt≤Au<5g/mt	93%
5g/mt≤Au<8g/mt	94%
8g/mt≤Au<10g/mt	95%
Au≥10g/mt	96%
Ag<30g/mt	0%
Ag≥30g/mt	90%

Additional premiums may be applied when normalizing for gold content above 5g/mt or silver above 200g/mt.

The QP may be normalized to M+3, with M representing the loading month.

Platts may seek to normalize to a base standard any contract terms which may have meaningful impact on the TC value.

#### Clean Copper Concentrate CIF China Treatment Charge:

This assessment is based on the value miners pay to Chinese smelters to process copper concentrate into refined metal.

Platts also considers trades between miners to traders and traders to smelters for the assessment, these may be subject to normalization.

**Clean Copper Concentrate CIF China Refining Charge:** The assessment is a fixed 10% of the Treatment Charge, according to current industry standards.

**Clean Copper Concentrate CIF China Outright Price:** This assessment reflects the outright price of copper concentrates after taking into consideration the assessed TC/RCs.

**Clean Copper Concentrate Producer-Trader Treatment Charge Differential:** This assessment reflects the spot market value of clean copper concentrates of any origin done between producers and traders, expressed as a TC/RC differential to the Platts Clean Copper Concentrate CIF China Treatment Charge.

**Clean Copper Concentrate Producer-Trader Refining Charge Differential:** This assessment reflects the spot market value of clean copper concentrates of any origin done between producers and traders, expressed as a TC/RC differential to the Platts Clean Copper Concentrate CIF China Refining Charge.

## Copper

**Copper Cathode Premium delivered US Midwest:** Typical market premium or discount to First Position (spot) COMEX being charged by New York metal merchants on the next-to-last business day of the week. Platts also publishes a daily “All-in” value calculated as a sum of the last-assessed premium and the daily COMEX copper first position.

**Copper CIF China:** Premium for generic Electrolytic Refining (ER) quality, LME registered Grade A copper cathode, over LME cash for CIF China copper business. Assessment normalized to ER quality including timing and quotation period adjustment. Platts would consider base month as calendar month plus one, rolling

on the first business day of the month.

**Copper Cathode CIF Shanghai Top Brand ER Differential \$/mt:** This assessment represents higher grade ER cathodes, which generally trades at a premium to generic ER cathodes. Top brand ER cathode normally represents products produced by Codelco. Generic ER cathodes represent standard ER quality with a minimum 99.95% copper content, which usually originate from Chile, Peru, Australia, Europe, Japan etc.

**Copper Cathode CIF Shanghai SX-EW Differential \$/mt:** This assessment represents copper cathodes produced using the solvent extraction-electrowinning process (SX-EW), which generally trades at a discount to generic ER cathodes.

## Copper Scrap

**No. 1 Berry/Candy Scrap:** US-delivered burnt wire, pipe and tubing, 97%-98% copper content, discount or premium spread to the COMEX copper active month. Normalized to delivered US Midwest basis.

**No. 1 Bare Bright Scrap:** US-delivered bare bright scrap, in bricks or bales, 98%-99% copper content, discount or premium spread to the COMEX copper active month. Normalized to delivered US Midwest basis.

**No. 2 Scrap Birch/Cliff Scrap:** US-delivered clean No. 2 scrap, including wire and miscellaneous wire scrap, 94%-96% copper content, discount or premium spread to the COMEX copper active month. Normalized to delivered FAS major US ports.

## Lead

**US Lead:** Platts assesses a US premium or discount to the LME cash settlement price for 99.97% pure corroding-grade lead, in 2,000-lb blocks (sows) or 55-100 lb pigs (ingots), max 0.025% Bi, max 0.005% Ag, max 0.001% Cu, max 0.001% Fe. Minimum

quantity one truckload (42,000-44,000 lb), typical order size one to five truckloads. Platts also publishes a daily “All-in” value, calculated as the sum of the last-assessed premium and the daily lead cash settlement price, converted into cents/lb.

## Lead Scrap

### **US Used Lead-Acid Batteries picked up US Midwest:**

Weekly assessment for 50% lead-acid, starter lighter ignition automotive batteries, picked up US Midwest, normalized to a Midwest region including Ohio, Michigan, Wisconsin, Minnesota, Indiana, Illinois, Kansas, Nebraska, Missouri, Iowa and Kentucky. Suitable for delivery to secondary smelters. Minimum quantity one truckload (42,000-44,000 lb), with typical order size one to five truckloads, packaged in shrink-wrapped pallets or skids, pallet size 40 inches or 44 inches by 48 inches, maximum 3,600 lb per skid, no more than three battery layers separated by cardboard sheets.

**US Used Lead-Acid Batteries picked up US Northeast:** Weekly assessment for used 50% lead-acid, starter lighter ignition automotive batteries, picked up US Northeast. The Northeast region for price normalization includes New York, New Jersey, Pennsylvania, Delaware, Maryland, Connecticut, Massachusetts, Vermont, New Hampshire, Rhode Island and Maine. Suitable for delivery to secondary smelters. Minimum quantity one truckload (42,000-44,000 lb), with typical order size one to five

truckloads, packaged in shrink-wrapped pallets or skids, pallet size 40 inches or 44 inches by 48 inches, maximum 3,600 lb per skid, no more than three battery layers separated by cardboard sheets.

## Zinc

### US

**Special High Grade (SHG):** Weekly assessment of the spot premium or discount to LME zinc cash settlement price for SHG zinc, delivered US Midwest. Platts also publishes corresponding daily “All-in” values, calculated as a sum of the last-assessed premium or discount and the daily LME cash settlement price, converted into cents/lb.

**Galvanized:** Weekly assessment of the spot premium or discount to the LME SHG cash settlement price for zinc in jumbo form, with typical physical properties including weight of 2,426 lb (1,100 kg), length of 31.5 inches (80 cm), depth of 20 inches (50 cm) and height of 20 inches (50 cm), including special high-grade zinc with composition of 99.995% Zn or continuous galvanizing grade containing 0.22% to 1.1% aluminum. The assessment is normalized to a typical spot quantity of 1-2 railcars, or 4-9 truckloads. Platts also publishes a corresponding daily “All-in” value, calculated as a sum of the last-assessed premium or discount and the daily LME cash settlement price, converted into cents/lb

**Alloy No. 3:** Weekly assessment of the premium or discount to the LME cash settlement price for No. 3 die casting zinc alloy. Platts also publishes a corresponding daily “All-in” value, calculated as a sum of the last-assessed premium or discount and the daily LME cash settlement price, converted into cents/lb.

## Tin

### US

**New York Dealer:** Twice weekly assessment of New York Grade A tin, in-warehouse duty paid US. Minimum quantity of one truckload (20 mt) for delivery within 30 days.

## Nickel

### US

**Cathode/Melt/Plate Spot:** Premium or discount to LME cash settlement for nickel 4x4 inch cut cathodes, full plate uncut cathodes and other forms. LME-grade minimum 99.8% Ni. In addition to differentials Platts also publishes corresponding outright (“All-in”) prices.

### Europe

**Cathodes/Briquettes Spot Premiums:** Premium or discount to LME cash settlement for nickel 4x4 inch cut cathodes, briquettes and full plate uncut cathodes. LME-grade minimum 99.8% Ni.



**Battery metals**

Assessment	Code	Mavg	Wavg	Qavg	Type	Published	Page	Quality	Quantity	Dimensions	Incoterms	Location	Timing	Payment	UOM
<b>Lithium</b>															
Lithium Carbonate CIF North Asia	BATLC04	BATLC03	BATLD04	BATLC05	Assessment	Daily	PMA8888	Min 99.5% Li2CO3	Containers 5-40 mt	Powder packed in bags	CIF	Shanghai, China	15-60 days	Letter of Credit	\$/mt
Lithium Carbonate CIF North Asia (import parity)	BATCP04	BATCP03	BATCQ04	BATCP05	Calculation	Daily	PMA8888	Min 99.5% Li2CO3	Containers 5-40 mt	Powder packed in bags	CIF	Shanghai, China	15-60 days	Letter of Credit	Yuan/mt
Lithium Carbonate DDP China	BATCA04	BATCA03	BATCB04	BATCA05	Assessment	Daily	PMA8888	Min 99.5% Li2CO3	Min 1 truckload	Powder packed in bags	DDP	China	Within 14 days	Cash or LC	Yuan/mt
Lithium Hydroxide CIF North Asia	BATLH04	BATLH03	BATLI04	BATLH05	Assessment	Daily	PMA8888	Min 56.5% LiOH H2O	Containers 5-150 mt	Powder packed in bags	CIF	Japan / South Korea	15-60 days	Letter of Credit	\$/mt
Lithium Hydroxide DDP China	BATHY04	BATHY03	BATHZ04	BATHY05	Assessment	Daily	PMA8888	Min 56.5% LiOH H2O	Min 1 truckload	Powder packed in bags	DDP	China	Within 14 days	Cash or LC	Yuan/mt
Lithium Spodumene FOB Australia	BATSP03				Assessment	Friday	PMA8888	Min 6% Li2O	Min 1,000 mt	Concentrate	FOB	Australia	Within 30 days	Letter of Credit	\$/mt
<b>Cobalt</b>															
Cobalt Sulfate CIF North Asia	BATC004	BATC003	BATCR04	BATC005	Assessment	Daily	PMA8888	Min 20.5% Co	Containers 5-150 mt	Powder packed in bags	CIF	China / Japan / South Korea	15-60 days	Letter of Credit	\$/mt
Cobalt Sulfate DDP China	BATCS04	BATCS03	BATCV04	BATCS05	Assessment	Daily	PMA8888	Min 20.5% Co	Min 1 truckload	Powder packed in bags	DDP	China	Within 14 days	Cash or LC	Yuan/mt
Cobalt Hydroxide CIF China	BATCH04	BATCH03	BATCI04	BATCH05	Assessment	Daily	PMA8888	Co 30%, Mn 2-6%, Mg max. 6%, Fe max. 3%, moisture 10%	50-150mt of Co contained	Powder packed in bags	CIF	China	14-60 days	Letter of Credit at sight	\$/lb
Cobalt Hydroxide CIF China	BATCT04	BATCT03	BATCU04	BATCT05	Calculation	Daily	PMA8888	Co 30%, Mn 2-6%, Mg max. 6%, Fe max. 3%, moisture 10%	50-150mt of Co contained	Powder packed in bags	CIF	China	14-60 days	Letter of Credit at sight	\$/mt
<b>Nickel</b>															
Nickel Sulfate DDP China	BATNS04	BATNS03	BATNT04	BATNS05	Assessment	Daily	PMA8888	Nickel content: min 22% Magnetic materials: max 100 ppb	Min 1 truckload	Powder packed in bags	DDP	China	Within 14 days	30 days payment, bank acceptance or T/T, paid after delivery	Yuan/mt
Nickel Sulfate DDP China	BATNU00	BATNU03	BATNU04	BATNU05	Calculation	Daily	PMA8888	Nickel content: min 22% Magnetic materials: max 100 ppb	Min 1 truckload	Powder packed in bags	DDP	China	Within 14 days	30 days payment, bank acceptance or T/T, paid after delivery	\$/mt
MHP CIF North Asia Payable Basis Platts Nickel Sulfate	BATMB00	BATMB03			Assessment	Daily	PMA8888	35-40% nickel content and 2-5% cobalt content	Min 100mt	Powder packed in bags	CIF	North Asia (China, Japan, South Korea)	15-60 days	Cash or LC	%
MHP CIF North Asia All-In Price Basis Platts Nickel Sulfate	BATMA00	BATMA03			Calculation	Daily	PMA8888	35-40% nickel content and 2-5% cobalt content	Min 100mt	Powder packed in bags	CIF	North Asia (China, Japan, South Korea)	15-60 days	Cash or LC	Yuan/mt

**Battery metals**

Assessment	Code	Mavg	Wavg	Qavg	Type	Published	Page	Quality	Quantity	Dimensions	Incoterms	Location	Timing	Payment	UOM
MHP CIF North Asia All-In Price Basis Nickel Sulfate	BATME00	BATME03			Calculation	Daily	PMA8888	35-40% nickel content and 2-5% cobalt content	Min 100mt	Powder packed in bags	CFI	North Asia (China, Japan, South Korea)	15-60 days	Cash or LC	\$/mt
MHP CIF North Asia Payable Basis LME Nickel	BATMD00	BATMD03			Assessment	Daily	PMA8888	35-40% nickel content and 2-5% cobalt content	Min 100mt	Powder packed in bags	CFI	North Asia (China, Japan, South Korea)	15-60 days	Cash or LC	%
MHP CIF North Asia All-In Price Basis LME Nickel	BATMC00	BATMC03			Calculation	Daily	PMA8888	35-40% nickel content and 2-5% cobalt content	Min 100mt	Powder packed in bags	CFI	North Asia (China, Japan, South Korea)	15-60 days	Cash or LC	\$/mt

**Manganese**

Manganese Sulfate DDP China	BATMS00	BATMS03	BATMS04	BATMS05	Assessment	Daily	PMA8888	Min 32% Manganese content, Na max. 100ppm, Ca max. 50ppm, Cu max. 10ppm, Fe max. 10ppm, Mg max. 50ppm	Min 1 truckload	Powder packed in bags	DDP	China	Within 14 days	30 days payment, bank acceptance or T/T, paid after delivery	Yuan/mt
Manganese Sulfate DDP China	BATMT00	BATMT03	BATMT04	BATMT05	Calculation	Daily	PMA8888	Min 32% Manganese content, Na max. 100ppm, Ca max. 50ppm, Cu max. 10ppm, Fe max. 10ppm, Mg max. 50ppm	Min 1 truckload	Powder packed in bags	DDP	China	Within 14 days	30 days payment, bank acceptance or T/T, paid after delivery	\$/mt

## Battery Metals

### Lithium

**Lithium Carbonate:** Assessed on CIF North Asia and DDP China basis, reflecting physical spot market prices for minimum 99.5% purity battery grade lithium carbonate. Other qualities are considered and may be normalized to Platts base standard specifications, subject to prevailing market differentials. Platts also publishes an import parity price on CIF North Asia basis, which is calculated by converting the CIF North Asia assessment into Yuan/mt, adding Chinese VAT, port and logistics costs. The basis location for CIF North Asia assessment is Shanghai port, China. Cargoes delivered into any North Asian ports, such as in Japan and South Korea, are reflected in the assessment, after normalizing to the stated basis port. Freight and quality differentials for lithium carbonate cargoes delivered to different north Asian ports, as well as the spreads and dynamics between different regions may be considered in the normalization process.

**Lithium Hydroxide:** Assessed on CIF North Asia and DDP China basis, reflecting physical spot market prices for minimum 56.5% purity battery grade lithium hydroxide. Other qualities are considered and may be normalized to Platts base standard specifications, subject to prevailing market differentials. The basis location for CIF North Asia assessment is Japan and South Korea. Cargoes delivered to North Asia countries other than Japan and South Korea are reflected in the assessment, after normalizing to the stated basis. Freight, quality differentials for lithium hydroxide cargoes, as well as the spreads and

dynamics between different regions may be considered in the normalization process.

**Lithium Spodumene:** Assessed weekly on an FOB Australia basis, reflecting physical spot market price for lithium spodumene with a minimum 6% lithium oxide content and basis a minimum volume of 1,000mt from Western Australian ports within 30 days of the date of publication. Other qualities are considered and may be normalized to Platts base standard specifications, subject to prevailing market differentials.

### Cobalt

**Cobalt Sulfate:** Assessed on CIF North Asia and DDP China basis, reflecting physical spot market prices for minimum 20.5% cobalt content. Other qualities are considered and may be normalized to Platts base standard specifications, subject to prevailing market differentials. In the absence of information for the international market, the CIF North Asia assessment is assessed as an import parity calculation from the domestic Cobalt sulfate DDP China price.

**Cobalt Hydroxide:** Assessed on a CIF China basis, reflecting physical spot market prices for any-origin cobalt hydroxide with 30% cobalt content, 2-6% manganese content, max. 6% magnesium content, max. 3% iron content and 10% moisture. Other qualities may be normalized to Platts base standards. Platts assessment reflects responsibly sourced material, which sellers should be able to demonstrate in line with standard industry practice, upon buyers' request.

### Nickel

**Nickel Sulfate:** Assessed on a DDP China basis, reflecting physical spot market prices for minimum 22% nickel content and max 100 ppb magnetic materials, often referred to by market participants as type 2 nickel sulfate. All origins of type 2 nickel sulfate are considered, and other grades of type 2 nickel sulfate may be normalized to Platts base standard specifications, subject to prevailing market differentials.

**Mixed Hydroxide Precipitate (MHP):** Assessed CIF North Asia (China, Japan, South Korea) as a % "payable". Platts MHP payable assessments reflect pricing bases for both nickel sulfate and nickel metal: MHP payable basis Platts nickel sulfate DDP China daily assessment and MHP payable basis LME nickel monthly average. The assessments reflect the physical spot market for 35-40% nickel content and 2-5% cobalt content materials. Other qualities are considered and may be normalized to Platts base standard specifications, subject to prevailing market differentials.

### Manganese

**Manganese Sulfate:** Assessed on a DDP China basis, reflecting physical spot market prices for minimum 32% manganese content, max. 100ppm sodium content, max. 50ppm calcium content, max. 10ppm copper content, max. 10ppm iron content and max. 50ppm magnesium content materials. Other qualities may be normalized to Platts base standard specifications, subject to prevailing market differentials.

**Black mass**

Assessment	Code	Mavg	Type	Published	Page	Quality	Quantity	Dimensions	Incoterms	Location	Timing	Payment	UOM
LFP Black Mass DDP China Per Percent Lithium	<b>LBMCA00</b>	<b>LBMCA03</b>	Assessment	Daily	<b>PMA8888</b>	Typically Li 3.8%	Min 1 truckload	Powder packed in bags	DDP	China	Delivery within 14 days	Cash or LC	Yuan/mt
Ni-Co Black Mass DDP China Lithium Payable	<b>NBMCA00</b>	<b>NBMCA03</b>	Assessment	Daily	<b>PMA8888</b>	Min Li 4%, Co 10%, Ni 20%	Min 1 truckload	Powder packed in bags	DDP	China	Delivery within 14 days	Cash or LC	%
Ni-Co Black Mass DDP China Cobalt Payable	<b>NBMCB00</b>	<b>NBMCB03</b>	Assessment	Daily	<b>PMA8888</b>	Min Li 4%, Co 10%, Ni 20%	Min 1 truckload	Powder packed in bags	DDP	China	Delivery within 14 days	Cash or LC	%
Ni-Co Black Mass DDP China Nickel Payable	<b>NBMCC00</b>	<b>NBMCC03</b>	Assessment	Daily	<b>PMA8888</b>	Min Li 4%, Co 10%, Ni 20%	Min 1 truckload	Powder packed in bags	DDP	China	Delivery within 14 days	Cash or LC	%
Ni-Co Black Mass DDP China Calculated Price	<b>NBMCD00</b>	<b>NBMCD03</b>	Calculation	Daily	<b>PMA8888</b>	Min Li 4%, Co 10%, Ni 20%	Min 1 truckload	Powder packed in bags	DDP	China	Delivery within 14 days	Cash or LC	Yuan/mt
Ni-Co Black Mass EXW Europe Lithium Payable	<b>NBMEA00</b>	<b>NBMEA03</b>	Assessment	Daily	<b>PMA8888</b>	Min Li 4%, Co 10%, Ni 20%	Min 1 truckload	Powder packed in bags	Ex-works	Europe	14-60 days	Cash or LC	%
Ni-Co Black Mass EXW Europe Cobalt Payable	<b>NBMEB00</b>	<b>NBMEB03</b>	Assessment	Daily	<b>PMA8888</b>	Min Li 4%, Co 10%, Ni 20%	Min 1 truckload	Powder packed in bags	Ex-works	Europe	14-60 days	Cash or LC	%
Ni-Co Black Mass EXW Europe Nickel Payable	<b>NBMEC00</b>	<b>NBMEC03</b>	Assessment	Daily	<b>PMA8888</b>	Min Li 4%, Co 10%, Ni 20%	Min 1 truckload	Powder packed in bags	Ex-works	Europe	14-60 days	Cash or LC	%
Ni-Co Black Mass EXW Europe Calculated Price	<b>NBMED00</b>	<b>NBMED03</b>	Calculation	Daily	<b>PMA8888</b>	Min Li 4%, Co 10%, Ni 20%	Min 1 truckload	Powder packed in bags	Ex-works	Europe	14-60 days	Cash or LC	\$/mt
Ni-Co Black Mass DDP US Lithium Payable	<b>NBNEC00</b>	<b>NBNEC03</b>	Assessment	Daily	<b>PMA8888</b>	Min Li 3%, Co 5%, Ni 10%; Less than 5% combined Cu, Al, Fe	Min 1 truckload	Powder packed in bags	DDP	US	14-60 days	Cash or LC	%
Ni-Co Black Mass DDP US Cobalt Payable	<b>NBNEB00</b>	<b>NBNEB03</b>	Assessment	Daily	<b>PMA8888</b>	Min Li 3%, Co 5%, Ni 10%; Less than 5% combined Cu, Al, Fe	Min 1 truckload	Powder packed in bags	DDP	US	14-60 days	Cash or LC	%
Ni-Co Black Mass DDP US Nickel Payable	<b>NBNEA00</b>	<b>NBNEA03</b>	Assessment	Daily	<b>PMA8888</b>	Min Li 3%, Co 5%, Ni 10%; Less than 5% combined Cu, Al, Fe	Min 1 truckload	Powder packed in bags	DDP	US	14-60 days	Cash or LC	%
Ni-Co Black Mass DDP US Calculated Price	<b>NBNED00</b>	<b>NBNED03</b>	Calculation	Daily	<b>PMA8888</b>	Min Li 3%, Co 5%, Ni 10%; Less than 5% combined Cu, Al, Fe	Min 1 truckload	Powder packed in bags	DDP	US	14-60 days	Cash or LC	\$/mt

**Black Mass****LFP**

**Lithium Iron Phosphate Black Mass:** Assessed on a percentage lithium, DDP China basis. The assessment reflects physical spot market value for a single percentage point of lithium contained in lithium iron phosphate (LFP) black mass.

**Ni-Co**

**Nickel-Cobalt Black Mass:** The assessments reflect the percentage value, or payable, of nickel-cobalt (Ni-Co) black mass constituents based on minimum quality specifications for each key component – nickel (20%), cobalt (10%) and lithium (4%) – on a DDP China and Ex-Works Europe basis. The DDP US assessments are based on the following minimum quality specifications: nickel (10%), cobalt (5%) and lithium (3%).

Platts Ni-Co black mass payable assessments reflect the following pricing bases:

**Ni-Co Black Mass DDP China**

Nickel payable pricing basis	Platts daily DDP China Nickel Sulfate
Cobalt payable pricing basis	Platts daily DDP China Cobalt Sulfate
Lithium payable pricing basis	Platts daily DDP China Lithium Carbonate

**Ni-Co Black Mass Ex-Works Europe**

Nickel payable pricing basis	LME daily Nickel official cash price
Cobalt payable pricing basis	Platts daily European Cobalt Metal
Lithium payable pricing basis	Platts daily CIF North Asia Lithium Carbonate

**Ni-Co Black Mass DDP US**

Nickel payable pricing basis	LME daily Nickel official cash price
Cobalt payable pricing basis	Platts daily US Cobalt Cathode
Lithium payable pricing basis	Platts daily CIF North Asia Lithium Carbonate

**Ni-Co Black Mass outright calculations:** Platts publishes calculated theoretical Ni-Co black mass prices combining Platts daily spot market assessments of Ni-Co key component payables with the underlying Platts or LME pricing basis for nickel, cobalt and lithium.

**The calculations use the following industry conversion factors, where applicable:**

Nickel sulfate to nickel	0.205
Cobalt sulfate to cobalt	0.205
Lithium carbonate to lithium	0.190

**The calculated price for Ni-Co black mass DDP China is the sum of the following three components:**

Calculated nickel component = Ni-Co black mass DDP China nickel payable (NBMCC00) x Platts Nickel Sulfate DDP China (BATNS04)/ nickel metal conversion factor x nickel base content.

Calculated cobalt component = Ni-Co black mass DDP China cobalt payable (NBMCB00) x Platts Cobalt Sulfate DDP China (BATCS04) / cobalt metal conversion factor x cobalt base content.

Calculated lithium component = Ni-Co black mass DDP China lithium payable (NBMCA00) x Platts Lithium Carbonate DDP China (BATCA04) / lithium metal conversion factor x lithium base content.

**The calculated price for Ni-Co black mass EXW Europe is the sum of the following three components:**

Calculated nickel component = Ni-Co black mass EXW Europe nickel payable (NBMEC00) x LME Nickel daily official cash price x nickel base content

Calculated cobalt component = Ni-Co black mass EXW Europe cobalt payable (NBMEB00) x Platts Cobalt metal IW Europe (MMAIK00) x cobalt base content

Calculated lithium component = Ni-Co black mass EXW Europe lithium payable (NBMCA00) x Platts Lithium Carbonate CIF North Asia (BATLC04) / lithium metal conversion factor x lithium base content

**The calculated price for Ni-Co black mass DDP US is the sum of the following three components:**

Calculated nickel component = Ni-Co black mass DDP US nickel payable (NBNEA00) x LME Nickel daily official cash price x nickel base content

Calculated cobalt component = Ni-Co black mass DDP US cobalt payable (NBNEB00) x Platts Cobalt cathode DDP US (MMAE000) x cobalt base content

Calculated lithium component = Ni-Co black mass DDP US lithium payable (NBNEC00) x Platts Lithium Carbonate CIF North Asia (BATLC04) / lithium metal conversion factor x lithium base content

**Light/Minor metals**

Assessment	Code	Mavg	Qavg	Type	Published	Page	Quality	Quantity	Dimensions	Incoterms	Location	Timing	Payment	UOM
<b>Magnesium</b>														
Magnesium 93% Alloy DDP US	MMAHR00	MMAHR03	MMAHR16	Assessment	Wednesday	PMA368	Basis 93% Mg; AM50A, AM60B	Min full 40,000 lb truckload	Normalized to ingots	DDP	US customer works	Delivery within 30 days	Net 30-60 days	Cents/lb
Magnesium 99.8% DDP US	MMAHQ00	MMAHQ03	MMAHQ16	Assessment	Wednesday	PMA368	Min 99.8% pure, non-oxidized; ASTM Grade 9980A	Min full 40,000 lb truckload	Normalized to ingots	DDP	US customer works	Delivery within 30 days	Net 30 days	Cents/lb
Magnesium Europe Free Market	MMAIZ00			Assessment	Wednesday	PMA368	99.9% pure, unoxidized	Typical 1-5 truckloads	Ingots, sow or T-bars	IW, duty unpaid	Rotterdam	Shipment within 30 days	Net 30 days	\$/mt
<b>Silicon</b>														
Silicon 553 grade delivered US Midwest	MMAJM00	MMAJM03	MMAJM16	Assessment	Wednesday	PMA407	Min 98.5% Si, max 0.5% iron, max 0.3% Ca, 0.2-0.5% Al	Typical 1-5 truckloads	4-inch lumps, in bulk or 2,000-3,000 lb supersacks	Delivered	Midwest	Delivery within 30 days	Net 30 days	Cents/lb Si contained
Silicon 553 grade in-warehouse Europe	AAIUT00	MMAZH03		Assessment	Wednesday	PMA407	98.5% Si, max 0.5% Fe, max 0.3% Ca, 0.2-0.5% Al	Typical 1-5 truckloads	Lumps 50-100 mm, in bulk 1 mt big bags	IW, duty paid	European ports	Shipment within 60 days	Net-30 days	Eur/mt
<b>Titanium</b>														
Titanium 0.5% US Turning	MMAJZ00	MMAJZ03	MMAJZ16	Assessment	Thursday	PMA371	90% Ti, 6% Al, 4% V, 0.5% tin	Full 40,000 lb truckload		DDP	US	Delivery within 30 days	Net 30 days	\$/lb
Titanium 0.5% European Turning	MMAJY00			Assessment	Thursday	PMA371	90% Ti, 6% Al, 4% V, 0.5% tin	Full 20 mt container		DDP	Europe	Delivery within 30 days	Net 30 days	\$/lb
<b>Minor Metals</b>														
Cobalt 99.8% European	MMAIK00	MMAIK03	MMAIK16	Assessment	Daily	PMA375	Min 99.8% Co	Max 100 mt	cut cathodes, broken cathodes & briquettes	IW	Europe	Shipment within 30 days	Net 30 days	\$/lb
Cobalt Cathode DDP US	MMAE000	MMAE003	MMAE016	Assessment	Daily	PMA375	Min 99.8% Co	1-5 mt	1 inch cathodes and/or roundelles	DDP	US	Shipment within 30 days	Net 30 days	\$/lb

## Light/Minor metals

### Cobalt

**Cobalt European 99.8%:** Daily assessed spot price for minimum 99.8% cobalt; cut cathodes, broken cathodes and briquettes. Other qualities may be considered and normalized to Platts base standard specifications, subject to prevailing market differentials. The price is assessed on an in-warehouse Europe basis.

**US 99.8% Spot Cathode:** Daily assessed US spot market price for cobalt, minimum 99.8%, 1 inch x 1 inch cut, electrolytic, cobalt cathodes, packed in 250 kg steel drums, four drums per wooden pallet, strapped to pallet. Delivered, duty-paid US. All Cuban-origin material excluded from US cobalt assessments.

### Magnesium

**Magnesium 93% Alloy DDP US:** Any origin, primary or secondary, AM50A or AM60B meeting aluminum user specifications. Quality specifications are as follows: Basis 93% Mg, 4%-7% Al, 0.3% max Zn, 0.1% max Si, 0.0005% max Be.

**Magnesium 99.8% DDP US:** Any origin, see table for full specifications.

**Europe Free Market:** Dealer traded price for 99.9% pure, mostly Chinese origin, unoxidized Mg, delivery within 30 days in warehouse Rotterdam, duty unpaid.

### Silicon

**Silicon 553 grade, delivered US Midwest:** US and imported 553-grade silicon metal, duty-paid delivered Midwest. In-warehouse or picked-up transactions normalized to delivered US Midwest. Fines normalized to stated lump specifications. Special packaging, payment terms, smaller or larger quantities to be normalized to meet stated specifications and quantity.

**Silicon 553 grade, in-warehouse Europe:** EU origin and imported 553 grade silicon metal, duty-paid European main ports, producer plants and major EU warehousing hubs. Reported delivered, CFR and ex-works indications are normalized to in-warehouse basis. Special packaging, payment terms,

smaller or larger quantities to be normalized to meet stated specifications and quantity.

### Titanium

**US Turnings 0.5%:** US unprocessed turnings, delivered US, duty paid.

**European Turnings 0.5%:** US- or European-generated turnings, delivered Europe, duty paid.

## Precious metals

Assessment	Code	Mavg	Qavg	Type	Published	Page	Quality	Quantity	Dimensions	Incoterms	Location	Timing	Payment	UOM
Palladium NY Dealer	<b>MMABV00</b>	<b>MMABV03</b>	<b>MMABV06,MMABV16</b>	Assessment	Thursday	<b>PMA356</b>	Min 99.95%	Not specified	Sponge	DDP	US	Within 30 days	Net 10 days or less	\$/oz
Platinum NY Dealer	<b>MMAHX00</b>	<b>MMAHX03</b>	<b>MMAHX06,MMAHX16</b>	Assessment	Thursday	<b>PMA356</b>	Min 99.95%	Not specified	Sponge	DDP	US	Within 30 days	Net 10 days or less	\$/oz
Rhodium NY Dealer	<b>MMAID00</b>	<b>MMAID03</b>	<b>MMAID06,MMAID16</b>	Assessment	Thursday	<b>PMA356</b>	Min 99.9%	Not specified	Sponge	DDP	US	Within 30 days	Net 10 days or less	\$/oz
Ruthenium NY Dealer	<b>MMAIH00</b>	<b>MMAIH03</b>	<b>MMAIH16</b>	Assessment	Thursday	<b>PMA353</b>	Min 99.9%	Not specified	Sponge	DDP	US	Within 30 days	Net 10 days or less	\$/oz
Iridium NY Dealer	<b>MMAIJ00</b>	<b>MMAIJ03</b>	<b>MMAIJ16</b>	Assessment	Thursday	<b>PMA353</b>	Min 99.9%	Not specified	Sponge	DDP	US	Within 30 days	Net 10 days or less	\$/oz

## Precious metals

### Palladium

**NY Dealer:** Minimum 99.95% purity palladium, DDP US within 30 days, max net-10 day payment, \$/oz. The assessment reflects sponge form, with pricing information for ingots normalized to the sponge form.

### Platinum

**NY Dealer:** Minimum 99.95% platinum metal, in ingot or sponge form, DDP US within 30 days, max net-10 day payment, \$/oz. The assessment reflects sponge form, with pricing information for ingots normalized to the sponge form.

### Rhodium

**NY Dealer:** Minimum 99.9% purity rhodium, in sponge form, DDP US within 30 days, max net-10 day payment, \$/oz.

### Ruthenium

**NY Dealer:** Minimum 99.9% ruthenium metal, in sponge form, DDP US within 30 days, max net-10 day payment terms, \$/oz.

### Iridium

**NY Dealer:** Minimum 99.9% iridium purity, in sponge form, DDP US within 30 days, max net-10 day payment terms, in \$/oz.



## Revision history

**September 2023:** Platts launched daily black mass assessments for the US, moved US cobalt cathode to a daily frequency, and amended volume specifications for European silicon and aluminum alloy assessments. In July 2023, Platts excluded Russian-origin aluminum from its CIF Japan spot assessments, renamed its US magnesium alloy assessment and consolidated its US assessments for minimum 99.8% pure magnesium. The magnesium consolidation included assessment renaming and specification changes for Magnesium 99.8% DDP US and the discontinuation of the US Spot Western assessment.

**June 2023:** Platts conducted an annual review of the specifications guide and made clarifications and stylistic changes throughout, reducing duplication between tables and text. The clarifications included a more detailed description of “All-in” prices across all metals and fuller description of such assessment parameters as; quantities, payment terms, location, loading/delivery timing etc. References to P1020 aluminum were replaced with the more exact “P1020A”.

In May 2023, Platts introduced a daily CIF Main Asian Ports aluminum assessment.

In April 2023, Platts launched a US aluminum CME-basis “All-in” calculation, daily mixed hydroxide precipitate (MHP) CIF North Asia assessments and daily black mass assessments for China and Europe.

**February 2023:** Platts changed the description of Brazil’s DDP Southeast aluminum premium to DDP Southeast (low ICMS), removed the DDP Southeast Brazil “All-in” price calculation following discontinuation, and added a second assessment of the Brazilian domestic aluminum premium named DDP Southeast (high ICMS). Platts added secondary aluminum alloy and scrap and NY Dealer tin calculations in \$/mt. Platts discontinued the weekly Zinc US Dealer SHG “All-in” price

(MMABF10) due to duplication of the calculated daily Zinc NA SHG “All-in” (MMABD10).

**November 2022:** Platts clarified the frequency, quantity and dimensions of European cobalt, aligning the minor metals table with previously published specifications. Platts edited language relating to its low-carbon and zero-carbon primary aluminum assessments. Platts updated the language relating to its MW US aluminum transaction premium to reflect the carry over of published values on US holidays, as well as the ending of the 1 pm US Eastern time early market close on the last business day of each month.

**October 2022:** Platts changed the publication day for US and European magnesium assessments to Wednesday. Platts also moved its European silicon assessment to Wednesday publication.

**September 2022:** Platts moved its European aluminum billet assessments to daily frequency and launched low-carbon aluminum billet assessments for Germany and Italy.

**September 2022:** Platts made changes to its clean copper concentrate CIF China coverage, revising the assessment location to delivered main north China ports, expanding the gold payable scale and discontinuing brand differential calculations.

**July 2022:** Updated to show change of publishing day for weekly US Copper Scrap and US Copper Cathode assessments from Wednesdays and Thursdays, respectively, to Tuesdays.

**July 2022:** Platts launched a daily assessment of battery grade manganese sulfate DDP China in Yuan/mt and an accompanying conversion to \$/mt. Platts added a \$/mt conversion of its existing nickel sulfate DDP China assessment.

**July 2022:** Platts moved its alumina CIF China assessment to a formula basis and updated the guide to include references to

FOB Australia alumina and US P1020 aluminum Market-on-Close (MOC) guidelines.

**July 2022:** Platts discontinued its US tungsten assessments.

**May 2022:** Platts changed the basis of its European nickel uncut cathode assessment.

**May 2022:** Platts completed an annual review of this guide, reviewing all content, correcting typos, and making edits to language throughout.

**March 2022:** Platts updated the assessment timestamp for US aluminum, changing the market close for assessments to 4 pm ET, effective March 30, 2022.

**December 2021:** Platts updated the methodology details for the Japan spot aluminum premium assessment to include a clearer example of the base month normalization process; clarified the methodology details for the Japan forward quarter aluminum premium assessment to state that trades tied to value-added-products packages where an impact on market value is observed, and irrespective of counterparty types, may be subject to normalization; and added two new producer-to-trader copper concentrate TC/RC differentials assessments, launched Dec. 1, 2021.

**November 2021:** Platts added monthly and yearly averages for NY Dealer Iridium and Ruthenium assessments effective Sept. 30, 2021.

**September 2021:** Platts added Aluminum Carbon-Accounted spreads showing differentials between US Aluminum Transaction price and A380, Mill-grade MLCC and UBCs, effective Aug. 13, 2021.

**August 2021:** Platts discontinued the European Zinc (SHG) FCA Rotterdam premium/discount and “All-in” monthly assessments

effective July 6, 2021; last assessment June 16, 2021. Platts also discontinued the Nickel European Plating and Nickel Russian Cathode weekly calculations effective July 6, 2021; last assessment July 2, 2021.

**May 2021:** Platts completed an annual review of this guide in May 2021, reviewing all content, correcting typos and making minor edits to language.

**May 2021:** Platts updated the change of publishing frequency for the suite of Battery Metals assessments to daily from weekly, and for Spodumene to weekly on Friday from monthly and added new codes for the publication of weekly averages.

**April 2021:** Platts deleted Copper CIF China (“All-in”) and Copper CIF China Spot Yuan/mt (“All-in”) assessments. Added three new CIF China copper concentrate weekly calculation.

**April 2021:** Platts launched low-carbon and zero-carbon aluminum prices.

**February 2021:** Platts added six new CIF China copper concentrate TC/RC assessments and brand differentials, and two new CIF China copper cathode premium differentials. The incoterm for copper cathodes were also changed to CIF basis from C+F basis. Additionally, the delivery timing was expanded to 7-56 days, and the basis location specified as CIF Shanghai. Payment terms of Telegraphic Transfer (TT) and Documents against Payments (DP) were added alongside the existing 30 days letter of credit terms. Platts also applied a normalization for quotation periods to a standard base month.

**January 2021:** Platts changed its China alumina price assessments to CIF basis, from CFR.

**December 2020:** Platts made stylistic changes to and simplified descriptions of aluminum chain, scrap and secondary alloy assessments.

**November 2020:** Platts discontinued Russian Aluminum A7E duty-unpaid in-warehouse Rotterdam and FOB St Petersburg daily assessments effective November 1, 2020; last assessments October 30, 2020.

**October 2020:** In September 2020, Platts discontinued five minor metals assessments in the US, changed the payment terms of CIF Brazil aluminum premium, clarified the location basis for lithium hydroxide CIF North Asia assessment and discontinued the related import parity, discontinued silicon 553 FOB China assessment, launched nickel sulfate DDP China assessment, corrected a typographical error for lithium carbonate location to CIF North Asia from CIF China basis and clarified the zinc content in the US F132 aluminum alloy assessment.

**August 2020:** Platts discontinued Cobalt Russian and Cobalt Zambian prices after last assessments July 30, 2020, clarified the location basis for lithium carbonate CIF North Asia assessment.

**June 2020:** Platts updated the frequency, quantities and dimensions of Cobalt 99.8% European, clarified the quantities of Chinese copper prices and updated payment terms of Aluminum ADC12 FOB China.

**May 2020:** Platts conducted annual review of the specifications guide and made clarifications and stylistic changes throughout. The clarifications included a more detailed description of “All-in” prices across all metals and fuller description of such assessment parameters as; quantities, payment terms, location, loading/delivery timing etc. References to P1020 aluminum were replaced with the more exact “P1020A” and the specifications of global primary aluminum assessments were updated to reflect minimum 99.7% purity in line with the LME specification. Platts also clarified the timestamp of cobalt assessments as 16.30 London time and of the US aluminum assessments during some US holidays. Platts launched CIF China cobalt hydroxide assessment.

**March 2020:** Platts launched alumina FOB Brazil differential to FOB Australia assessment.

**February 2020:** Platts clarified the data treatment in the US Midwest aluminum methodology.

**December 2019:** Clarified and amended the cargo sizes for alumina FOB Australia assessment to 30,000 mt and 35,000 mt lots.

**November 2019:** Platts conducted annual review of the specifications guide and made clarifications and stylistic changes throughout. The changes included aligning specifications described in tables and the associated text, clearer labelling of sections, removal of duplication, assessments’ launch dates and generic description of the methodology, which can be found in a standalone Platts Assessments Methodology guide. Platts also added previously omitted codes and their descriptions and removed the description of discontinued assessments, such as gold and MW oxide Transaction. Platts also clarified in the tables the frequency of publication of each price and the fixed page number for the Platts Metals Alert.

**November 2019:** Changed incoterm for Brazilian aluminum scrap assessments (UBCs, Castings, Profile) to FOT from delivered.

**August 2019:** Updated to add US 5052 new bare scrap assessments and reflect the discontinuation of the Copper Grade A CIF Rotterdam, Copper Standard CIF Rotterdam, Copper Grade A CIF Italy, Lead 99.985% IW R’dam, Tin 99.90% IW R’dam and Tin 99.85% IW R’dam assessments effective August 1, 2019. Amended a typo in the description of the Aluminum Italy DDP, added codes for the \$-denominated assessments for Aluminum billet in Italy and Germany.

**May 2019:** Updated the shipment timing in the FOB Australia and CFR China alumina daily assessments to 14-60 days forward from the assessment day, from 30-60 days.

**May 2019:** Updated to introduce Battery Metals - Cobalt Sulfate DDP China.

**May 2019:** Platts completed an annual update to sections 1 to 6 of Platts Methodology and Specifications Guides in April 2019, and moved these sections into a standalone Methodology Guide. Updated to reflect discontinuation of CIF South Korea aluminum premium weekly assessment (MMAMX00 weekly, MMAMX03 monthly average). Updated to reflect discontinuation of Magnesium 98.8% FOB China weekly assessment (AAVSK00 weekly, AAVSK03 monthly, AAVSK16 yearly average). Updated to reflect discontinuation of Die Cast Alloy FOB China premium weekly assessment (MMDCH04 weekly, MMDCH03 monthly, MMDCH16 yearly average).

**April 2019:** Updated to reflect change in SHG Zinc premium assessment specs to FCA Rotterdam from in-warehouse Rotterdam (MMAYN04).

**February 2019:** Updated to clarify the specifications for Copper Standard Grade CIF Rotterdam (MMAOI04).

**January 2019:** Updated to introduce Battery Metals – Cobalt Sulfate and Lithium Spodumene and reflect discontinuation of Copper Concentrate: Cu 30%, CIF Japan.

**November 2018:** Updated to remove in-warehouse Singapore premium for aluminum (MMAMY00, MMASW00, MMASW03).

**October 2018:** Updated to clarify the use of freight rates and location normalization in the US Aluminum Midwest Transaction premium assessment (MMAKE00). Methodology & Specifications Guide Annual Review was conducted and clarifications made.

**September 2018:** Updated to introduce Battery Grade Lithium Carbonate DDP China, Battery Grade Lithium Hydroxide CIF North Asia and Battery Grade Lithium Hydroxide DDP China assessments. Added Aluminum Billet 6060/6063

DDP Germany and Aluminum Billet 6060/6063 DDP Italy assessments.

**August 2018:** Updated to reflect introduction of US Midwest implied duty-unpaid assessments and associated normalization factors. Added Aluminum alloy 231 DDP Germany assessment

**June 2018:** Updated to reflect introduction of base month to CIF Japan Spot Premium P1020A assessment.

**May 2018:** Introduced Battery Metals heading and added Lithium Carbonate CIF North Asia assessment.

Updated to reflect change in China's VAT rate.

**February 2018:** Updated to reflect the discontinuation of the CIF Japan 553-grade silicon assessment after January 25, 2018, and the addition of the CIF New Orleans aluminum P1020A premium assessment in dollars/mt and cents/lb starting February 1, 2018, along with a CIF NOLA-Midwest premium differential in cents/lb.

**November 2017:** Methodology & Specifications Guide Annual Review was conducted and clarifications made. Updated to reflect change in calculation for Aluminum CIF China "All-in" assessment.

**October 2017:** IWH Singapore premiums for copper, nickel & zinc discontinued.

**April 2017:** updated CIF Japan spot aluminum premium to reflect change in loading window under assessment.

**January 2017:** Changed methodology and specification for US zinc galvanizing premium to reflect SHG or CGG in "jumbo" form.

**September 2016:** Conducted annual review, updated to correct typographical errors, add missing specifications to assessments such as China alumina assessment, CIF Japan "All-in" prices and

European cobalt. Updated language to ensure abbreviations for quantities and INCO terms were consistent throughout.

**August 2016:** Updated to reflect change in frequency of European lead, zinc and tin assessments to monthly. Updated to clarify aluminum CIF Japan quarterly premium assessment reflects cargoes shipping in the quarter for which contracts were negotiated and clarified publication norms for this assessment.

**July 2016:** Updated to show change of publishing day for weekly China magnesium ingot and magnesium alloy assessments to Fridays from Tuesdays.

**June 2016:** Updated the description for US A380 aluminum alloy to clarify standard practice with regard to assessment timings, changes during holiday weeks and A380 specifications.

**February 2016:** Updated to add new Mexican aluminum scrap price assessments for old cast, old sheet, UBCs and 6063 new bare extrusion scrap delivered Northeast Mexico.

**January 2016:** Discontinued US arsenic, cadmium and mercury assessments after the last price assessments on December 30, 2015. Added new price assessments for 6022 new bare aluminum scrap delivered US Midwest. Amended the specification for US 6063 scrap to new bare extrusion scrap, plus added daily calculated "All-in" value.

**December 2015:** Updated ex-works China alumina price assessment specification to basis ex-works Shanxi instead of ex-works Henan.

**November 2015:** Updated to remove the discontinued C&F China Western and C&F China Russian aluminum price assessments and to add the new CFR China "All-in" Import Price. Changed time stamp on the India 995 Gold Premium to 1700 IST.

**September 2015:** Methodology guide updated to correct the omission of Ruthenium from the detailed specifications and other typographical errors such as frequency of in-warehouse Singapore premiums and lack of timestamp on Australian alumina.

**August 2015:** Methodology guide was updated to add new assessment for US used lead-acid batteries picked up US Northeast, and to clarify the Midwest region for the US Midwest lead-acid batteries assessment.

**July 2015:** Updated to add CIF Korea spot aluminum premium assessment and to clarify that the In-warehouse Singapore aluminum premium is assessed weekly.

**May 2015:** This methodology guide was updated to show changes to the frequency and methodology for US Aluminum Market price assessment.

**April 2015:** This methodology guide was updated to show change in methodology for US Aluminum Transaction P1020A premium and discontinuation of the US osmium price assessment.

**February 2015:** This methodology guide was updated to include further description of Platts' processes and practices in survey assessment environments. Launch of Platts Gold Premium 995 India – PGPI995 – with corresponding methodology included in this document. This daily assessment reflects the India physical spot market premium/discount to the international spot rates

for 99.5% Gold, in kilo bar form, DDP Ahmadabad secure vault within 2 days, \$/troy oz.

**January 2015:** Platts updated the Metals Methodology and Specifications guide to remove some Asian price assessments that were discontinued as of December 31, 2014 and to update the US Aluminum Transaction premium typical freight range.

**July 2014:** Platts revamped all Metals Methodology and Specification guides, including its Nonferrous guide, in July 2014. This revamp was completed to enhance the clarity and usefulness of all guides, and to introduce greater consistency of layout and structure across all published methodology guides. Methodologies for market coverage were not changed through this revamp, unless specifically noted in the methodology guide itself.