

Mineral Industry Surveys

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ALUMINUM IN DECEMBER 2022

Domestic primary aluminum production in December 2022 was 64,000 metric tons (t). The average daily production in December 2022 was 2,060 t, essentially unchanged compared with that in November 2022, 20% less than that in December 2021, and 17% less than that in December 2020. In 2022, domestic primary aluminum production was 861,000 t. The average daily production in 2022 was 2,360 metric tons per day, 3% less than that in 2021, and 15% less than that in 2020 (fig. 1, table 1).

Total aluminum recovered from scrap in December 2022 was 261,000 t, 6% less than that in November 2022, 4% less than that in December 2021, and 10% more than that in December 2020. Of this, 140,000 t of aluminum was recovered from new scrap, and 121,000 t was recovered from old scrap. In 2022, total aluminum recovered from scrap was 3.39 million metric tons, 3% more than that in 2021 and 11% more than that in 2020 (fig. 1, table 1).

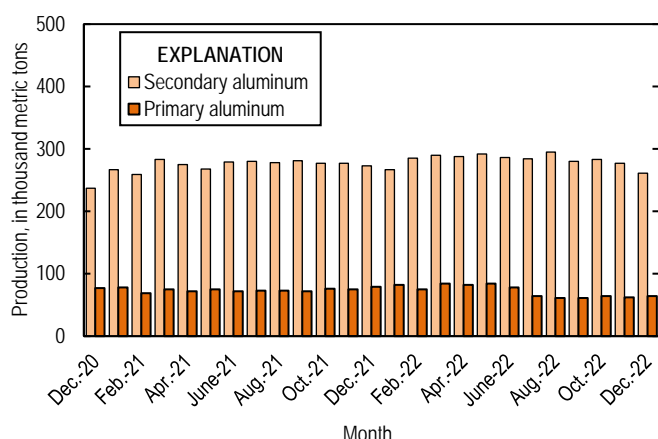


Figure 1. Monthly domestic primary and secondary aluminum production from December 2020 through December 2022.

Prices and Stocks

The December 2022 average U.S. spot market price of primary aluminum ingot was \$1.29 per pound, slightly more than that in November 2022, 13% less than that in December 2021, and 22% more than that in December 2020. The average cash price in December 2022 of primary aluminum ingot on the

London Metal Exchange (LME) was \$1.09 per pound, 3% more than that in November 2022, 11% less than that in December 2021, and 19% more than that in December 2020 (fig. 2, table 6).

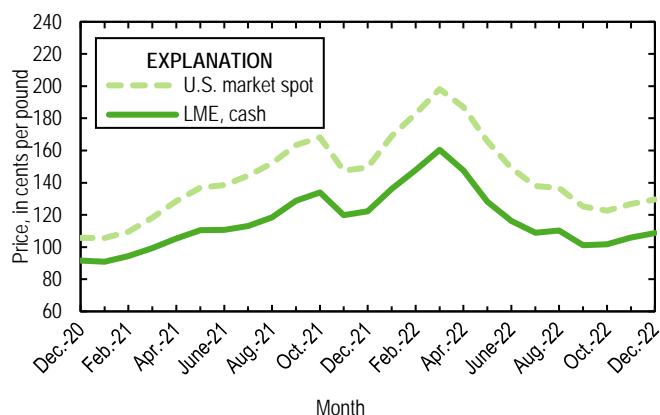


Figure 2. Average monthly prices for primary aluminum from December 2020 through December 2022. Source: S&P Global Platts Metals Week.

Inventories of primary aluminum in LME-approved warehouses, including off-warrant inventories, in the United States decreased to 6,551 t at the end of December 2022 from 9,103 t at the end of November 2022. Inventories of secondary aluminum (North American Secondary Aluminum Alloy Contract) in LME-approved warehouses, including off-warrant inventories, in the United States decreased to 2,810 t at the end of December 2022 from 3,737 t at the end of November 2022 (London Metal Exchange Ltd., 2022a, b; 2023a, b).

U.S. Trade

Total imports of aluminum for consumption in 2022 increased by 12% compared with that of 2021. Imports of crude metal and alloys, and semifabricated products increased by 14% and 13%, respectively, compared with that of 2021, while imports of scrap were essentially unchanged. Canada continued to be the leading source of aluminum imports, supplying 51% of total aluminum imports during 2022, followed by the United Arab Emirates (7%), Bahrain (5%) and Mexico (5%). The

leading sources of crude metal and alloys in 2022 were Canada (62%), United Arab Emirates (11%), Bahrain (6%), and Australia (5%). The leading sources of semifabricated products in 2022 were Canada and China, including Hong Kong (15% each); the Republic of Korea and Oman (8% each); and Thailand (7%). The leading sources of scrap in 2022 were Canada (63%) and Mexico (30%) (table 8).

Total exports of aluminum increased by 4% in 2022 compared with that of 2021. Exports of crude metal and alloys, and semifabricated products increased by 62% and 18%, respectively, compared with that of 2021, while exports of scrap decreased by 5%. The leading destinations for total aluminum exports during 2022 were Mexico (21%), Canada (17%), India and Malaysia (15% each), and the Republic of Korea (10%). Scrap accounted for 66% of all aluminum exports in 2022 (table 9).

Updates

On February 3, Alcoa Corp. announced that a plan to restart its San Ciprian Smelter in Spain was approved by workers at the site. The restart process is scheduled to begin in January 2024 and the 228,000 metric-ton-per-year primary aluminum smelter is expected to return to 75% capacity by 2026. Alcoa originally curtailed the San Ciprian facility in December of 2021 owing to high energy prices (Alcoa Corp., 2023; Betz, 2023).

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TABLE 1
COMPONENTS OF ALUMINUM SUPPLY¹

(Thousand metric tons)

Period	Primary production	Secondary recovery ⁴			Imports for consumption			Total new supply ²	Stocks, end of period ³
		New	Old	Total	Metals and alloys, crude	Plates, sheets, bars, etc.	Total		
2021	889	1,780	1,520	3,300	3,630	1,290	4,920	9,110	1,860
2021, December	79	146	127	273	316	109	425	777	1,860
2022:									
January	82	152	115	267	343	112	455	804	1,880
February	75	159	126	285	262	107	369	729	1,900
March	84	159	132	290	341	129	470	844	1,910
April	82	155	132	288	331	125	456	826	1,910
May	84	162	130	292	404	144	548	923	1,880
June	78	154	132	286	460	124	583	948	1,910
July	64	150	134	284	345	129	474	822	1,940
August	61	162	132	295	360	130	491	847	1,980
September	61	152	128	280	317	128	444	785	2,000
October	64	153	129	283	322	125	446	792	2,060 ^r
November	62	151	126	277	279	115	394	733	2,040
December	64	140	121	261	388	96	484	809	NA
January–December	861	1,850	1,540	3,390	4,150	1,460	5,610	9,860	NA

^rRevised. NA Not Available.

¹Data are rounded to no more than three significant digits, except "Primary production"; may not add to totals shown.

²Primary production, secondary recovery, and imports for consumption.

³Inventory levels reflect total for U.S. and Canadian producers; data from the Aluminum Association Inc.

⁴Metallic recovery from purchased, tolled, or imported scrap, expanded for full coverage of industry.

TABLE 2
ESTIMATED FULL COVERAGE CONSUMPTION OF AND METALLIC RECOVERY FROM
PURCHASED NEW AND OLD ALUMINUM SCRAP¹

(Thousand metric tons)

Period	Secondary smelters		Independent mill fabricators		Foundries		Other consumers		Total	
	Con-sump-tion	Metal recovery	Con-sump-tion	Metal recovery	Con-sump-tion	Metal recovery	Con-sump-tion	Metal recovery	Con-sump-tion	Metal recovery
2021	2,320	1,750	1,590	1,450	101	93	4	4	4,020	3,300
2021, December	194	146	130	119	8	8	(2)	(2)	333	273
2022:										
January	195	146	123	113	8	8	(2)	(2)	327	267
February	193	145	144	132	8	8	(2)	(2)	346	285
March	200	149	145	133	8	8	(2)	(2)	354	290
April	199	149	143	130	8	8	(2)	(2)	351	288
May	201	150	146	134	8	8	(2)	(2)	356	292
June	202	151	140	127	8	8	(2)	(2)	351	286
July	199	148	141	128	8	8	(2)	(2)	348	284
August	202	152	148	135	8	8	(2)	(2)	358	295
September	201	149	137	125	8	8	(2)	(2)	347	281
October	205	152	136	124	8	8	(2)	(2)	349	284
November	203	151	130	118	8	8	(2)	(2)	341	277
December	197	146	118	107	8	8	(2)	(2)	324	261
January–December	2,400	1,790	1,650	1,500	101	93	4	4	4,150	3,390

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Less than ½ unit.

TABLE 3
CONSUMPTION OF AND RECOVERY FROM PURCHASED
NEW AND OLD ALUMINUM SCRAP IN DECEMBER 2022¹

(Metric tons)

	Consumption		Calculated metallic recovery	
	Tabulated reports	Estimated full coverage	Tabulated reports	Estimated full coverage
Secondary smelters	164,000	197,000	122,000	146,000
Independent mill fabricators	107,000	118,000	97,000	107,000
Foundries	7,040	8,450	6,440	7,730
Other consumers	273	328	273	328
Total	279,000	324,000	225,000	261,000

¹Data are rounded to no more than three significant digits; may not add to totals shown.

TABLE 4
PURCHASED AND TOLL-TREATED ALUMINUM-BASE SCRAP IN DECEMBER 2022¹

(Metric tons)

	December				January–December ²	
	Stocks, opening ²	Net receipts ³	Melted or consumed	Stocks, closing	Net receipts ³	Melted or consumed
New scrap:						
Extrusion	18,600	33,600	33,500	18,800	477,000	478,000
Can stock clippings	10,500	27,700	27,700	10,500	353,000	353,000
Other wrought sheet/clippings	7,870	31,900	31,500	8,240	436,000	436,000
Casting	5,920	7,460	7,460	5,920	94,900	94,900
Borings and turnings	5,270	12,800	12,800	5,270	161,000	161,000
Dross and skimmings ⁴	18,500	46,600	46,600	18,500	546,000	546,000
Total new scrap	66,700	160,000	159,000	67,200	2,070,000	2,070,000
Old scrap:						
Used castings	8,160	26,900	26,900	8,160	330,000	330,000
Used extrusion	7,840	16,700	16,700	7,840	206,000	206,000
Used cans (shredded, loose, baled)	7,850	45,900	45,900	7,850	534,000	534,000
Other wrought products	19,100	17,800	17,800	19,100	293,000	293,000
Fragmentized shredder (auto shredder)	5,970	11,900	11,900	5,970	146,000	146,000
Total old scrap	48,900	119,000	119,000	48,900	1,510,000	1,510,000
Total all classes	116,000	279,000	279,000	116,000	3,580,000	3,580,000

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²May include revisions to previously published data.

³Includes data on imported aluminum-base scrap.

⁴Gross volume of dross and skimmings. Recoverable aluminum content ranges from 15% to 50% of gross weight.

TABLE 5
ALUMINUM ALLOYS PRODUCED AT SECONDARY SMELTERS IN THE UNITED
STATES IN DECEMBER 2022^{1,2}

(Metric tons)

	December				January–December	
	Stocks, opening ³	Production	Net shipments	Stocks, closing	Production	Net shipments
Die-cast alloys:						
13% Si, 360, etc. (0.6% Cu, max.)	2,570	2,870	2,870	2,570	34,400	34,400
380 and variations	7,970	18,900	18,900	7,970	227,000	227,000
Sand and permanent mold:						
95/5 Al-Si, 356, etc. (0.6% Cu, max.)	1,950	2,830	2,830	1,950	34,000	34,000
No. 319 and variations	2,230	2,000	2,000	2,230	24,000	24,000
F-132 alloy and variations	143	221	221	143	2,650	2,650
Al-Zn alloys	172	85	85	172	1,020	1,020
Al-Si alloys (0.6% to 2.0% Cu)	101	166	166	101	1,990	1,990
Al-Cu alloys (1.5% Si, max.)	405	564	564	405	6,770	6,770
Other ⁴	7,250	8,250	8,250	7,250	99,000	99,000
Wrought alloys, extrusion billets	10,700	54,800	54,800	10,700	666,000	666,000
Total all alloys	33,400	90,700	90,700	33,400	1,100,000	1,100,000
Less:						
Primary aluminum consumed	XX	16,600	XX	XX	203,000	XX
Primary silicon consumed	XX	1,680	XX	XX	20,200	XX
Other alloying ingredients consumed	XX	791	XX	XX	9,560	XX
Net metallic recovery from aluminum scrap consumed in production of secondary aluminum ingot ⁵	XX	71,600	XX	XX	864,000	XX

XX Not applicable.

¹Excludes integrated aluminum companies.

²Data are rounded to no more than three significant digits; may not add to totals shown.

³May include revisions to previously published data.

⁴Includes alloys No. 12, Al-Mg, Al-Zn, Al-Cu, Al-Si-Cu-Ni, aluminum-base hardeners, variations of these alloys, plus other aluminum alloys.

⁵No allowance made for melt-loss of primary aluminum and alloying ingredients.

TABLE 6
AVERAGE PRICE OF ALUMINUM IN THE UNITED STATES
AND ON THE LONDON METAL EXCHANGE

(Cents per pound)

Period	Midwest U.S. market price	LME cash price Grade A
2021	138.511	112.281
2021, December	149.417	122.237
2022:		
January	169.020	136.197
February	182.873	147.883
March	198.185	160.448
April	187.079	147.693
May	165.795	128.182
June	149.085	116.235
July	137.994	108.911
August	136.691	110.264
September	125.275	101.129
October	122.548	101.737
November	126.830	105.909
December	129.488	108.612
January–December	152.572	122.767

Source: S&P Global Platts Metals Week.

TABLE 7
AVERAGE BUYING PRICES FOR ALUMINUM SCRAP

(Cents per pound)

Month	Used beverage cans	Mixed low copper clips	Old sheet	Old cast	Turnings (clean and dry)
2021	76.50	73.03	67.87	68.39	67.16
2021, December	85.70	74.60	70.50	70.00	70.40
2022:					
January	99.38	77.75	72.75	72.13	71.75
February	111.63	81.75	78.50	76.13	74.00
March	129.30	86.10	86.20	83.70	79.20
April	122.38	87.50	89.50	85.50	80.75
May	106.25	81.00	76.75	77.63	73.13
June	93.70	74.70	69.60	70.60	66.60
July	76.88	68.50	63.75	65.25	59.38
August	77.50	67.13	61.88	62.63	56.88
September	72.80	65.60	63.30	63.20	52.40
October	73.00	65.75	61.25	61.00	48.50
November	72.38	66.00	62.00	61.75	48.00
December	79.30	66.80	64.50	64.40	48.80
January–December	92.88	74.05	70.83	70.33	63.28

Source: Fastmarkets–AMM.

TABLE 8
U.S. IMPORTS FOR CONSUMPTION OF ALUMINUM IN DECEMBER 2022¹

(Metric tons)

Country or locality	Metals and alloys, crude		Plates, sheets, bars, etc.		Scrap		Total	
	December	January– December	December	January– December	December	January– December	December	January– December
Argentina	20,000	161,000	17	326	--	--	20,000	161,000
Australia	29,700	207,000	(2)	306	--	--	29,700	208,000
Austria	--	25	2,790	35,900	8	85	2,800	36,100
Bahrain	22,400	261,000	1,760	47,200	--	2	24,100	308,000
Belgium	19	561	1,320	13,100	--	--	1,340	13,700
Brazil	396	27,600	2,170	17,000	--	4,970	2,570	49,600
Canada	257,000	2,570,000	13,000	214,000	29,600	430,000	300,000	3,210,000
Chile	--	--	--	2	80	1,800	80	1,800
China ³	46	1,530	23,300	227,000	2	435	23,400	229,000
Colombia	--	--	247	3,540	88	5,090	335	8,630
Costa Rica	--	--	20	173	146	2,270	166	2,440
France	148	2,490	373	5,790	12	200	533	8,490
Germany	173	2,450	4,080	41,900	489	2,360	4,740	46,700
Greece	--	--	1,860	29,100	30	270	1,890	29,400
Guatemala	--	--	--	60	385	7,780	385	7,840
Honduras	--	--	52	2,770	115	1,800	167	4,570
India	5,600	110,000	1,420	20,200	--	1	7,020	130,000
Indonesia	--	944	900	14,800	--	--	900	15,800
Italy	(2)	1,350	1,280	14,200	--	4	1,280	15,500
Japan	--	3	2,490	48,400	16	83	2,510	48,500
Korea, Republic of	100	23,200	4,380	111,000	--	174	4,480	135,000
Malaysia	20	243	520	12,800	--	--	540	13,100
Mexico	809	14,300	5,270	82,700	12,000	204,000	18,100	301,000
Netherlands	122	873	195	2,400	54	1,320	371	4,600
New Zealand	346	1,680	--	7	--	--	346	1,690
Norway	166	5,690	1,170	11,100	--	--	1,340	16,800
Oman	--	624	5,980	118,000	--	--	5,980	119,000
Qatar	8,270	84,800	(2)	86	--	--	8,270	84,900
Romania	--	--	3	819	--	--	3	819
Russia	7,760	184,000	46	6,590	--	--	7,810	191,000
Saudi Arabia	1,790	2,640	775	30,700	--	--	2,560	33,300
South Africa	41	3,040	3,780	45,600	--	2,170	3,820	50,800
Spain	639	2,790	1,070	11,600	--	1	1,710	14,400
Sweden	--	6,320	570	10,800	--	--	570	17,100
Switzerland	--	89	1,550	8,690	--	99	1,550	8,880
Taiwan	31	194	288	5,330	(2)	3	319	5,530
Thailand	--	1,790	4,360	95,500	21	241	4,380	97,500
Turkey	--	13,000	2,950	48,000	--	(2)	2,950	61,100
United Arab Emirates	31,600	459,000	34	7,850	--	97	31,700	467,000
United Kingdom	20	89	677	15,100	--	117	697	15,300
Vietnam	14	39	1,940	36,700	--	22	1,950	36,800
Other	2	508	3,780	65,400	908	19,800	4,690	85,800
Total	388,000	4,150,000	96,400	1,460,000	44,000	685,000	528,000	6,300,000

-- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Less than ½ unit.

³Includes Hong Kong.

Source: U.S. Census Bureau.

TABLE 9
U.S. EXPORTS OF ALUMINUM IN DECEMBER 2022¹

(Metric tons)

Country or locality	Metals and alloys, crude		Plates, sheets, bars, etc.		Scrap		Total	
	December	January– December	December	January– December	December	January– December	December	January– December
Australia	78	965	107	1,880	--	--	185	2,850
Belgium	--	8	195	1,390	642	16,900	837	18,300
Brazil	--	49	308	4,630	336	2,510	644	7,180
Canada	4,040	66,600	21,300	317,000	10,000	122,000	35,300	506,000
China ²	166	1,950	1,460	13,900	12,000	152,000	13,600	168,000
Colombia	--	33	32	381	59	1,970	91	2,390
Dominican Republic	3	8	48	439	187	2,780	238	3,230
France	514	5,250	433	9,070	20	856	967	15,200
Germany	35	4,860	483	7,370	121	4,750	639	17,000
Guatemala	--	1	7	103	--	2	7	106
India	13	645	191	2,340	33,300	459,000	33,500	462,000
Indonesia	--	3	58	111	2,020	60,800	2,080	60,900
Ireland	1	44	279	1,660	--	--	280	1,710
Israel	--	2	586	7,110	102	102	688	7,220
Italy	(3)	73	121	1,620	328	12,100	449	13,800
Jamaica	--	27	10	28	--	--	10	55
Japan	34	1,170	750	9,360	3,800	29,400	4,590	40,000
Korea, Republic of	61	1,340	2,300	19,500	26,700	295,000	29,100	316,000
Malaysia	5,950	50,900	681	6,910	27,300	390,000	33,900	447,000
Mexico	12,100	162,000	21,800	284,000	10,700	195,000	44,700	641,000
Netherlands	(3)	78	30	523	998	7,870	1,030	8,470
New Zealand	--	11	79	1,100	--	--	79	1,120
Norway	--	8	(3)	29	119	259	119	296
Pakistan	23	44	2	51	1,240	17,600	1,260	17,700
Panama	(3)	3	3	64	1	41	4	108
Philippines	--	4	41	306	496	6,310	537	6,620
Poland	--	14	211	1,140	--	11	211	1,170
Romania	2	2	323	3,620	--	--	325	3,620
Russia	--	--	--	8	--	2,720	--	2,730
Saudi Arabia	--	(3)	2	67	--	--	2	67
Singapore	73	552	554	5,450	87	843	714	6,850
Spain	1	7	179	801	325	5,360	505	6,160
Taiwan	330	1,440	400	6,440	3,140	42,200	3,870	50,100
Thailand	--	130	169	1,490	14,200	115,000	14,400	117,000
Turkey	--	3	486	3,410	156	12,600	642	16,000
United Arab Emirates	2	46	454	5,350	637	5,720	1,090	11,100
United Kingdom	22	569	553	9,460	74	2,070	649	12,100
Vietnam	2	10	148	2,660	1,100	13,900	1,250	16,600
Other	129	869	451	5,370	1,600	18,000	2,180	24,200
Total	23,600	300,000	55,200	736,000	152,000	2,000,000	231,000	3,030,000

-- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Includes Hong Kong.

³Less than ½ unit.

Source: U.S. Census Bureau.