Mineral Industry Surveys

For information, contact:
Ruth F. Schulte, Chromium Commodity Specialist
National Minerals Information Center
U.S. Geological Survey
989 National Center
Reston, VA 20192
Telephone: (703) 648-4963, Fax: (703) 648-7757
Email: rschulte@usgs.gov

Benjamin N. Bryden (Data)
Telephone: (703) 648-7953
Fax: (703) 648-7975
Email: bbryden@usgs.gov

Internet: https://www.usgs.gov/centers/national-minerals-information-center

CHROMIUM IN DECEMBER 2021

Reported consumption of chromium, on a gross weight basis, in December 2021 was unchanged compared with consumption of chromium in November 2021 and decreased by 3% compared with consumption in December 2020. Compared with consumption in 2020, consumption of chromium in 2021 decreased by 6%. Reported consumer stocks were unchanged compared with stocks in November 2021 and increased by 5% compared with those of December 2020 (tables 1, 2).

Stainless steel production decreased by 7% in December 2021 compared with production in November 2021 and decreased by 15% compared with production in December 2020 (table 1). Annual stainless steel production in 2021 increased by 10% compared with production in 2020. Government stockpile inventories for chromium metal were unchanged compared with those in November 2021and decreased by 5% compared with December 2020. Government stocpile inventories for high-carbon ferrochromium decreased by 7% whereas inventories of low-carbon ferrochromium were essentially unchanged compared with those in November 2021. Compared to inventories in December 2020, high-carbon ferrochromium inventories decreased by 31% and low-carbon ferrochromium inventories increased slightly (table 3).

Imports of chromite ore, chromium ferroalloys, stainless steel, and stainless steel scrap commonly fluctuate from month to month (fig. 1, table 1). In December 2021, imports of all

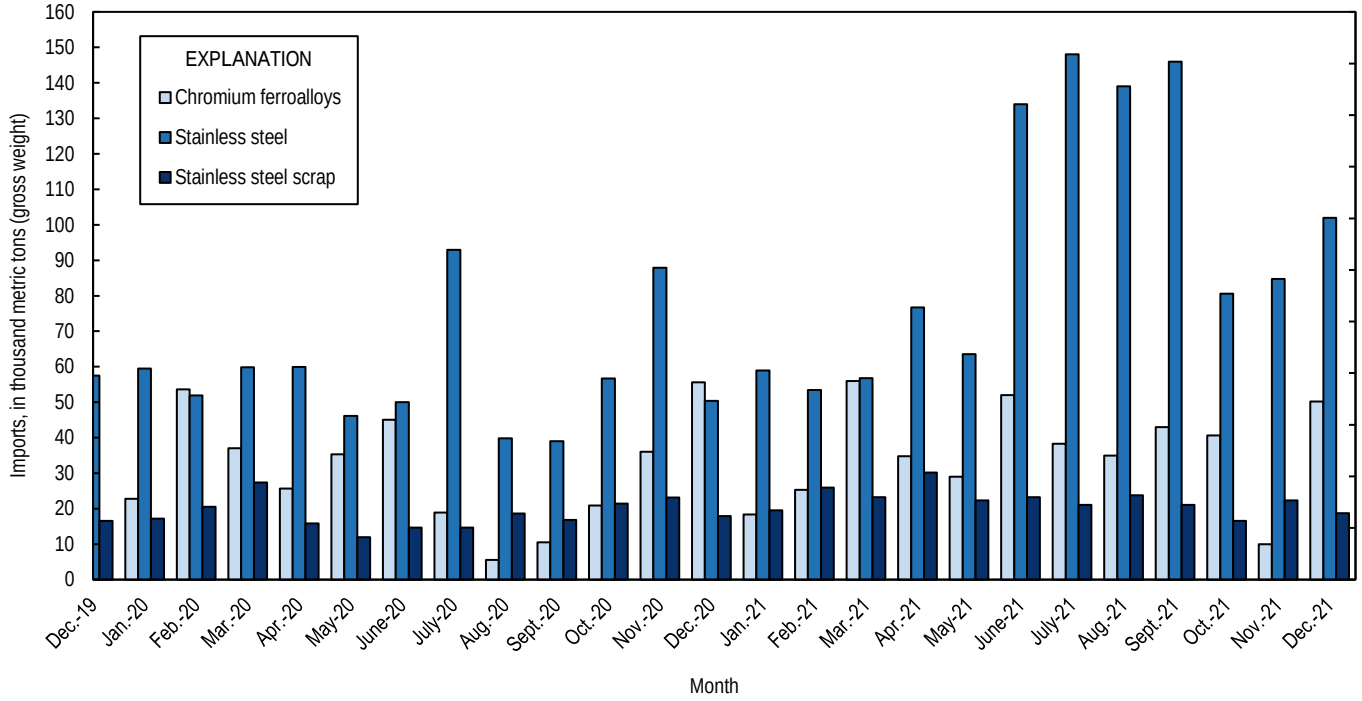

Figure 1. Chromium ferroalloys, stainless steel, and stainless steel scrap imports from December 2019 through December 2021. Source: U.S. Census Bureau.

grades of chromium ferroalloys, including ferrochromium silicon, increased almost fivefold compared with imports of chromium ferroalloys in November 2021 and decreased by 10% compared with those in in December 2020. Annual imports of chromium ferroalloys in 2021 increased by 18% compared with annual imports in 2020.

Stainless steel imports in December 2021 increased by 20% compared with imports in November 2021 and were more than double those in December 2020. Stainless steel scrap imports decreased by 16% in December 2021 compared with imports in November 2021 and increased by 4% compared with those in December 2020. Annual imports of stainless steel in 2021 increased by 65% compared with imports in 2021 and stainless steel scrap imports increased by 22% (table 1).

In December 2021, the leading import sources for ferrochromium into the United States were, in descending order of quantity by gross weight, South Africa, Russia, and Turkey (table 6), whereas the leading import sources for chromium metal were Russia, the United Kingdom, and France (table 7).

The U.S. chromium metal (99% chromium) average price was $5.65 per pound in December 2021, unchanged from the average price in November 2021, and was 80% more than the average price in December 2020. The U.S. high-carbon ferrochromium (62%–70% chromium) average price was 221.50 cents per pound of contained chromium in December 2021, a slight increase from the average price in November 2021, and more than double the average price in December 2020 (fig. 2) (CRU Group, 2021).

Industry News

Indian Metals & Ferro Alloys Ltd. (IMFA) (India) announced plans to increase chromite production capacity from 650,000 metric tons per year (t/yr) to 1.2 million metric tons per year from its Mahagiri and Sukinda mines in Odisha by March 2027. A 100,000-t/yr expansion at IMFA's Kalinganagar ferrochromium smelter was slated to accommodate the additional ore (CRU Group, 2021).

References Cited

CRU Group, 2021, Chrome monitor—Indian ferroalloy producer to almost double mine capacity: CRU Group, December 1. (Accessed December 2, 2021, via http://www.crugroup.com/.)

CRU Group, 2022, CRU prices: CRU Group, January 3. (Accessed February 11, 2022, via http://www.crugroup.com/.)

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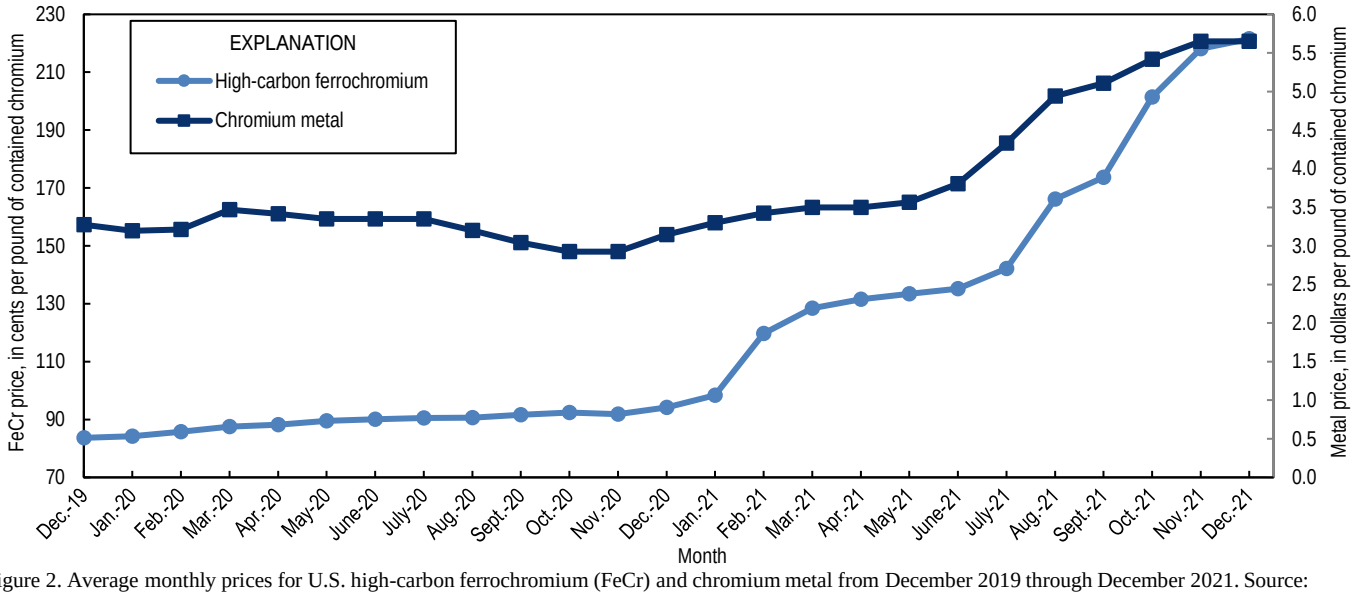

Figure 2. Average monthly prices for U.S. high-carbon ferrochromium (FeCr) and chromium metal from December 2019 through December 2021. Source: CRU Group.

TABLE 1
U.S. SALIENT CHROMIUM STATISTICS[1]

(Metric tons, gross weight)

	2020	2021			
	January–December	October	November	December	January–December[2]
Production, stainless steel[3]	2,140,000	186,000	183,000	169,000	2,370,000
Components of U.S. supply:					
Stainless steel scrap receipts	682,000	56,400 e	55,700 e	51,500 e	657,000 e
Stainless steel scrap consumption	1,040,000	71,100 e	70,000 e	64,900 e	950,000 e
Imports for consumption:					
Chromite ore	101,000	9,710	41,500	3,980	146,000
Ferrochromium:					
More than 4% carbon	310,000	36,800	6,990	32,600	347,000
More than 3% but not more than 4% carbon	212	--	--	--	6,700
More than 0.5% but not more than 3% carbon	3,360	--	--	--	1,810
Not more than 0.5% carbon	37,400	1,970	1,890	17,600	57,700
Ferrochromium silicon	15,800	1,740	1,170	--	19,800
Total ferroalloy imports	367,000	40,600	10,000	50,200	433,000
Chromium metal[4]	11,600	995	1,290	931	12,100
Stainless steel	694,000	80,600	84,700	102,000	1,140,000
Stainless steel scrap	219,000	16,600	22,300	18,700	268,000
Distribution of U.S. supply:					
Consumption, industry, chromium ferroalloys and metal	350,000	26,100	26,100	26,100	314,000
Exports:					
Chromite ore	1,780	142	219	50	2,110
Chromium ferroalloys:					
High-carbon ferrochromium	949	148	132	199	1,650
Low-carbon ferrochromium	393	604	333	357	1,580
Ferrochromium silicon	238	--	--	2	154
Total ferroalloy exports	1,580	752	465	558	3,390
Chromium metal	379	21	21	29	456
Stainless steel	325,000	27,700	28,300	26,100	355,000
Stainless steel scrap	314,000	25,300	25,700	22,000	304,000
Stocks at end of period:					
Consumer, industry, chromium ferroalloys and metal	9,320	7,750	7,730	7,730	7,730
Government stockpile:					
Chromium ferroalloys	59,600	53,000	51,900	49,900	49,900
Chromium metal	3,750	3,620	3,560	3,560	3,560

[e]Estimated. -- Zero.

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

[2]May include revised data that are not broken out by specific month(s).

[3]Data on stainless steel production reported by American Iron and Steel Institute; monthly, quarterly, and year–to–date production of stainless and heat-resisting raw steel.

[4]Includes waste and scrap and other.

TABLE 2
U.S. CONSUMPTION AND STOCKS OF CHROMIUM PRODUCTS[1]

(Metric tons, gross weight unless otherwise noted)

	2021		
	November	December	January–December[2]
Consumption by end use:			
Steel:			
Carbon steel	W	W	W
High-strength low-alloy steel	136	136	1,630
Stainless and heat-resisting steel	22,100	22,100	265,000
Unspecified steel[3]	3,350	3,350	40,200
Superalloys	210 r	210	2,480
Other alloys and uses[4]	W	W	W
Total	26,100	26,100	314,000
Total, chromium content	15,100	15,100	181,000
Consumption by material:			
Low-carbon ferrochromium	1,660	1,660	20,000
High-carbon ferrochromium	23,000	23,000	277,000
Ferrochromium silicon	W	W	W
Chromium metal	147 r	147	1,730
Chromite ore	141	141	1,700
Chromium-aluminum alloy	W	W	W
Other chromium materials	W	W	W
Total	26,100	26,100	314,000
Total, chromium content	15,100	15,100	181,000
Consumer stocks:			
Low-carbon ferrochromium	1,070	1,070	1,070
High-carbon ferrochromium	2,220	2,220	2,220
Ferrochromium silicon	W	W	W
Chromium metal	22	22	22
Chromite ore	4,100	4,100	4,100
Chromium-aluminum alloy	W	W	W
Other chromium materials	W	W	W
Total	7,730	7,730	7,730
Total, chromium content	4,800	4,800	4,800

[r]Revised. W Withheld to avoid disclosing company proprietary data; included in "Total."
[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]May include revised data that are not broken out by specific month(s).
[3]Includes electrical, full alloy, tool, and unspecified steel end uses.
[4]Includes cast irons, welding and alloy hard-facing rods and materials, wear- and corrosion-resistant alloys, and aluminum, copper, magnetic, nickel, and other alloys.

TABLE 3
U.S. GOVERNMENT STOCKPILE INVENTORY OF
CHROMIUM MATERIALS[1]

(Metric tons)

	Chromium ferroalloys		
	High-carbon ferro-chromium	Low-carbon ferro-chromium	Chromium metal
2020, December	33,000	26,600	3,750
2021:			
January	33,000	26,600	3,750
February	32,400	26,500	3,690
March	28,800	27,500	3,690
April	27,700	27,500	3,690
May	27,700	27,500	3,690
June	27,500	27,500	3,690
July	27,300	27,500	3,690
August	26,200	27,500	3,620
September	25,600	27,400	3,620
October	25,600	27,400	3,620
November	24,700	27,200	3,560
December	22,900	27,000	3,560

[1]Data are rounded to no more than three significant digits.

Source: Defense Logistics Agency, DLA Strategic Materials.

TABLE 4
U.S. EXPORTS OF CHROMITE ORE, CHROMIUM FERROALLOYS, AND METAL[1]

	Chromite ore		Chromium ferroalloys[2]			Chromium metal[3]	
	Gross weight (metric tons)	Value (thousands)	Gross weight (metric tons)	Chromium content (metric tons)	Value (thousands)	Gross weight (metric tons)	Value (thousands)
2020:							
December	222	$136	252	133	$306	16	$531
January–December[4]	1,780	1,040	1,580	893	2,280	379	9,970
2021:							
January	70	55	24	15	43	44	1,050
February	420	264	111	58	169	30	650
March	208	147	209	100	401	47	783
April	157	128	28	17	54	25	659
May	115	106	94	59	155	66	1,200
June	155	86	82	43	142	86	1,200
July	156	104	274	147	529	15	406
August	116	81	435	212	600	47	1,000
September	302	191	354	167	484	25	773
October	142	95	752	403	2,260	21	588
November	219	135	465	254	947	21	414
December	50	37	558	179	676	29	924
January–December[4]	2,110	1,430	3,390	1,650	6,460	456	9,660

[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]Includes low- and high-carbon ferrochromium and ferrochromium silicon.
[3]Includes chromium metal, waste and scrap, and unwrought powders.
[4]May include revised data that are not broken out by specific month(s).

Source: U.S. Census Bureau.

TABLE 5
U.S. IMPORTS FOR CONSUMPTION OF CHROMITE ORE, FERROCHROMIUM, AND CHROMIUM METAL[1]

(Metric tons)

	2020	2021		
	January–December	November	December	January–December[2]
Chromite ore:				
Not more than 40% chromic oxide:				
Gross weight	3,600	1,270	680	15,800
Chromic oxide content	909	272	154	3,490
More than 40% but less than 46% chromic oxide:				
Gross weight	11,000	4,010	1,790	21,400
Chromic oxide content	4,780	1,730	772	9,270
46% or more chromic oxide:				
Gross weight	86,300	36,200	1,510	108,000
Chromic oxide content	77,500	35,000	700	94,300
Total, all grades:				
Gross weight	101,000	41,500	3,980	146,000
Chromic oxide content	83,200	37,000	1,630	107,000
Ferrochromium:				
Low-carbon:[3]				
Not more than 0.5% carbon:				
Gross weight	37,400	1,890	17,600	57,700
Chromium content	25,200	1,410	11,900	40,400
More than 0.5% but not more than 3% carbon:				
Gross weight	3,360	--	--	1,810
Chromium content	2,260	--	--	1,250
Total, low-carbon:				
Gross weight	40,800	1,890	17,600	59,500
Chromium content	27,400	1,410	11,900	41,600
Medium-carbon:[4]				
Gross weight	212	--	--	6,700
Chromium content	116	--	--	3,420
High-carbon:[5]				
Gross weight	310,000	6,990	32,600	347,000
Chromium content	169,000	4,680	16,700	191,000
Total, all grades:				
Gross weight	351,000	8,870	50,200	413,000
Chromium content	196,000	6,090	28,500	236,000
Chromium metal:				
Unwrought powders	9,730	1,120	814	10,200
Waste and scrap	168	20	10	112
Other than waste and scrap and unwrought powders	1,740	156	107	1,730
Total, all grades	11,600	1,290	931	12,100

-- Zero.

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

[2]May include revised data that are not broken out by specific month(s).

[3]Ferrochromium containing not more than 3% carbon.

[4]Ferrochromium containing more than 3% carbon but not more than 4% carbon.

[5]Ferrochromium containing more than 4% carbon.

Source: U.S. Census Bureau.

TABLE 6

U.S. IMPORTS FOR CONSUMPTION OF FERROCHROMIUM IN 2021, BY GRADE AND COUNTRY OR LOCALITY[1]

Grade and country or locality	December			January–December[2]		
	Gross weight (metric tons)	Chromium content (metric tons)	Value[3] (thousands)	Gross weight (metric tons)	Chromium content (metric tons)	Value[3] (thousands)
High-carbon ferrochromium:[4]						
Albania	440	298	$786	4,920	3,470	$7,200
Brazil	--	--	--	2,030	1,130	2,490
Finland	--	--	--	24,500	13,000	24,700
Germany	--	--	--	9	6	18
India	--	--	--	1,340	823	1,190
Kazakhstan	313	217	659	60,400	41,700	117,000
Mexico	--	--	--	20	13	55
Russia	--	--	--	17,600	11,100	26,200
South Africa	27,900	13,600	38,300	205,000	99,900	229,000
Sweden	741	492	1,400	12,600	8,330	18,700
Turkey	3,230	2,080	6,810	7,830	5,110	13,700
Zimbabwe	--	--	--	10,500	5,870	8,310
Total	32,600	16,700	47,900	347,000	191,000	449,000
Medium-carbon ferrochromium:[5]						
China	--	--	--	5	3	2
Russia	--	--	--	195	105	144
South Africa	--	--	--	6,500	3,310	5,340
Total	--	--	--	6,700	3,420	5,490
Low-carbon ferrochromium:[6]						
More than 0.5% but not more than 3% carbon						
Brazil	--	--	--	318	197	436
Kazakhstan	--	--	--	1,490	1,060	4,700
Total	--	--	--	1,810	1,250	5,140
Not more than 0.5% carbon:						
Belgium	100	70	444	468	357	1,610
Brazil	--	--	--	897	562	1,360
China	--	--	--	30	18	98
Germany	945	720	3,050	8,670	6,660	27,600
Japan	239	169	923	1,580	1,110	5,630
Kazakhstan	--	--	--	13,600	9,840	47,900
Russia	16,000	10,700	79,100	30,900	20,800	120,000
Turkey	250	175	1,090	1,540	1,070	4,180
United Kingdom	--	--	--	2	1	16
Total	17,600	11,900	84,600	57,700	40,400	209,000
All grades:						
Albania	440	298	786	4,920	3,470	7,200
Belgium	100	70	444	468	357	1,610
Brazil	--	--	--	3,250	1,890	4,280
China	--	--	--	35	21	101
Finland	--	--	--	24,500	13,000	24,700
Germany	945	720	3,050	8,680	6,670	27,600
India	--	--	--	1,340	823	1,190
Japan	239	169	923	1,580	1,110	5,630
Kazakhstan	313	217	659	75,500	52,600	170,000
Mexico	--	--	--	20	13	55
Russia	16,000	10,700	79,100	48,600	32,000	147,000
South Africa	27,900	13,600	38,300	211,000	103,000	235,000
Sweden	741	492	1,400	12,600	8,330	18,700
Turkey	3,480	2,260	7,900	9,370	6,180	17,900
United Kingdom	--	--	--	2	1	16
Zimbabwe	--	--	--	10,500	5,870	8,310
Total	50,200	28,500	133,000	413,000	236,000	668,000

-- Zero.

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

[2]May include revised data that are not broken out by specific month(s).

[3]Customs import value generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the merchandise into the United States.

[4]Ferrochromium containing more than 4% carbon.

[5]Ferrochromium containing more than 3% carbon but not more than 4% carbon.

[6]Ferrochromium containing not more than 3% carbon.

TABLE 7
U.S. IMPORTS FOR CONSUMPTION OF CHROMIUM METAL IN 2021,
BY GRADE AND BY COUNTRY OR LOCALITY[1]

Grade and country or locality	December		January–December[2]	
	Gross weight (metric tons)	Value[3] (thousands)	Gross weight (metric tons)	Value[3] (thousands)
Unwrought powders:				
Belgium	--	--	3	$88
China	73	$849	1,190	10,500
France	203	2,550	2,150	19,700
Germany	16	155	643	3,880
India	--	--	156	1,420
Japan	--	--	1	42
Korea, Republic of	--	--	1	22
Netherlands	--	--	48	346
Russia	314	2,930	3,710	28,300
Spain	--	--	106	511
United Kingdom	208	3,270	2,230	25,800
Total	814	9,750	10,200	90,600
Waste and scrap:				
Canada	--	--	30	122
Dominican Republic	--	--	1	5
Germany	--	--	1	10
Japan	--	--	5	35
Liechtenstein	--	--	1	6
Taiwan	--	--	1	15
United Kingdom	10	67	73	480
Total	10	67	112	673
Other than waste and scrap and unwrought powders:				
Canada	--	--	(4)	7
China	23	155	62	1,170
Estonia	--	--	2	71
Germany	2	318	18	1,260
Italy	--	--	2	49
Japan	--	--	6	309
Liechtenstein	--	--	(4)	21
Malaysia	--	--	(4)	44
Netherlands	--	--	(4)	7
Russia	71	839	1,350	9,610
South Africa	--	--	76	680
Spain	--	--	135	648
Taiwan	--	--	(4)	90
United Kingdom	10	165	76	1,020
Total	107	1,480	1,730	15,000
All grades:				
Belgium	--	--	3	88
Canada	--	--	30	130
China	96	1,000	1,250	11,700
Dominican Republic	--	--	1	5
Estonia	--	--	2	71
France	203	2,550	2,150	19,700
Germany	19	473	662	5,150
India	--	--	156	1,420
Italy	--	--	2	49
Japan	--	--	12	386
Korea, Republic of	--	--	1	22
Liechtenstein	--	--	2	27
Malaysia	--	--	(4)	44
Netherlands	--	--	48	353
Russia	385	3,770	5,060	37,900
South Africa	--	--	76	680
Spain	--	--	241	1,160
Taiwan	--	--	1	105
United Kingdom	228	3,500	2,380	27,300
Total	931	11,300	12,100	106,000

-- Zero.

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

[2]May include revised data that are not broken out by specific month(s).

[3]Customs import value generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other charges incurred in bringing the merchandise into the United States.

[4]Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 8
U.S. STAINLESS STEEL TRADE, BY PRODUCT, IN 2021[1]

Stainless steel product	December		January–December[2]	
	Gross weight (metric tons)	Value[3] (thousands)	Gross weight (metric tons)	Value[3] (thousands)
Exports:				
Ingot	2,010	$9,590	17,500	$91,600
Flat-rolled (width > 600 mm)	14,500	56,600	206,000	690,000
Flat-rolled (width < 600 mm)	4,080	26,600	57,500	350,000
Bars and rods in irregular coils	202	1,040	2,230	11,700
Other bars and rods	2,270	27,100	26,500	289,000
Wire	543	10,600	8,510	129,000
Tubes, pipes, hollow profiles	2,510	25,500	37,000	345,000
Total	26,100	157,000	355,000	1,910,000
Stainless steel scrap	22,000	32,400	304,000	341,000
Grand total	48,100	189,000	659,000	2,250,000
Imports:				
Ingot	6,430	50,500	389,000	621,000
Flat-rolled (width > 600 mm)	53,800	162,000	362,000	1,020,000
Flat-rolled (width < 600 mm)	7,070	27,200	63,100	223,000
Bars and rods in irregular coils	5,570	22,600	42,200	156,000
Other bars and rods	11,500	51,800	122,000	508,000
Wire	5,080	23,500	45,500	200,000
Tubes, pipes, hollow profiles	12,000	75,100	118,000	716,000
Total	102,000	413,000	1,140,000	3,450,000
Stainless steel scrap	18,700	28,000	268,000	368,000
Grand total	120,000	441,000	1,410,000	3,820,000

[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]May include revised data that are not broken out by specific month(s).
[3]Export value is free alongside ship. Import value is Customs import value, which generally represents a value in the foreign country and therefore excludes U.S. import duties, freight, insurance, and other incurred in bringing the merchandise into the United States.

Source: U.S. Census Bureau.