

Mineral Industry Surveys

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CHROMIUM IN NOVEMBER 2021

Reported consumption of chromium, on a gross weight basis, in November 2021 was unchanged compared with consumption of chromium in October 2021 and decreased by 3% compared with consumption in November 2020. Reported consumer stocks were essentially unchanged compared with stocks in October 2021 and increased by 10% compared with those of November 2020 (tables 1, 2).

Stainless steel production decreased slightly in November 2021 compared with production in October 2021 and decreased slightly compared with production in November 2020 (table 1). Year-to-date production through November 2021 increased by 13% compared with year-to-date production through November 2020. Government stockpile

inventories for chromium metal decreased slightly compared with those in October 2021 and decreased by 6% compared with November 2020. Government stockpile inventories for high-carbon ferrochromium decreased by 4% whereas inventories of low-carbon ferrochromium were essentially unchanged compared with those in October 2021. Compared to inventories in November 2020, high-carbon ferrochromium inventories decreased by 27% 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 November 2021, imports of all grades of chromium ferroalloys, including ferrochromium

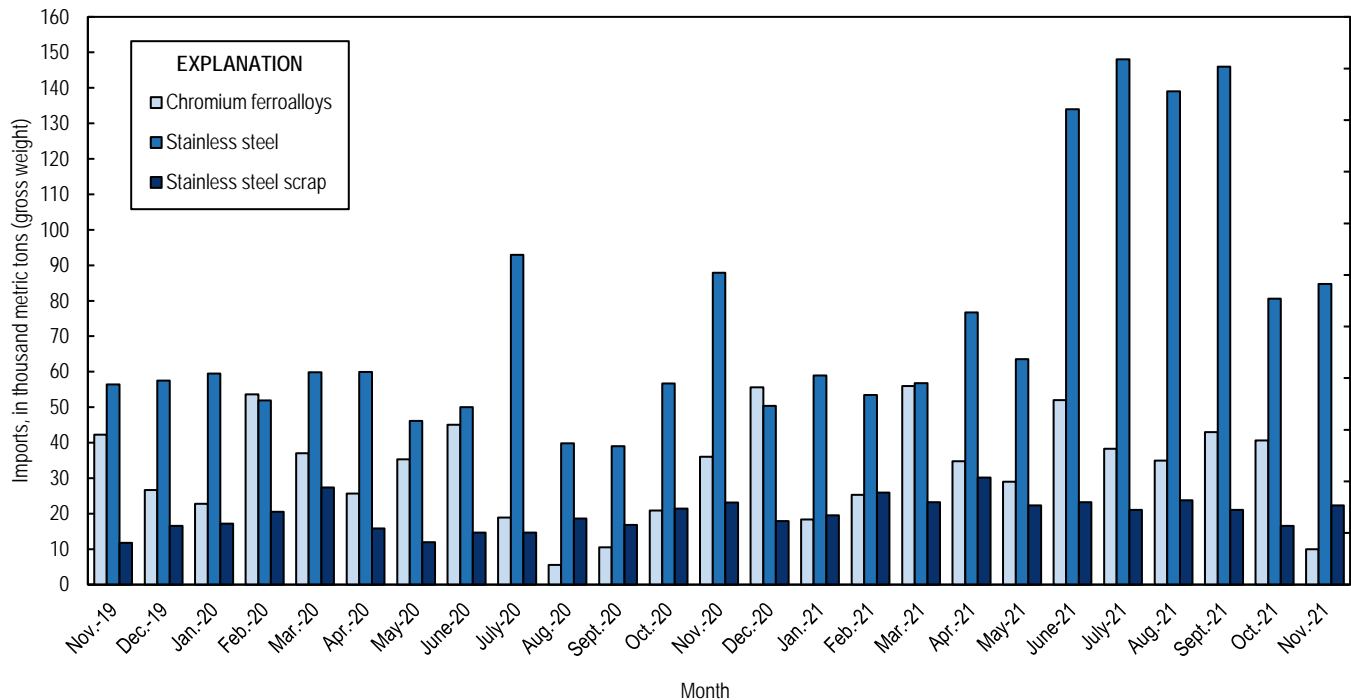


Figure 1. Chromium ferroalloys, stainless steel, and stainless steel scrap imports from November 2019 through November 2021. Source: U.S. Census Bureau.

silicon, decreased by 75% compared with imports of chromium ferroalloys in October 2021 and decreased by 72% compared with those in November 2020.

Stainless steel imports in November 2021 increased by 5% compared with imports in October 2021 and decreased by 4% compared with imports in November 2020. Stainless steel scrap imports increased by 34% in November 2021 compared with imports in October 2021 and decreased by 3% compared with those in November 2020 (table 1).

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

Exports of chromite ore, chromium ferroalloys, chromium metal, and stainless steel also frequently fluctuate from month to month (table 1, table 4). Exports of chromium ferroalloys decreased by 38% in November 2021 compared with exports in October 2021 and increased more than fivefold compared with exports in November 2020. The U.S. does not produce chromium ferroalloys, so the change in exports is likely owing to the sale of company stocks or re-exports. Stainless steel exports in November 2021 increased slightly compared with exports in October 2021 and decreased slightly compared with those of November 2020 (table 1).

The U.S. chromium metal (99% Cr) average price was \$5.65 per pound in November 2021, a 4% increase from the

average price in October 2021, and was almost double the average price in November 2020. The U.S. high-carbon FeCr (62%–70% chromium) average price was 218.17 cents per pound of contained chromium in November 2021, an 8% increase from the average price in October 2021, and more than double the average price in November 2020 (fig. 2) (CRU Group, 2021).

Reference Cited

CRU Group, 2021, CRU prices: CRU Group, December 1. (Accessed December 6, 2021, via <http://www.crugroup.com/>.)

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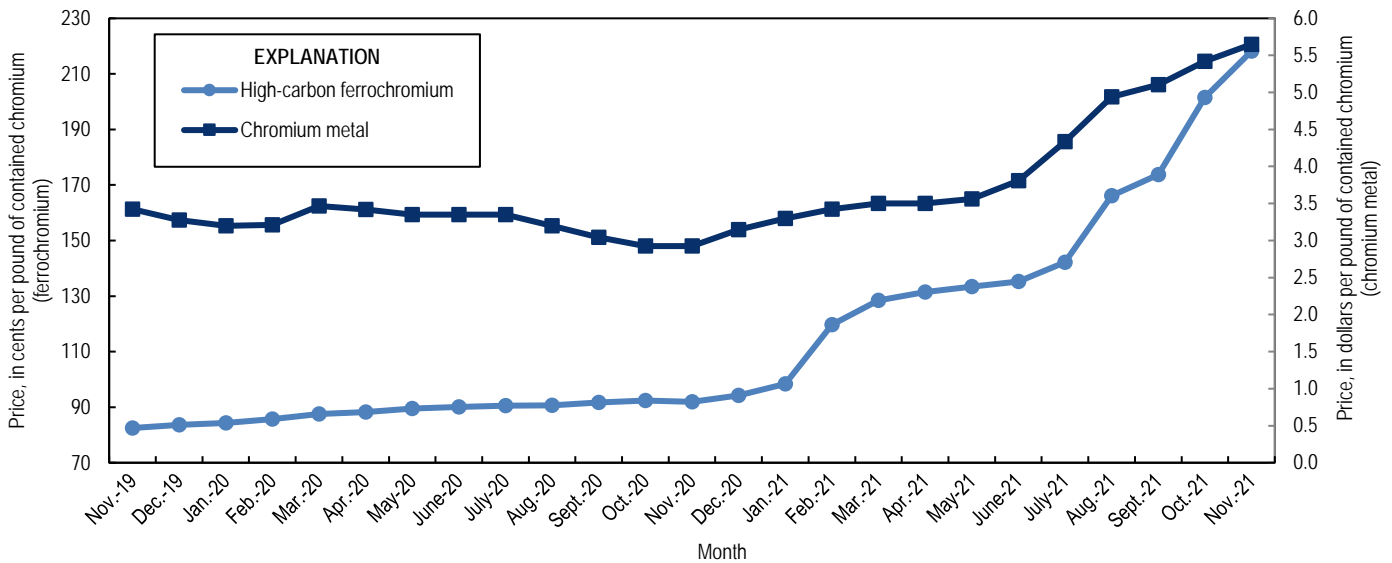


Figure 2. Average monthly prices for U.S. chromium metal and high-carbon ferrochromium from November 2019 through November 2021. Source: CRU Group.

TABLE 1
U.S. SALIENT CHROMIUM STATISTICS¹

(Metric tons, gross weight)

	2020	2021			
	January– December	September	October	November	January– November ²
Production, stainless steel ³	2,140,000	179,000	186,000	183,000	2,200,000
Components of U.S. supply:					
Stainless steel scrap receipts	682,000	54,400	56,400 ^e	55,700 ^e	606,000 ^e
Stainless steel scrap consumption	1,040,000	68,000 ^e	71,100 ^e	70,000 ^e	885,000 ^e
Imports for consumption:					
Chromite ore	101,000	5,570	9,710	41,500	142,000
Ferrochromium:					
More than 4% carbon	310,000	37,700	36,800	6,990	314,000
More than 3% but not more than 4% carbon	212	118	--	--	6,700
More than 0.5% but not more than 3% carbon	3,360	189	--	--	1,810
Not more than 0.5% carbon	37,400	3,530	1,970	1,890	40,100
Ferrochromium silicon	15,800	1,490	1,740	1,170	19,800
Total ferroalloy imports	367,000	43,000	40,600	10,000	382,000
Chromium metal ⁴	11,600	689	995	1,290	11,100
Stainless steel	694,000	146,000	80,600	84,700	1,040,000
Stainless steel scrap	219,000	21,100	16,600	22,300	249,000
Distribution of U.S. supply:					
Consumption, industry, chromium ferroalloys and metal	350,000	26,100	26,100	26,100	287,000
Exports:					
Chromite ore	1,780	302	142	219	2,060
Chromium ferroalloys:					
High-carbon ferrochromium	949	296	148	132	1,450
Low-carbon ferrochromium	393	58	604	333	1,220
Ferrochromium silicon	238	--	--	--	152
Total ferroalloy exports	1,580	354	752	465	2,830
Chromium metal	379	25	21	21	426
Stainless steel	325,000	30,000	27,700	28,300	329,000
Stainless steel scrap	314,000	23,700	25,300	25,700	282,000
Stocks at end of period:					
Consumer, industry, chromium ferroalloys and metal	9,320	7,730	7,750	7,730	7,730
Government stockpile:					
Chromium ferroalloys	59,600	53,000	53,000	51,900	51,900
Chromium metal	3,750	3,620	3,620	3,560	3,560

^eEstimated. -- Zero.

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

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

³Data 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.

⁴Includes waste and scrap and other.

TABLE 2
U.S. CONSUMPTION AND STOCKS OF CHROMIUM PRODUCTS¹

(Metric tons, gross weight unless otherwise noted)

	2021		
	October	November	January– November ²
Consumption by end use:			
Steel:			
Carbon steel	W	W	W
High-strength low-alloy steel	136	136	1,500
Stainless and heat-resisting steel	22,100	22,100	243,000
Unspecified steel ³	3,350	3,350	36,900
Superalloys	219	209	2,270
Other alloys and uses ⁴	W	W	W
Total	26,100	26,100	287,000
Total, chromium content	15,100	15,100	166,000
Consumption by material:			
Low-carbon ferrochromium	1,650	1,660	18,400
High-carbon ferrochromium	23,000	23,000	253,000
Ferrochromium silicon	W	W	W
Chromium metal	144	146	1,590
Chromite ore	141	141	1,550
Chromium-aluminum alloy	W	W	W
Other chromium materials	W	W	W
Total	26,100	26,100	287,000
Total, chromium content	15,100	15,100	166,000
Consumer stocks:			
Low-carbon ferrochromium	884	1,070	1,070
High-carbon ferrochromium	2,220	2,220	2,220
Ferrochromium silicon	W	W	W
Chromium metal	18	22	22
Chromium-aluminum alloy	W	W	W
Other chromium materials	W	W	W
Total	7,750	7,730	7,730
Total, chromium content	4,610	4,800	4,800

W Withheld to avoid disclosing company proprietary data; included in "Total."

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

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

³Includes electrical, full alloy, tool, and unspecified steel end uses.

⁴Includes 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 MATERIALS¹

(Metric tons)

	Chromium ferroalloys		Chromium metal
	High-carbon ferro- chromium	Low-carbon ferro- chromium	
2020:			
November	33,900	26,800	3,790
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

¹Data 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 METAL¹

	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:							
November	59	\$45	83	51	\$141	22	\$580
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
January–November ⁴	2,060	1,390	2,830	1,470	5,790	426	8,740

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

²Includes low- and high-carbon ferrochromium and ferrochromium silicon.

³Includes chromium metal, waste and scrap, and unwrought powders.

⁴May 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 METAL¹

(Metric tons)

	2020	2021		
	January– December	October	November	January– November ²
Chromite ore:				
Not more than 40% chromic oxide:				
Gross weight	3,600	81	1,270	15,100
Chromic oxide content	909	31	272	3,340
More than 40% but less than 46% chromic oxide:				
Gross weight	11,000	4,080	4,010	19,600
Chromic oxide content	4,780	1,760	1,730	8,500
46% or more chromic oxide:				
Gross weight	86,300	5,550	36,200	107,000
Chromic oxide content	77,500	3,890	35,000	93,600
Total, all grades:				
Gross weight	101,000	9,710	41,500	142,000
Chromic oxide content	83,200	5,680	37,000	105,000
Ferrochromium:				
Low-carbon: ³				
Not more than 0.5% carbon:				
Gross weight	37,400	1,970	1,890	40,100
Chromium content	25,200	1,450	1,410	28,500
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	1,970	1,890	41,900
Chromium content	27,400	1,450	1,410	29,800
Medium-carbon: ⁴				
Gross weight	212	--	--	6,700
Chromium content	116	--	--	3,420
High-carbon: ⁵				
Gross weight	310,000	36,800	6,990	314,000
Chromium content	169,000	19,500	4,680	174,000
Total, all grades:				
Gross weight	351,000	38,800	8,870	363,000
Chromium content	196,000	21,000	6,090	207,000
Chromium metal:				
Unwrought powders	9,730	904	1,120	9,420
Waste and scrap	168	13	20	102
Other than waste and scrap and unwrought powders	1,740	78	156	1,620
Total, all grades	11,600	995	1,290	11,100

-- Zero.

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

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

³Ferrochromium containing not more than 3% carbon.

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

⁵Ferrochromium 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 LOCALITY¹

Grade and country or locality	November			January–November 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	443	308	\$760	4,480	3,180	\$6,420
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	5,550	3,800	15,600	60,100	41,500	116,000
Mexico	--	--	--	20	13	55
Russia	--	--	--	17,600	11,100	26,200
South Africa	507	261	611	177,000	86,300	191,000
Sweden	490	309	825	11,800	7,840	17,300
Turkey	--	--	--	4,600	3,030	6,900
Zimbabwe	--	--	--	10,500	5,870	8,310
Total	6,990	4,680	17,800	314,000	174,000	401,000
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	--	--	--	368	287	1,160
Brazil	--	--	--	897	562	1,360
China	--	--	--	30	18	98
Germany	925	718	2,920	7,730	5,940	24,500
Japan	20	14	68	1,340	941	4,710
Kazakhstan	794	576	3,830	13,600	9,840	47,900
Russia	148	102	741	14,900	10,000	41,300
Turkey	--	--	--	1,290	892	3,090
United Kingdom	--	--	--	2	1	16
Total	1,890	1,410	7,560	40,100	28,500	124,000
All grades:						
Albania	443	308	760	4,480	3,180	6,420
Belgium	--	--	--	368	287	1,160
Brazil	--	--	--	3,250	1,890	4,280
China	--	--	--	35	21	101
Finland	--	--	--	24,500	13,000	24,700
Germany	925	718	2,920	7,740	5,950	24,600
India	--	--	--	1,340	823	1,190
Japan	20	14	68	1,340	941	4,710
Kazakhstan	6,340	4,380	19,400	75,200	52,400	169,000
Mexico	--	--	--	20	13	55
Russia	148	102	741	32,600	21,300	67,700
South Africa	507	261	611	183,000	89,600	196,000
Sweden	490	309	825	11,800	7,840	17,300
Turkey	--	--	--	5,890	3,920	9,990
United Kingdom	--	--	--	2	1	16
Zimbabwe	--	--	--	10,500	5,870	8,310
Total	8,870	6,090	25,400	363,000	207,000	536,000

-- Zero.

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

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

³Customs 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.

⁴Ferrochromium containing more than 4% carbon.

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

⁶Ferrochromium containing not more than 3% carbon.

TABLE 7
U.S. IMPORTS FOR CONSUMPTION OF CHROMIUM METAL IN 2021,
BY GRADE AND BY COUNTRY OR LOCALITY¹

Grade and country or locality	November		January–November ²	
	Gross weight (metric tons)	Value ³ (thousands)	Gross weight (metric tons)	Value ³ (thousands)
Unwrought powders:				
Belgium	--	--	3	\$88
China	140	\$1,340	1,110	9,650
France	133	1,820	1,940	17,200
Germany	42	261	627	3,720
India	20	208	156	1,420
Japan	--	--	1	42
Korea, Republic of	--	--	1	22
Netherlands	--	--	48	346
Russia	320	2,810	3,400	25,300
Spain	23	111	106	511
United Kingdom	439	5,970	2,020	22,500
Total	1,120	12,500	9,420	80,800
Waste and scrap:				
Canada	--	--	30	122
Dominican Republic	--	--	1	5
Germany	--	--	1	10
Japan	--	--	5	35
Liechtenstein	--	--	1	6
Taiwan	--	--	1	15
United Kingdom	20	179	63	413
Total	20	179	102	605
Other than waste and scrap and unwrought powders:				
Canada	--	--	(4)	7
China	21	246	39	1,020
Estonia	--	--	2	71
Germany	1	67	15	942
Italy	--	--	2	49
Japan	(4)	28	6	309
Liechtenstein	--	--	(4)	21
Malaysia	(4)	21	(4)	44
Netherlands	--	--	(4)	7
Russia	123	1,080	1,270	8,770
South Africa	12	111	76	680
Spain	--	--	135	648
Taiwan	--	--	(4)	90
United Kingdom	--	--	66	856
Total	156	1,560	1,620	13,500
All grades:				
Belgium	--	--	3	88
Canada	--	--	30	130
China	161	1,580	1,150	10,700
Dominican Republic	--	--	1	5
Estonia	--	--	2	71
France	133	1,820	1,940	17,200
Germany	43	328	643	4,670
India	20	208	156	1,420
Italy	--	--	2	49
Japan	(4)	28	12	386
Korea, Republic of	--	--	1	22
Liechtenstein	--	--	2	27
Malaysia	(4)	21	(4)	44
Netherlands	--	--	48	353
Russia	443	3,890	4,670	34,100
South Africa	12	111	76	680
Spain	23	111	241	1,160
Taiwan	--	--	1	105
United Kingdom	459	6,150	2,150	23,800
Total	1,290	14,200	11,100	95,000

-- Zero.

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

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

³Customs 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.

⁴Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 8
U.S. STAINLESS STEEL TRADE, BY PRODUCT, IN 2021¹

Stainless steel product	November		January–November ²	
	Gross weight (metric tons)	Value ³ (thousands)	Gross weight (metric tons)	Value ³ (thousands)
Exports:				
Ingot	1,800	\$8,170	15,500	\$82,000
Flat-rolled (width > 600 mm)	15,400	57,200	191,000	634,000
Flat-rolled (width < 600 mm)	4,760	28,700	53,400	323,000
Bars and rods in irregular coils	85	521	2,020	10,700
Other bars and rods	2,510	31,400	24,200	262,000
Wire	549	11,400	7,970	119,000
Tubes, pipes, hollow profiles	3,230	28,800	34,400	320,000
Total	28,300	166,000	329,000	1,750,000
Stainless steel scrap	25,700	37,700	282,000	309,000
Grand total	54,000	204,000	611,000	2,060,000
Imports:				
Ingot	5,320	39,900	382,000	571,000
Flat-rolled (width > 600 mm)	41,800	127,000	309,000	862,000
Flat-rolled (width < 600 mm)	6,740	23,500	56,000	195,000
Bars and rods in irregular coils	4,170	17,000	36,700	133,000
Other bars and rods	10,900	48,900	110,000	457,000
Wire	4,090	19,500	40,400	176,000
Tubes, pipes, hollow profiles	11,700	77,000	106,000	641,000
Total	84,700	353,000	1,040,000	3,040,000
Stainless steel scrap	22,300	34,300	249,000	340,000
Grand total	107,000	387,000	1,290,000	3,380,000

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

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

³Export 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.