

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/nmic>

CHROMIUM IN OCTOBER 2021

Reported consumption of chromium, on a gross weight basis, in October 2021 was essentially unchanged compared with consumption of chromium in September 2021 and essentially unchanged compared with consumption in October 2020. Reported consumer stocks were essentially unchanged compared with stocks in September 2021 and increased by 11% compared with those of October 2020 (tables 1, 2).

Stainless steel production increased by 4% in October 2021 compared with production in September 2021 and increased slightly compared with production in October 2020 (table 1). Year-to-date production through October 2021 increased by 15% compared with year-to-date production through October 2020. Government stockpile inventories for chromium metal

and ferrochromium were each unchanged compared with those in September 2021. Government stockpile inventories for chromium metal decreased by 6% compared with those in October 2020 and ferrochromium inventories decreased by 13% (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 October 2021, imports of all grades of chromium ferroalloys, including ferrochromium silicon, decreased by 6% compared with imports of chromium ferroalloys in September 2021 and increased by 94% compared with those in October 2020.

Stainless steel imports in October 2021 decreased by 45%

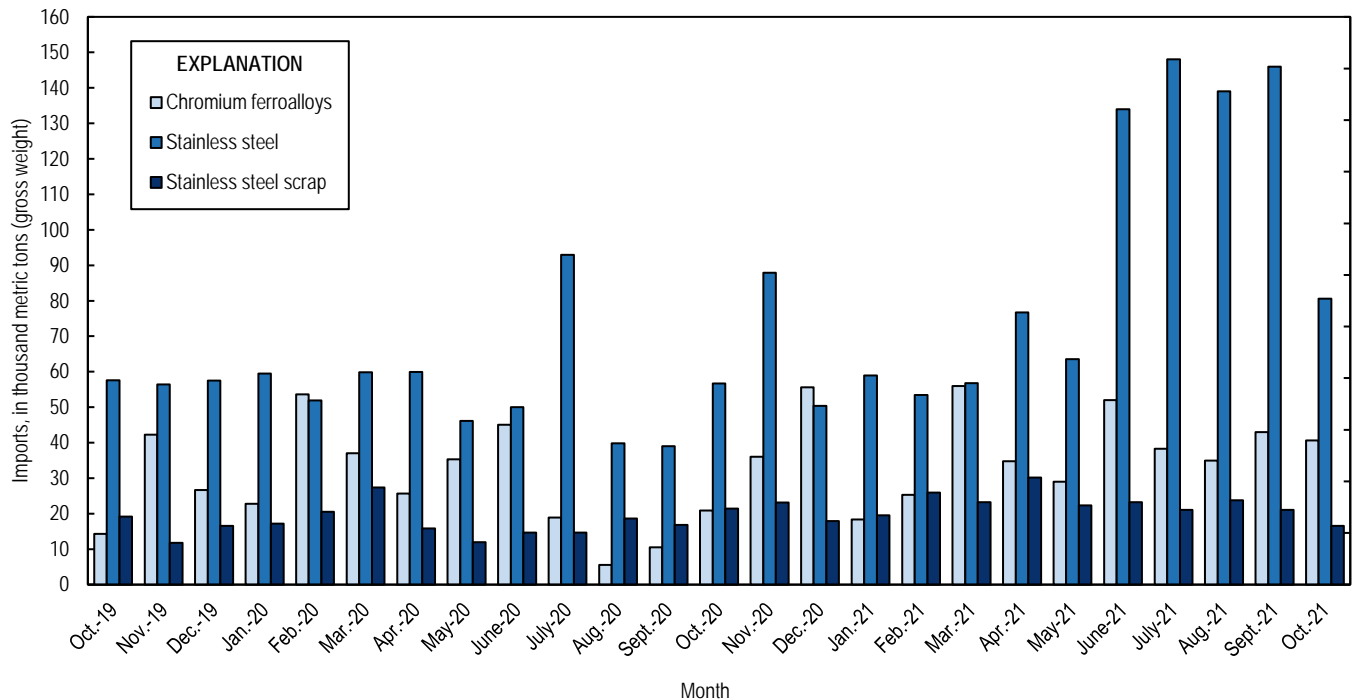


Figure 1. Chromium ferroalloys, stainless steel, and stainless steel scrap imports from October 2019 through October 2021. Source: U.S. Census Bureau.

compared with imports in September 2021 and increased by 42% compared with imports in October 2020. Stainless steel scrap imports decreased by 21% in October 2021 compared with imports in September 2021 and decreased by 22% compared with those in October 2020 (table 1).

In October 2021, the leading import sources for ferrochromium (FeCr) into the United States were, in descending order of quantity by gross weight, South Africa, Kazakhstan, and Russia (table 6), whereas the leading import sources for chromium metal were Russia, the United Kingdom, and France (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 more than doubled in October 2021 compared with exports in September 2021 and compared with exports in October 2020. Stainless steel exports in October 2021 decreased by 8% compared with exports in September 2021 and decreased by 12% compared with those of October 2020 (table 1).

The U.S. chromium metal (99% Cr) average price was \$5.42 per pound in October 2021, a 6% increase from the average price in September 2021, and was almost double the average price in October 2020. The U.S. high-carbon FeCr

(62%–70% chromium) average price was 201.44 cents per pound of contained chromium in October 2021, a 16% increase from the average price in September 2021, and more than double the average price in October 2020 (fig. 2) (CRU Group, 2021).

Reference Cited

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

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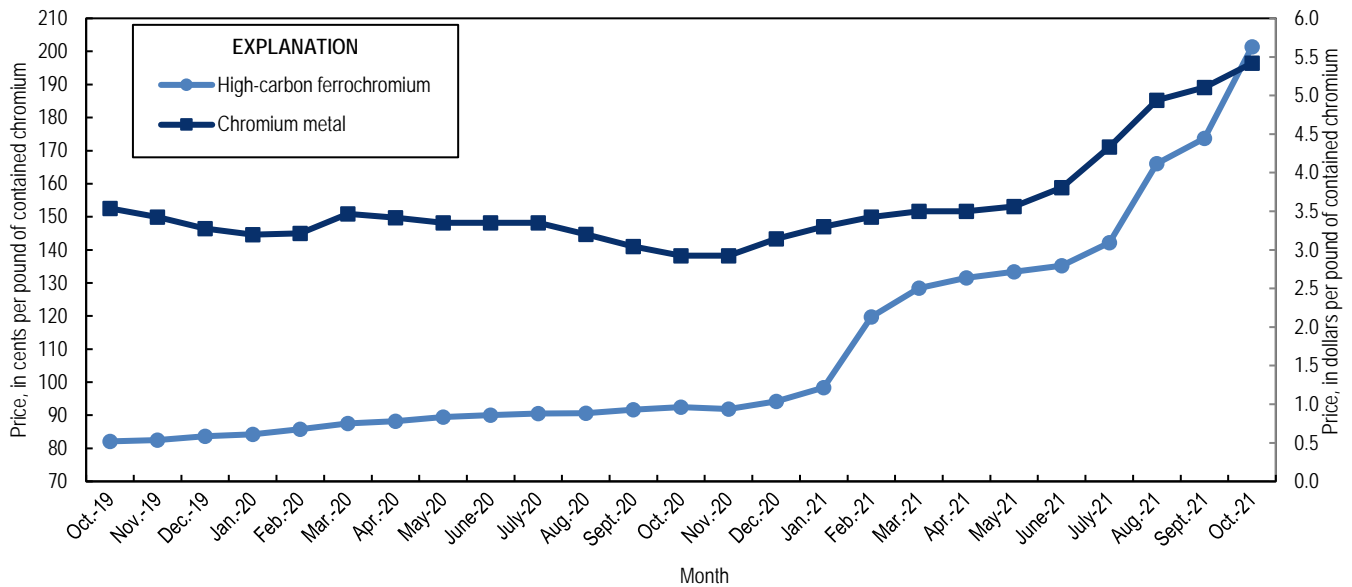


Figure 2. Average monthly prices for U.S. high-carbon ferrochromium from October 2019 through October 2021. Source: CRU Group.

TABLE 1
U.S. SALIENT CHROMIUM STATISTICS¹

(Metric tons, gross weight)

	2020	2021			
	January– December	August	September	October	January– October ²
Production, stainless steel ³	2,140,000	184,000	179,000	186,000	2,020,000
Components of U.S. supply:					
Stainless steel scrap receipts	682,000	46,700 ^e	54,400	56,400 ^e	550,000 ^e
Stainless steel scrap consumption	1,040,000	70,600 ^e	68,000 ^e	71,100 ^e	815,000 ^e
Imports for consumption:					
Chromite ore	101,000	4,600	5,570	9,710	100,000
Ferrochromium:					
More than 4% carbon	310,000	32,100	37,700	36,800	307,000
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	166	189	--	1,810
Not more than 0.5% carbon	37,400	2,230	3,530	1,970	38,200
Ferrochromium silicon	15,800	485	1,490	1,740	18,600
Total ferroalloy imports	367,000	35,000	43,000	40,600	372,000
Chromium metal ⁴	11,600	1,450	689	995	9,850
Stainless steel	694,000	139,000	146,000	80,600	956,000
Stainless steel scrap	219,000	23,800	21,100	16,600	227,000
Distribution of U.S. supply:					
Consumption, industry, chromium ferroalloys and metal	350,000	26,200	26,100	26,100	261,000
Exports:					
Chromite ore	1,780	116	302	142	1,840
Chromium ferroalloys:					
High-carbon ferrochromium	949	397	296	148	1,320
Low-carbon ferrochromium	393	18	58	604	892
Ferrochromium silicon	238	20	--	--	152
Total ferroalloy exports	1,580	435	354	752	2,360
Chromium metal	379	47	25	21	405
Stainless steel	325,000	27,900	30,000	27,700	301,000
Stainless steel scrap	314,000	53,500	23,700	25,300	257,000
Stocks at end of period:					
Consumer, industry, chromium ferroalloys and metal	9,320	7,740	7,730	7,750	7,750
Government stockpile:					
Chromium ferroalloys	59,600	53,700	53,000	53,000	53,000
Chromium metal	3,750	3,620	3,620	3,620	3,620

^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		
	September	October	January– October ²
Consumption by end use:			
Steel:			
Carbon steel	W	W	W
High-strength low-alloy steel	136	136	1,360
Stainless and heat-resisting steel	22,100	22,100	221,000
Unspecified steel ³	3,350	3,350	33,500
Superalloys	209	219	2,060
Other alloys and uses ⁴	W	W	W
Total	26,100	26,100	261,000
Total, chromium content	15,100	15,100	151,000
Consumption by material:			
Low-carbon ferrochromium	1,650	1,650	16,700
High-carbon ferrochromium	23,000	23,000	230,000
Ferrochromium silicon	W	W	W
Chromium metal	144	144	1,440
Chromite ore	144	141	1,410
Chromium-aluminum alloy	W	W	W
Other chromium materials	W	W	W
Total	26,100	26,100	261,000
Total, chromium content	15,100	15,100	151,000
Consumer stocks:			
Low-carbon ferrochromium	1,060	884	884
High-carbon ferrochromium	2,220	2,220	2,220
Ferrochromium silicon	W	W	W
Chromium metal	21	18	18
Chromium-aluminum alloy	W	W	W
Other chromium materials	W	W	W
Total	7,730	7,750	7,750
Total, chromium content	4,800	4,610	4,610

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:			
October	33,900	26,800	3,830
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

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:							
October	139	\$120	260	157	\$316	23	\$942
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
January–October ⁴	1,840	1,260	2,360	1,220	4,840	405	8,320

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	September	October	January– October ²
Chromite ore:				
Not more than 40% chromic oxide:				
Gross weight	3,600	2,170	81	13,900
Chromic oxide content	909	499	31	3,060
More than 40% but less than 46% chromic oxide:				
Gross weight	11,000	1,360	4,080	15,600
Chromic oxide content	4,780	586	1,760	6,770
46% or more chromic oxide:				
Gross weight	86,300	2,040	5,550	70,700
Chromic oxide content	77,500	982	3,890	58,600
Total, all grades:				
Gross weight	101,000	5,570	9,710	100,000
Chromic oxide content	83,200	2,070	5,680	68,400
Ferrochromium:				
Low-carbon: ³				
Not more than 0.5% carbon:				
Gross weight	37,400	3,530	1,970	38,200
Chromium content	25,200	2,560	1,450	27,100
More than 0.5% but not more than 3% carbon:				
Gross weight	3,360	189	--	1,810
Chromium content	2,260	134	--	1,250
Total, low-carbon:				
Gross weight	40,800	3,720	1,970	40,000
Chromium content	27,400	2,690	1,450	28,400
Medium-carbon: ⁴				
Gross weight	212	118	--	6,700
Chromium content	116	64	--	3,420
High-carbon: ⁵				
Gross weight	310,000	37,700	36,800	307,000
Chromium content	169,000	20,600	19,500	169,000
Total, all grades:				
Gross weight	351,000	41,500	38,800	354,000
Chromium content	196,000	23,400	21,000	201,000
Chromium metal:				
Unwrought powders	9,730	529	904	8,300
Waste and scrap	168	6	13	82
Other than waste and scrap and unwrought powders	1,740	154	78	1,460
Total, all grades	11,600	689	995	9,850

-- 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	October			January–October 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	432	329	\$847	4,030	2,870	\$5,660
Brazil	1,240	686	1,630	2,030	1,130	2,490
Finland	--	--	--	24,500	13,000	24,700
Germany	--	--	--	9	6	18
India	20	13	23	1,340	823	1,190
Kazakhstan	5,050	3,470	12,400	54,600	37,700	101,000
Mexico	20	13	55	20	13	55
Russia	6,000	3,180	8,470	17,600	11,100	26,200
South Africa	23,600	11,500	29,000	176,000	86,100	190,000
Sweden	191	126	335	11,300	7,530	16,500
Turkey	294	199	650	4,600	3,030	6,900
Zimbabwe	--	--	--	10,500	5,870	8,310
Total	36,800	19,500	53,400	307,000	169,000	383,000
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	569	442	1,810	6,810	5,220	21,600
Japan	220	154	739	1,320	927	4,640
Kazakhstan	1,110	805	4,990	12,800	9,260	44,100
Russia	25	16	103	14,700	9,930	40,600
Turkey	50	36	229	1,290	892	3,090
United Kingdom	--	--	--	2	1	16
Total	1,970	1,450	7,870	38,200	27,100	117,000
All grades:						
Albania	432	329	847	4,030	2,870	5,660
Belgium	--	--	--	368	287	1,160
Brazil	1,240	686	1,630	3,250	1,890	4,280
China	--	--	--	35	21	101
Finland	--	--	--	24,500	13,000	24,700
Germany	569	442	1,810	6,810	5,230	21,600
India	20	13	23	1,340	823	1,190
Japan	220	154	739	1,320	927	4,640
Kazakhstan	6,160	4,270	17,400	68,800	48,000	150,000
Mexico	20	13	55	20	13	55
Russia	6,030	3,190	8,580	32,500	21,200	67,000
South Africa	23,600	11,500	29,000	183,000	89,400	196,000
Sweden	191	126	335	11,300	7,530	16,500
Turkey	344	235	878	5,890	3,920	9,990
United Kingdom	--	--	--	2	1	16
Zimbabwe	--	--	--	10,500	5,870	8,310
Total	38,800	21,000	61,300	354,000	201,000	511,000

-- 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	October		January–October ²	
	Gross weight (metric tons)	Value ³ (thousands)	Gross weight (metric tons)	Value ³ (thousands)
Unwrought powders:				
Belgium	--	--	3	\$88
China	147	\$1,290	973	8,310
France	229	2,860	1,810	15,400
Germany	24	172	584	3,460
India	20	180	137	1,210
Japan	--	--	1	42
Korea, Republic of	--	--	1	22
Netherlands	--	--	48	346
Russia	226	1,960	3,080	22,500
Spain	23	111	83	400
United Kingdom	236	3,420	1,580	16,500
Total	904	9,980	8,300	68,300
Waste and scrap:				
Canada	12	55	30	122
Dominican Republic	--	--	1	5
Germany	--	--	1	10
Japan	--	--	5	35
Liechtenstein	--	--	1	6
Taiwan	--	--	1	15
United Kingdom	1	9	43	234
Total	13	65	82	427
Other than waste and scrap and unwrought powders:				
Canada	--	--	(4)	7
China	4	216	18	774
Estonia	--	--	2	71
Germany	1	92	15	875
Italy	(4)	9	2	49
Japan	2	85	6	281
Liechtenstein	--	--	(4)	21
Malaysia	--	--	(4)	23
Netherlands	--	--	(4)	7
Russia	40	360	1,150	7,690
South Africa	11	104	65	569
Spain	19	91	135	648
Taiwan	--	--	(4)	90
United Kingdom	--	--	66	856
Total	78	956	1,460	12,000
All grades:				
Belgium	--	--	3	88
Canada	12	55	30	130
China	152	1,500	991	9,090
Dominican Republic	--	--	1	5
Estonia	--	--	2	71
France	229	2,860	1,810	15,400
Germany	25	265	600	4,350
India	20	180	137	1,210
Italy	(4)	9	2	49
Japan	2	85	12	358
Korea, Republic of	--	--	1	22
Liechtenstein	--	--	2	27
Malaysia	--	--	(4)	23
Netherlands	--	--	48	353
Russia	266	2,320	4,230	30,200
South Africa	11	104	65	569
Spain	42	202	218	1,050
Taiwan	--	--	1	105
United Kingdom	237	3,420	1,690	17,600
Total	995	11,000	9,850	80,700

-- 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	October		January–October ²	
	Gross weight (metric tons)	Value ³ (thousands)	Gross weight (metric tons)	Value ³ (thousands)
Exports:				
Ingot	1,130	\$6,610	13,700	\$73,800
Flat-rolled (width > 600 mm)	15,200	59,100	176,000	577,000
Flat-rolled (width < 600 mm)	4,990	32,000	48,700	294,000
Bars and rods in irregular coils	280	1,680	1,940	10,200
Other bars and rods	2,520	26,600	21,700	231,000
Wire	734	11,700	7,420	107,000
Tubes, pipes, hollow profiles	2,920	28,400	31,200	291,000
Total	27,700	166,000	301,000	1,580,000
Stainless steel scrap	25,300	32,700	257,000	271,000
Grand total	53,100	199,000	557,000	1,860,000
Imports:				
Ingot	7,210	47,300	377,000	531,000
Flat-rolled (width > 600 mm)	36,500	114,000	267,000	735,000
Flat-rolled (width < 600 mm)	6,010	21,800	49,300	172,000
Bars and rods in irregular coils	4,160	14,900	32,500	116,000
Other bars and rods	10,000	43,900	99,600	408,000
Wire	4,170	20,100	36,300	157,000
Tubes, pipes, hollow profiles	12,500	77,200	94,600	564,000
Total	80,600	340,000	956,000	2,680,000
Stainless steel scrap	16,600	23,300	227,000	305,000
Grand total	97,200	363,000	1,180,000	2,990,000

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.