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 FEBRUARY 2021

Estimated consumption of chromium, on a gross weight basis, in February 2021 decreased by 6% compared with estimated consumption of chromium in January 2021, and decreased by 4% compared with reported consumption in February 2020. Estimated consumer stocks decreased slightly compared with stocks in January 2021 and increased slightly compared with those of February 2020 (tables 1, 2).

Stainless steel production decreased by 6% in February 2021 compared with production in January 2021, and decreased by 4% compared with production in February 2020 (table 1). Government stockpile inventories for chromium metal decreased slightly compared with those in January 2021 and decreased by 4% compared with those in February 2020. Government stockpile inventories of ferroalloys decreased slightly compared with those in January 2021 and decreased by 9% compared with those of February 2020 (table 3).

Imports of chromite ore, chromium ferroalloys, chromium metal, and stainless steel commonly fluctuate from month to month (table 1). In February 2021, imports of all grades of chromium ferroalloys increased by 38% compared with imports of chromium ferroalloys in January 2021 and decreased by 53% compared with those in in February 2020. Stainless steel imports in February 2021 decreased by 9% compared with imports in January 2021 and increased by 3% compared with those in February 2020 (fig. 1, table 1).

Exports of chromite ore, chromium ferroalloys, chromium

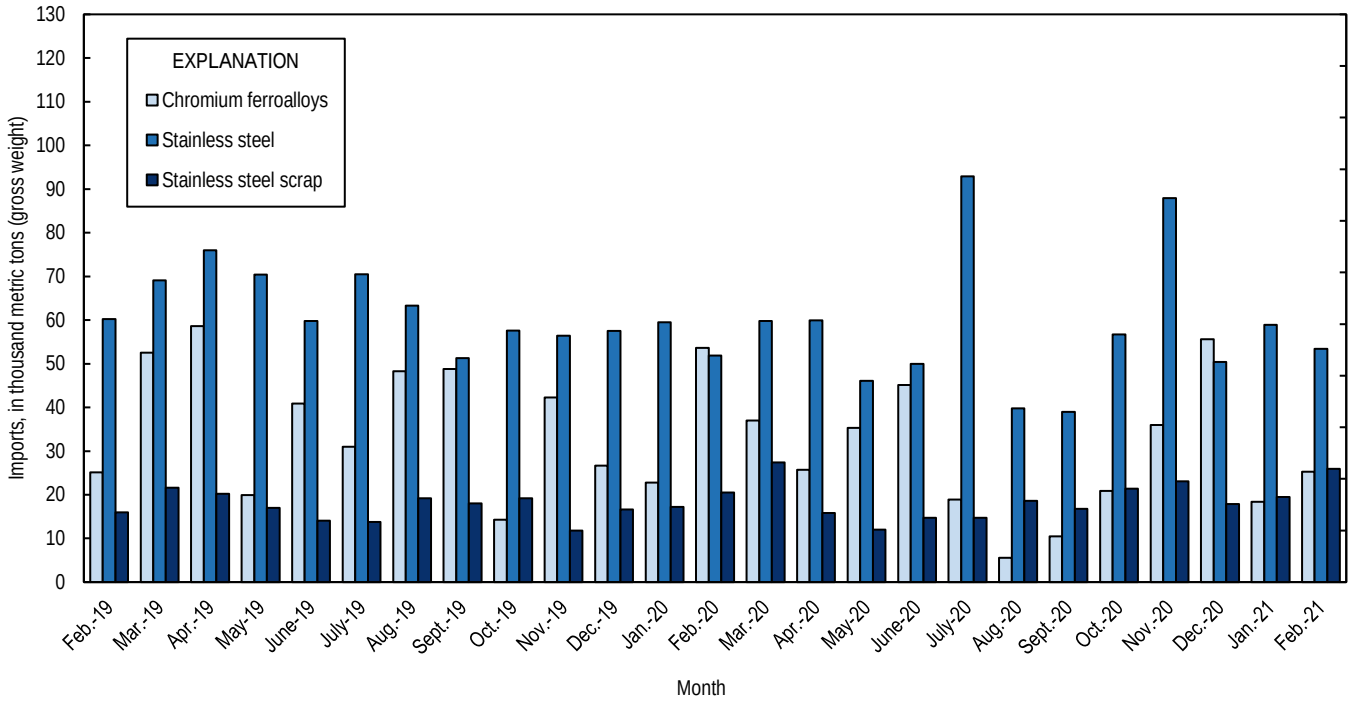

Figure 1. Chromium ferroalloys and stainless steel imports from February 2019 through February 2021. Source: U.S. Census Bureau.

metal, and stainless steel also frequently fluctuate from month to month (table 1, table 4). Exports of chromium ferroalloys increased more than fourfold in February 2021 compared with exports in January 2021 and increased by 69% compared with exports in February 2020. Stainless steel exports in February 2021 decreased slightly compared with exports in January 2021 and were essentially unchanged compared with those of February 2020 (table 1).

In February 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 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% Cr) average price was $3.43 per pound in February 2021, a 4% increase from the average price in January 2021, and a 7% increase compared with the average price in February 2020. The U.S. high-carbon FeCr (62%–70% chromium) average price was 119.75 cents per pound of contained chromium in February 2021, a 22% increase from the average price in January 2021, and a 40% increase from the average price in February 2020 (fig. 2) (CRU Group, 2021).

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Energy consumption guidelines were updated in Inner Mongolia to ensure compliance with China's 14th five-year plan (2021–2025). As a result, ferrochromium furnaces below 25 millivolt amp (MVA) were ordered to be shut down. At facilities with furnaces above 25 MVA, only one furnace could operate at a time. In addition, companies were required to upgrade open and semi-closed furnaces to closed furnaces before the end of February (Backeberg and Tong, 2021).

References Cited

Bakeberg, Nils and Tong, Tong, 2021, Chromium—China closing small ferrochrome furnaces: London, United Kingdom, Roskill Information Services Ltd., January 13. (Accessed April 13, 2021, at https://roskill.com/news/chromium-china-closing-small-ferrochrome-furnaces-2/.)

CRU Group, 2021, CRU prices: CRU Group, March 1. (Accessed April 13, 2021, via http://www.crugroup.com/.)

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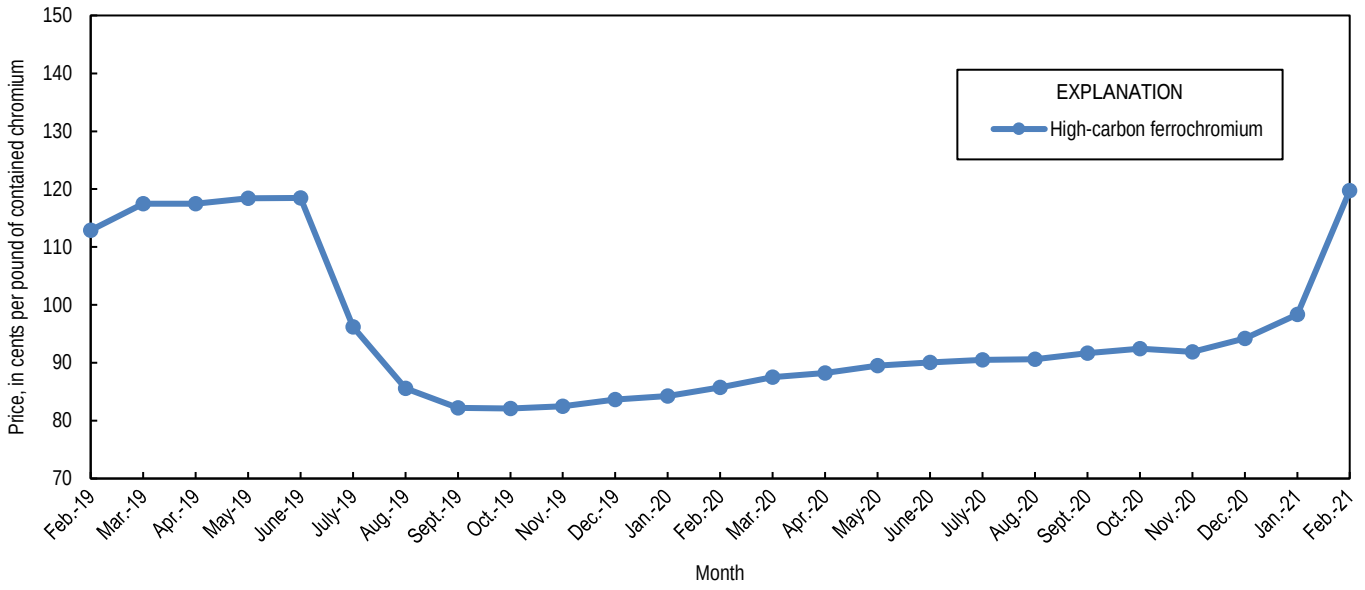

Figure 2. Average monthly prices for U.S. high-carbon ferrochromium from February 2019 through February 2021. Source: CRU Group.

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

(Metric tons)

	2020		2021		
	December	January–December[p, 2]	January	February	January–February[2]
Production, stainless steel[3]	200,000	2,140,000	211,000	199,000	409,000
Components of U.S. supply:					
Stainless steel scrap receipts	56,200 [r]	758,000 [r]	45,600	56,200	102,000
Stainless steel scrap consumption	84,600 [r]	1,150,000 [r]	71,600	84,600	156,000
Imports for consumption:					
Chromite ore	1,490	101,000	7,970	1,990	9,960
Ferrochromium:					
More than 4% carbon	51,400	310,000	10,300	15,500	25,800
More than 3% but not more than 4% carbon	--	212	--	6,500	6,500
More than 0.5% but not more than 3% carbon	--	3,360	--	644	644
Not more than 0.5% carbon	4,140	37,400	3,540	1,070	4,610
Ferrochromium silicon	55	15,800	4,530	1,640	6,170
Total ferroalloy imports	55,600	367,000	18,400	25,300	43,700
Chromium metal[4]	268	11,700	525	565	1,090
Stainless steel	50,400	694,000	58,900	53,400	112,000
Stainless steel scrap	17,900	220,000	19,500	25,900	45,400
Distribution of U.S. supply:					
Consumption, industry, chromium ferroalloys and metal[e]	27,000	335,000	34,300 [r]	32,200	66,500
Exports:					
Chromite ore	222	1,760	70	420	490
Chromium ferroalloys:					
High-carbon ferrochromium	174	949	24	50	74
Low-carbon ferrochromium	4	393	--	23	23
Ferrochromium silicon	74	238	--	39	39
Total ferroalloy exports	252	1,580	24	112	136
Chromium metal	16	378	44	30	73
Stainless steel	26,600	321,000	30,200	29,900	60,000
Stainless steel scrap	25,200	319,000	18,300	15,700	34,100
Stocks at end of period:					
Consumer, industry, chromium ferroalloys and metal[e]	7,400	7,400	7,750 [r]	7,660	7,660
Government stockpile:					
Chromium ferroalloys	59,600	59,600	59,600	58,900	58,900
Chromium metal	3,750	3,750	3,750	3,690	3,690

[e]Estimated. [p]Preliminary. [r]Revised. -- 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. REPORTED CONSUMPTION AND STOCKS OF CHROMIUM PRODUCTS[1]

(Metric tons, gross weight unless otherwise noted)

	2021		
	January	February	January–February[2]
Consumption by end use:			
Steel:			
Carbon steel	W	W	W
High-strength low-alloy steel	150 r, e	140 e	290 e
Stainless and heat-resisting steel	30,000 r, e	28,000 e	58,000 e
Unspecified steel[3]	3,400 e	3,400 e	6,800 e
Superalloys	350 r, e	300 e	650 e
Other alloys and uses[4]	W	W	W
Total	34,300 r, e	32,200 e	66,500 e
Total, chromium content	20,300 r, e	19,100 e	39,400 e
Consumption by material:			
Low-carbon ferrochromium	2,000 r, e	1,900 e	3,900 e
High-carbon ferrochromium	30,000 r, e	28,000 e	58,000 e
Ferrochromium silicon	W	W	W
Chromium metal	160 r, e	150 e	310 e
Chromite ore	130 e	130 e	260 e
Chromium-aluminum alloy	W	W	W
Other chromium materials	W	W	W
Total	34,300 r, e	32,200 e	66,500 e
Total, chromium content	20,300 r, e	19,100 e	39,400 e
Consumer stocks:			
Low-carbon ferrochromium	800 r, e	800 e	800 e
High-carbon ferrochromium	2,500 r, e	2,400 e	2,400 e
Ferrochromium silicon	W	W	W
Chromium metal	19 e	20 e	20 e
Chromium-aluminum alloy	W	W	W
Other chromium materials	4,100 e	4,100 e	4,100 e
Total	7,750 r, e	7,660 e	7,660 e
Total, chromium content	4,920 r, e	4,870 e	4,870 e

[e]Estimated. [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:			
February	37,100	27,400	3,850
March	36,700	27,100	3,850
April	36,700	27,100	3,850
May	36,000	26,800	3,850
June	35,700	26,800	3,840
July	35,100	26,800	3,840
August	33,900	26,800	3,830
September	33,900	26,800	3,830
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

[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:							
February	176	$104	66	40	$118	24	$658
March	140	79	106	63	207	35	972
April	115	83	118	61	182	31	550
May	155	90	85	41	106	35	1,050
June	186	133	56	34	72	33	529
July	96	68	133	71	180	46	1,770
August	305	97	149	90	233	42	927
September	19	8	208	115	324	33	727
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]	1,760	1,050	1,580	893	2,280	378	9,960
2020:							
January	70	55	24	15	43	44	1,050
February	420	264	111	58	169	30	650
January–February[4]	490	319	135	73	213	73	1,710

[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[2]	January	February	January–February[2]
Chromite ore:				
Not more than 40% chromic oxide:				
Gross weight	3,600	1,760	36	1,800
Chromic oxide content	909	364	14	378
More than 40% but less than 46% chromic oxide:				
Gross weight	11,000	1,050	1,920	2,960
Chromic oxide content	4,780	450	846	1,300
46% or more chromic oxide:				
Gross weight	86,300	5,150	39	5,190
Chromic oxide content	77,500	2,470	19	2,480
Total, all grades:				
Gross weight	101,000	7,970	1,990	9,960
Chromic oxide content	83,200	3,280	879	4,160
Ferrochromium:				
Low-carbon:[3]				
Not more than 0.5% carbon:				
Gross weight	37,400	3,540	1,070	4,610
Chromium content	25,200	2,510	771	3,280
More than 0.5% but not more than 3% carbon:				
Gross weight	3,360	--	644	644
Chromium content	2,260	--	427	427
Total, low-carbon:				
Gross weight	40,800	3,540	1,710	5,260
Chromium content	27,400	2,510	1,200	3,710
Medium-carbon:[4]				
Gross weight	212	--	6,500	6,500
Chromium content	116	--	3,310	3,310
High-carbon:[5]				
Gross weight	310,000	10,300	15,500	25,800
Chromium content	169,000	6,860	8,500	15,400
Total, all grades:				
Gross weight	351,000	13,800	23,700	37,500
Chromium content	196,000	9,370	13,000	22,400
Chromium metal:				
Unwrought powders	9,790	423	500	924
Waste and scrap	168	1	9	10
Other than waste and scrap and unwrought powders	1,690	100	55	156
Total, all grades	11,700	525	565	1,090

-- 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	February			January–February[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	198	138	$237	557	390	$649
Finland	--	--	--	1,500	800	1,190
India	227	137	191	499	301	421
Kazakhstan	3,600	2,490	4,700	11,500	7,940	14,400
Russia	--	--	--	294	196	333
South Africa	11,300	5,610	9,440	11,300	5,610	9,440
Turkey	200	124	229	200	124	229
Total	15,500	8,500	14,800	25,800	15,400	26,600
Medium-carbon ferrochromium,[5] South Africa	6,500	3,310	5,340	6,500	3,310	5,340
Low-carbon ferrochromium:[6]						
More than 0.5% but not more than 3% carbon						
Brazil	318	197	436	318	197	436
Kazakhstan	326	230	839	326	230	839
Total	644	427	1,280	644	427	1,280
Not more than 0.5% carbon:						
Belgium	--	--	--	368	287	1,160
Brazil	94	69	172	671	422	984
Germany	346	270	1,110	729	566	2,310
Japan	44	31	172	64	46	250
Kazakhstan	59	39	225	1,090	781	2,880
Russia	135	90	302	808	562	1,940
Turkey	392	271	809	891	615	1,850
Total	1,070	771	2,790	4,610	3,280	11,400
All grades:						
Albania	198	138	237	557	390	649
Belgium	--	--	--	368	287	1,160
Brazil	412	266	608	989	619	1,420
Finland	--	--	--	1,500	800	1,190
Germany	346	270	1,110	729	566	2,310
India	227	137	191	499	301	421
Japan	44	31	172	64	46	250
Kazakhstan	3,980	2,760	5,770	12,900	8,960	18,100
Russia	135	90	302	1,100	759	2,270
South Africa	17,800	8,920	14,800	17,800	8,920	14,800
Turkey	592	395	1,040	1,090	738	2,080
Total	23,700	13,000	24,200	37,500	22,400	44,600

-- 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.

Source: U.S. Census Bureau.

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	February		January–February[2]	
	Gross weight (metric tons)	Value[3] (thousands)	Gross weight (metric tons)	Value[3] (thousands)
Unwrought powders:				
Belgium	--	--	3	$88
China	40	$297	80	634
France	114	690	248	1,530
Germany	5	31	46	254
India	20	166	20	166
Russia	184	1,060	325	1,870
Spain	23	111	46	223
United Kingdom	114	868	156	1,350
Total	500	3,230	924	6,120
Waste and scrap:				
Canada	6	32	6	32
Germany	1	10	1	10
Japan	1	15	1	15
Liechtenstein	1	6	1	6
Taiwan	--	--	1	15
Total	9	63	10	78
Other than waste and scrap and unwrought powders:				
Canada	--	--	(4)	3
China	(4)	26	1	31
Germany	1	74	1	88
Japan	2	76	2	76
Liechtenstein	--	--	(4)	10
Netherlands	(4)	5	(4)	5
Russia	23	138	123	675
Spain	23	111	23	111
Taiwan	(4)	9	(4)	9
United Kingdom	6	69	6	69
Total	55	509	156	1,080
All grades:				
Belgium	--	--	3	88
Canada	6	32	6	35
China	40	323	80	665
France	114	690	248	1,530
Germany	7	115	48	352
India	20	166	20	166
Japan	3	91	3	91
Liechtenstein	1	6	1	16
Netherlands	(4)	5	(4)	5
Russia	207	1,200	448	2,550
Spain	46	223	69	334
Taiwan	(4)	9	1	24
United Kingdom	120	937	162	1,420
Total	565	3,800	1,090	7,280

-- 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	February		January–February[2]	
	Gross weight (metric tons)	Value[3] (thousands)	Gross weight (metric tons)	Value[3] (thousands)
Exports:				
Ingot	546	$5,130	1,270	$9,670
Flat-rolled (width > 600 mm)	19,000	55,600	38,300	110,000
Flat-rolled (width < 600 mm)	4,550	27,000	9,260	54,200
Bars and rods in irregular coils	275	1,900	486	2,860
Other bars and rods	1,950	18,200	4,130	37,300
Wire	564	7,030	1,240	14,700
Tubes, pipes, hollow profiles	2,990	26,500	5,330	49,500
Total	29,900	141,000	60,000	278,000
Stainless steel scrap	15,700	18,900	34,100	38,700
Grand total	45,600	160,000	94,100	317,000
Imports:				
Ingot	13,300	97,000	35,200	115,000
Flat-rolled (width > 600 mm)	16,700	40,100	31,600	74,700
Flat-rolled (width < 600 mm)	4,440	13,300	7,530	24,800
Bars and rods in irregular coils	1,230	4,540	3,400	12,600
Other bars and rods	6,780	25,800	15,900	60,100
Wire	3,040	11,800	5,370	20,800
Tubes, pipes, hollow profiles	7,820	41,500	13,300	76,800
Total	53,400	234,000	112,000	385,000
Stainless steel scrap	25,900	28,800	45,400	51,000
Grand total	79,300	263,000	158,000	436,000

[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 charges incurred in bringing the merchandise into the United States.

Source: U.S. Census Bureau.