

Mineral Industry Surveys

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CHROMIUM IN MARCH 2020

Reported consumption of chromium, on a gross weight basis, in March 2020 increased slightly compared with reported consumption of chromium in February 2020, and increased by 12% compared with reported consumption in March 2019. Consumer stocks increased slightly compared with those of the previous month and increased by 55% compared with those of March 2019 (tables 1, 2).

Stainless steel production decreased by 4% in March 2020 compared with production in February 2020, and decreased by 16% compared with production in March 2019 (table 1). Government stockpile inventories for chromium metal have remained essentially unchanged since February 2018. Government stockpile inventories of ferroalloys decreased

slightly compared with February 2020 and decreased by 9% compared with those of March 2019 (table 3).

Imports of chromite ore, chromium ferroalloys, chromium metal, and stainless steel commonly fluctuate from month to month (table 1). In March 2020, imports of all grades of chromium ferroalloys decreased by 31% and 29% compared with imports of chromium ferroalloys in February 2020 and March 2019, respectively. Stainless steel imports in March 2020 increased by 15% compared with imports in February 2020 and decreased by 13% compared with those in March 2019 (fig. 1, table 1).

Exports of chromite ore, chromium ferroalloys, chromium metal, and stainless steel also frequently fluctuate from month

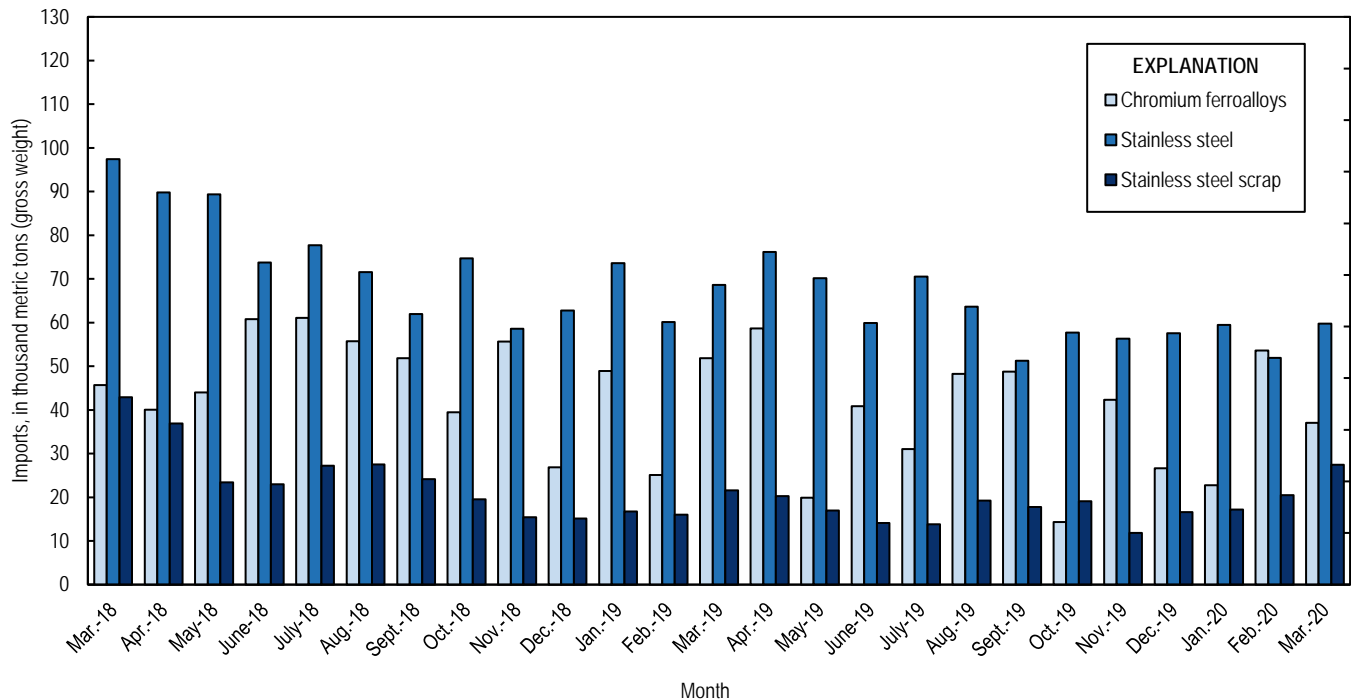


Figure 1. Chromium ferroalloys and stainless steel imports from March 2018 through March 2020. Source: U.S. Census Bureau.

to month (table 1, table 4). Exports of chromium ferroalloys increased by 60% in March 2020 compared with exports in February 2020 and decreased by 67% compared with exports in March 2019. Stainless steel exports in March 2020 increased by 6% compared with exports in February 2020 (table 1) and decreased by 10% compared with those of March 2019.

In March 2020, the leading import sources for ferrochromium (FeCr) into the United States were, in descending order of quantity by gross weight, South Africa, Kazakhstan, and Brazil (table 6), whereas the leading import sources for chromium metal were Russia, France, and the United Kingdom (table 7).

The U.S. chromium metal (99% Cr) average price was \$3.467 per pound in March 2020, an 8% increase from the average price in February 2020, and a 26% decrease compared with the average price in March 2019 (CRU Group, 2020b). The U.S. high-carbon FeCr (62%–70% chromium) average price was 87.500 cents per pound of contained chromium in March 2020, slightly more the average price in February 2020, and a 26% decrease from the average price in March 2019 (fig. 2) (CRU Group, 2020c).

Industry News

Stainless-steel companies began idling or shutting down plants across the world in response to the spread of the coronavirus disease 2019 (COVID-19) and ensuing unstable market conditions. ArcelorMittal S.A. announced it would idle blast furnace #4 at its Indiana Harbor steel mill in Chicago, IL, citing the temporary shutdown of the auto industry in addition to COVID-19 (Pete, 2020). United States Steel Corp. planned to idle blast furnace A at its Granite City Works plant in Illinois and shut down its No. 4 blast furnace at its Gary Works plant in Indiana for repairs (Decena, 2020). In Europe, Aperam S.A. announced it would halt stainless steel production at its facilities in Belgium and France (CRU Group, 2020b).

Chromite mines and ferrochromium producers in South

Africa were also affected by the COVID-19 lockdown, which began on March 26 and was set to stay in effect for 21 days. As a result, Afarak Group Company announced it would put its furnaces and underground chromite mining operations on care-and-maintenance status at the Mogale ferroalloy plant and Stellite and Mecklenburg mines, respectively (CRU Group, 2020a). Jubilee Metals Group Plc also announced it would idle operations in South Africa to comply with the lockdown (Jubilee Metals Group Plc, 2020).

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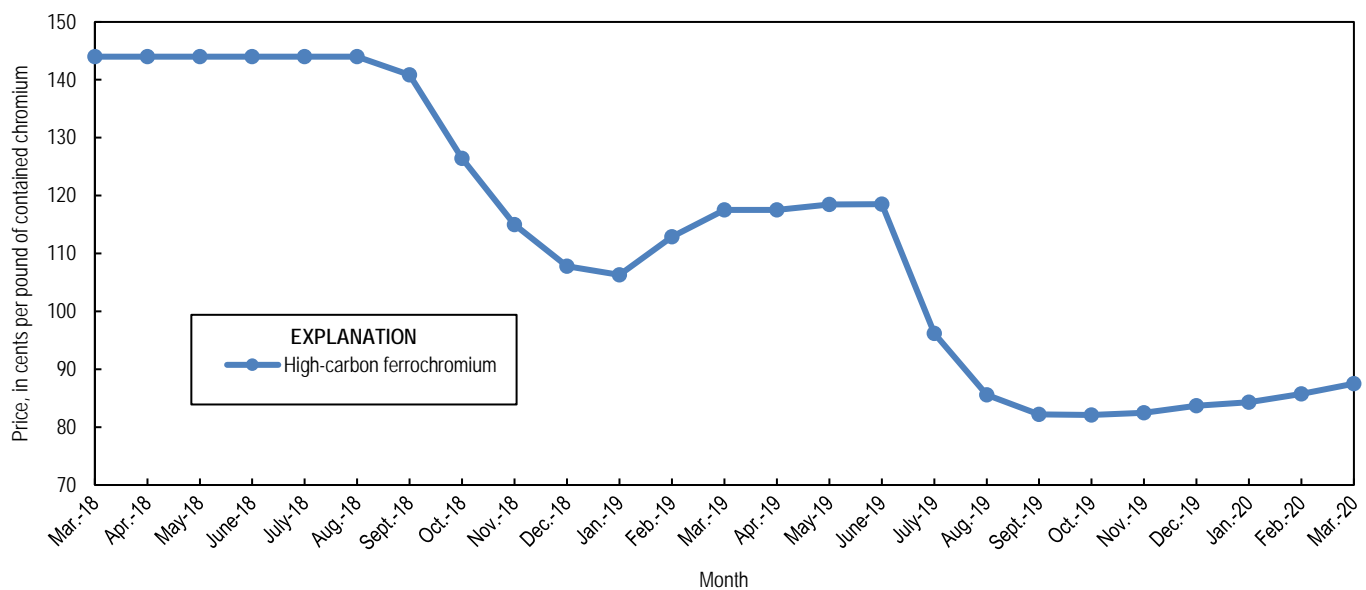


Figure 2. Average monthly prices for U.S. high-carbon ferrochromium from March 2018 through March 2020. Source: CRU Group.

TABLE 1
U.S. SALIENT CHROMIUM STATISTICS¹

(Metric tons, gross weight)

	2019	2020			January– March ²
	January– December ³	January	February	March	
Production, stainless steel ³	2,590,000	221,000	207,000	199,000	627,000
Components of U.S. supply:					
Stainless steel scrap receipts	810,000	70,000 ^e	80,000 ^e	80,000 ^e	230,000 ^e
Stainless steel scrap consumption	1,240,000	105,000 ^e	110,000 ^e	115,000 ^e	330,000 ^e
Imports for consumption:					
Chromite ore	152,000	1,920	8,540	750	11,200
Ferrochromium:					
More than 4% carbon	393,000	13,200	50,200	31,800	95,200
More than 3% but not more than 4% carbon	1,210	--	--	10	10
More than 0.5% but not more than 3% carbon	2,090	668	628	133	1,430
Not more than 0.5% carbon	42,900	5,420	2,790	2,030	10,200
Ferrochromium silicon	17,600	3,500	--	3,020	6,520
Total ferroalloy imports	457,000	22,800	53,600	37,000	113,000
Chromium metal ⁴	14,400	1,540	1,090	1,320	3,950
Stainless steel	766,000	59,500	51,900	59,800	171,000
Stainless steel scrap	204,000	17,200	20,500	27,400	65,100
Distribution of U.S. supply:					
Consumption, industry, chromium ferroalloys and metal	424,000	34,500 ^r	36,300 ^r	37,100	108,000
Exports:					
Chromite ore	2,300	147	176	140	463
Chromium ferroalloys:					
High-carbon ferrochromium	1,170	64	22	46	131
Low-carbon ferrochromium	437	2	44	60	106
Ferrochromium silicon	22	--	--	--	--
Total ferroalloy exports	1,630	66	66	106	237
Chromium metal	430	37	24	35	96
Stainless steel	434,000	33,400	29,600	31,400	94,400
Stainless steel scrap	474,000	35,200	49,900	25,000	110,000
Stocks at end of period:					
Consumer, industry, chromium ferroalloys and metal	14,900 ^r	15,200 ^r	14,900 ^r	15,200	15,200
Government stockpile:					
Chromium ferroalloys	66,100	65,200	64,500	63,700	63,700
Chromium metal	3,850	3,850	3,850	3,850	3,850

^eEstimated. ^pPreliminary. ^rRevised. -- 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. REPORTED CONSUMPTION AND STOCKS OF CHROMIUM PRODUCTS^{1,2}

(Metric tons, gross weight unless otherwise noted)

	2020		
	February	March	January– March ³
Consumption by end use:			
Steel:			
Carbon steel	W	W	W
High-strength low-alloy steel	131 ^r	148	410
Stainless and heat-resisting steel	32,800 ^r	33,500	97,100
Unspecified steel ⁴	2,720	2,720	8,140
Superalloys	424	423	1,270
Other alloys and uses ⁵	W	W	W
Total	36,300^r	37,100	108,000
Total, chromium content	20,700^r	21,200	61,600
Consumption by material:			
Low-carbon ferrochromium	2,050 ^r	2,100	6,180
High-carbon ferrochromium	31,600 ^r	32,200	93,800
Ferrochromium silicon	W	W	W
Chromium metal	162	162	487
Chromite ore	113	129	373
Chromium-aluminum alloy	W	W	W
Other chromium materials	W	W	W
Total	36,300^r	37,100	108,000
Total, chromium content	20,700^r	21,200	61,600
Consumer stocks:			
Low-carbon ferrochromium	1,580	1,590	1,590
High-carbon ferrochromium	8,330 ^r	8,580	8,580
Ferrochromium silicon	800 ^r	823	823
Chromium metal	44	43	43
Chromium-aluminum alloy	40 ^r	37	37
Other chromium materials ⁶	4,110	4,110	4,110
Total	14,900^r	15,200	15,200
Total, chromium content	8,310^r	8,250	8,250

^rRevised. 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.

²Includes estimates.

³May include revised data that are not broken out by specific month(s).

⁴Includes electrical, full alloy, tool, and unspecified steel end uses.

⁵Includes cast irons, welding and alloy hard-facing rods and materials, wear- and corrosion-resistant alloys, and aluminum, copper, magnetic, nickel, and other alloys.

⁶Includes chromite ore as foundry sand

TABLE 3
U.S. GOVERNMENT STOCKPILE INVENTORY OF
CHROMIUM MATERIALS¹

(metric tons)

	Chromium ferroalloys		Chromium metal
	High-carbon ferro-chromium	Low-carbon ferro-chromium	
2019:			
March	42,400	27,400	3,850
April	41,000	27,400	3,850
May	39,900	27,400	3,850
June	39,900	27,400	3,850
July	39,900	27,400	3,850
August	39,900	27,400	3,850
September	39,600	27,400	3,850
October	39,600	27,400	3,850
November	38,700	27,400	3,850
December	38,700	27,400	3,850
2020:			
January	37,800	27,400	3,850
February	37,100	27,400	3,850
March	36,700	27,100	3,850

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	Value	Gross weight	Chromium content	Value	Gross weight	Value
	(metric tons)	(thousands)	(metric tons)	(metric tons)	(thousands)	(metric tons)	(thousands)
2019:							
March	113	\$106	322	175	\$667	26	\$848
April	199	226	169	78	256	28	1,190
May	251	192	47	28	87	70	2,460
June	220	177	90	54	158	37	844
July	269	217	95	53	160	42	971
August	382	356	38	23	78	44	1,370
September	218	152	30	18	40	25	649
October	61	56	328	184	525	39	1,340
November	141	110	179	107	319	23	889
December	120	86	83	50	107	31	718
January–December ⁴	2,300	1,940	1,630	864	2,690	430	13,100
2020:							
January	147	82	66	36	91	37	733
February	176	104	66	40	118	24	658
March	140	79	106	63	207	35	972
January–March ⁴	463	265	237	139	416	96	2,360

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)

	2019	2020		
	January– December	February	March	January– March ²
Chromite ore:				
Not more than 40% chromic oxide:				
Gross weight	973	--	137	694
Chromic oxide content	360	--	48	134
More than 40% but less than 46% chromic oxide:				
Gross weight	4,170	457	564	1,790
Chromic oxide content	1,810	196	245	774
46% or more chromic oxide:				
Gross weight	147,000	8,080	49	8,730
Chromic oxide content	90,400	5,020	25	5,400
Total, all grades:				
Gross weight	152,000	8,540	750	11,200
Chromic oxide content	92,500	5,220	318	6,310
Ferrochromium:				
Low-carbon: ³				
Not more than 0.5% carbon:				
Gross weight	42,900	2,790	2,030	10,200
Chromium content	29,900	1,930	1,440	6,940
More than 0.5% but not more than 3% carbon:				
Gross weight	2,090	628	133	1,430
Chromium content	1,330	417	81	940
Total, low-carbon:				
Gross weight	45,000	3,410	2,160	11,700
Chromium content	31,300	2,350	1,520	7,880
Medium-carbon: ⁴				
Gross weight	1,210	--	10	10
Chromium content	802	--	8	8
High-carbon: ⁵				
Gross weight	393,000	50,200	31,800	95,200
Chromium content	215,000	26,400	17,700	52,500
Total, all grades:				
Gross weight	439,000	53,600	34,000	107,000
Chromium content	247,000	28,700	19,200	60,400
Chromium metal:				
Unwrought powders	11,500	897	1,160	3,260
Waste and scrap	221	11	9	31
Other than waste and scrap and unwrought powders	2,680	181	147	666
Total, all grades	14,400	1,090	1,320	3,950

-- 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 2020, BY GRADE AND COUNTRY OR LOCALITY¹

Grade and country or locality	March			January–March 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	438	294	\$506	854	567	\$946
Brazil	1,370	757	1,070	1,370	757	1,070
India	828	499	715	2,250	1,350	1,840
Kazakhstan	9,080	6,300	10,200	22,400	15,500	24,700
Russia	--	--	--	3,000	1,540	2,290
South Africa	20,100	9,830	16,000	56,900	27,900	45,500
Turkey	--	--	--	392	258	415
Zimbabwe	--	--	--	8,110	4,660	5,150
Total	31,800	17,700	28,500	95,200	52,500	81,900
Medium-carbon ferrochromium: ⁵ United Kingdom	10	8	23	10	8	23
Low-carbon ferrochromium:⁶						
More than 0.5% but not more than 3% carbon						
Brazil	133	81	225	802	497	1,320
Kazakhstan	--	--	--	506	358	1,290
Russia	--	--	--	120	85	284
Total	133	81	225	1,430	940	2,900
Not more than 0.5% carbon:						
Belgium	61	42	318	711	479	2,390
Brazil	--	--	--	371	231	611
China	4	3	15	9	6	29
Germany	577	400	1,910	861	594	2,750
India	--	--	--	200	130	405
Japan	160	114	628	259	186	1,010
Kazakhstan	972	698	2,510	2,430	1,740	6,310
Russia	72	54	180	5,160	3,410	10,600
Turkey	184	130	509	224	158	629
Total	2,030	1,440	6,070	10,200	6,940	24,700
All grades:						
Albania	438	294	506	854	567	946
Belgium	61	42	318	711	479	2,390
Brazil	1,500	839	1,290	2,540	1,490	3,000
China	4	3	15	9	6	29
Germany	577	400	1,910	861	594	2,750
India	828	499	715	2,450	1,480	2,240
Japan	160	114	628	259	186	1,010
Kazakhstan	10,100	7,000	12,700	25,300	17,600	32,300
Russia	72	54	180	8,280	5,030	13,100
South Africa	20,100	9,830	16,000	56,900	27,900	45,500
Turkey	184	130	509	615	416	1,040
United Kingdom	10	8	23	10	8	23
Zimbabwe	--	--	--	8,110	4,660	5,150
Total	34,000	19,200	34,900	107,000	60,400	110,000

-- 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 2020,
BY GRADE AND BY COUNTRY OR LOCALITY¹

Grade and country or locality	March		January–March ²	
	Gross weight (metric tons)	Value ³ (thousands)	Gross weight (metric tons)	Value ³ (thousands)
Unwrought powders:				
Belgium	10	\$56	10	\$56
China	121	1,300	403	3,930
Estonia	--	--	10	75
France	267	2,500	629	5,720
Germany	78	644	152	1,120
India	19	172	57	515
Japan	(4)	2	(4)	2
Russia	478	3,200	1,260	8,020
Spain	1	7	48	245
Switzerland	--	--	20	149
United Kingdom	191	1,880	673	7,180
Total	1,160	9,760	3,260	27,000
Waste and scrap:				
Canada	--	--	11	26
Japan	(4)	8	6	49
United Kingdom	9	47	15	81
Total	9	55	31	156
Other than waste and scrap and unwrought powders:				
China	(4)	34	21	197
France	(4)	4	(4)	4
Germany	8	134	27	210
Japan	1	33	2	83
Malaysia	(4)	21	(4)	25
Russia	132	802	540	2,660
United Kingdom	6	79	76	680
Total	147	1,110	666	3,860
All grades:				
Belgium	10	56	10	56
Canada	--	--	11	26
China	121	1,340	424	4,130
Estonia	--	--	10	75
France	267	2,510	629	5,730
Germany	86	777	179	1,330
India	19	172	57	515
Japan	1	43	8	134
Malaysia	(4)	21	(4)	25
Russia	610	4,000	1,790	10,700
Spain	1	7	48	245
Switzerland	--	--	20	149
United Kingdom	206	2,000	764	7,940
Total	1,320	10,900	3,950	31,000

-- 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 2020¹

Stainless steel product	March		January–March ²	
	Gross weight (metric tons)	Value ³ (thousands)	Gross weight (metric tons)	Value ³ (thousands)
Exports:				
Ingot	1,180	\$8,530	3,690	\$23,700
Flat-rolled (width > 600 mm)	19,700	53,700	56,900	156,000
Flat-rolled (width < 600 mm)	4,430	30,100	15,600	85,700
Bars and rods in irregular coils	94	497	619	3,320
Other bars and rods	2,410	24,000	7,750	82,800
Wire	1,050	13,600	2,310	31,500
Tubes, pipes, hollow profiles	2,490	29,300	7,550	87,600
Total	31,400	160,000	94,400	471,000
Stainless steel scrap	25,000	17,600	110,000	68,300
Grand total	56,400	177,000	204,000	539,000
Imports:				
Ingot	10,100	38,300	25,200	117,000
Flat-rolled (width > 600 mm)	19,600	48,400	62,200	150,000
Flat-rolled (width < 600 mm)	4,120	16,100	12,400	47,900
Bars and rods in irregular coils	3,380	11,900	8,270	29,600
Other bars and rods	10,300	40,300	26,100	104,000
Wire	2,900	12,500	9,030	41,300
Tubes, pipes, hollow profiles	9,320	78,900	27,900	213,000
Total	59,800	246,000	171,000	704,000
Stainless steel scrap	27,400	24,900	65,100	58,000
Grand total	87,200	271,000	236,000	762,000

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.