

# Mineral Industry Surveys

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## CHROMIUM IN JUNE 2019

Reported consumption of chromium, on a gross weight basis, in June 2019 decreased slightly compared with reported consumption of chromium in May 2019, and decreased by 3% compared with reported consumption in June 2018. High-carbon ferrochromium accounted for 86% of the chromium material consumed in June 2019. Stainless and heat-resisting steel was the leading end use, consuming 89% of chromium materials. Consumer stocks decreased by 3% compared with those of the previous month and decreased 3% compared with those of June 2018 (tables 1, 2).

Stainless steel production increased slightly in June 2019 compared with production in May 2019, and decreased by 11% compared with production in June 2018 (table 1).

Government stockpile inventories for chromium metal have remained unchanged since February 2018. Government stockpiles inventories of ferroalloys were unchanged compared with those of May 2019 and decreased by 8% compared with those of June 2018 (table 3).

Imports of chromite ore, chromium ferroalloys, chromium metal, and stainless steel commonly fluctuate from month to month (table 1). Stainless steel imports in June 2019 decreased by 15% compared with imports in May 2019 and decreased by 19% compared with imports in June 2018 (fig. 1, table 1).

Exports of chromite ore, chromium ferroalloys, chromium metal, and stainless steel also frequently fluctuate from month to month (table 1, table 4). Stainless steel exports in June 2019

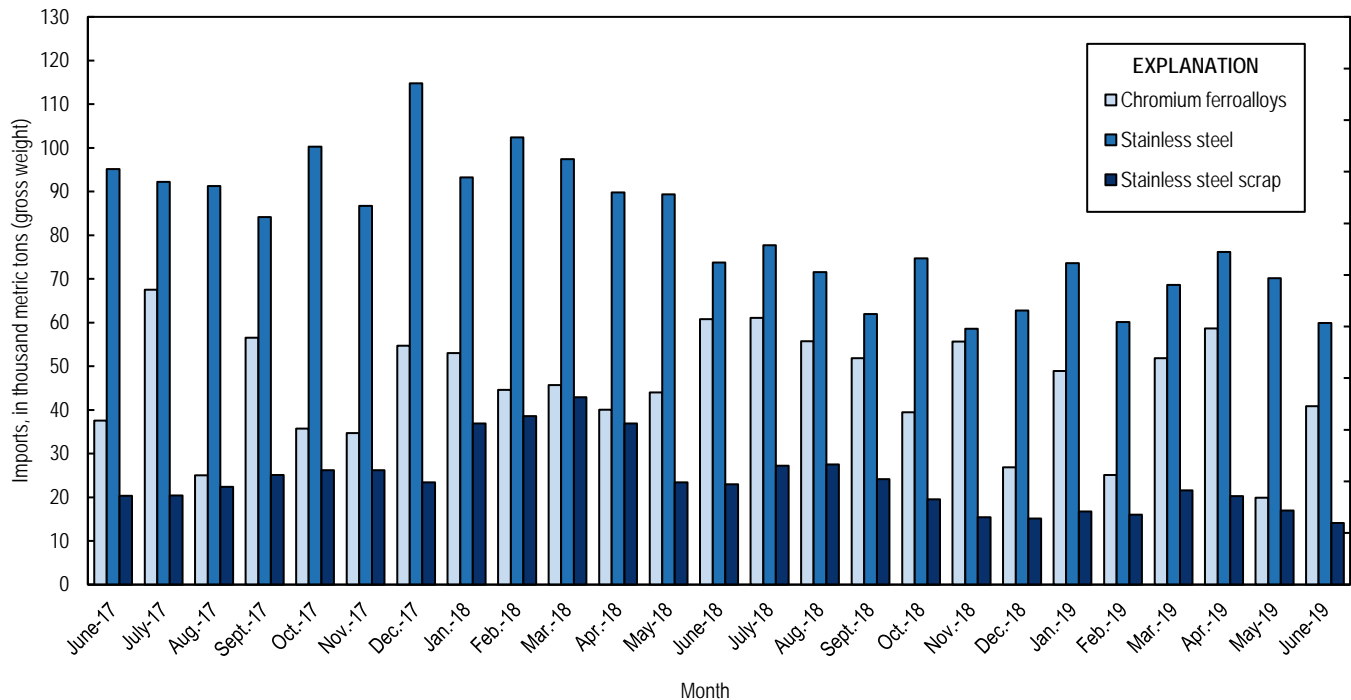


Figure 1. Chromium ferroalloys and stainless steel imports from June 2017 through June 2019. Source: U.S. Census Bureau.

decreased by 30% compared with exports in May 2019 (table 1) and decreased by 49% compared with those of June 2018.

For June 2019, the leading import sources for ferrochromium (FeCr) into the United States were, in descending order of quantity by gross weight and chromium content, South Africa, Russia, and Kazakhstan (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 decreased 6% to \$4.225 per pound in June 2019 compared with the average price in May 2019 and decreased by 33% compared with the average price in June 2018 (CRU Group, 2019). The U.S. high-carbon FeCr (62%–70% chromium) average price was 118.500 cents per pound of contained chromium in June 2019, essentially unchanged from the average price in May 2019, and an 18% decrease from the average price in June 2018 (fig. 2) (CRU Group, 2019). The high-carbon FeCr price began declining in September 2018 and continued to drop through January 2019, after which prices started to increase again.

### Industry News

Afarak Group Plc (Finland) announced its decision to idle two submerged arc furnaces at its Mogale smelter in South Africa. According to Afarak, irregular energy availability and the high cost of energy negatively affected ferroalloy production and smelter performance. Decreasing ferrochromium prices added to Afarak’s decision to idle the furnaces. Afarak indicated it would continue to operate the 40

Mega Volt Amp plasma furnace for plasma charge chrome, with production around 4,000 metric tons per month (t/m), and the converter for medium-carbon ferrochromium, with production of about 1,400 t/m (Afarak Group Plc, 2019).

Tsingshan Holding Group Co., Ltd. (China) announced stainless steel production at its cold-rolling stainless steel plant in Mundra, India, would begin in July (Hu, 2019). The plant has a capacity of 600,000 metric tons per year and was part of a 3 million-metric-ton-per-year stainless steel complex expected to be complete by 2022.

### References Cited

Afarak Group Plc, 2019, Production guidance & operational update on ferroalloy segment: Helsinki, Finland, Afarak Group Plc press release, June 12. (Accessed August 9, 2019, at <http://otp.investis.com/clients/fi/afarak/omx/omx-story.aspx?cid=175&newsid=68267&culture=en-US>.)  
 CRU Group, 2019, CRU prices\_chrome\_historical data\_28\_june\_2019\_june\_avg: CRU Group, June 28. (Accessed August 9, 2019, via <http://www.crugroup.com/>.)  
 Hu, Tracy, 2019, Tsingshan to start production at India stainless steel plant in July: New York, NY, S&P Global Market Intelligence, June 20. (Accessed June 20, 2019, via <https://www.spglobal.com/marketintelligence/en/>.)

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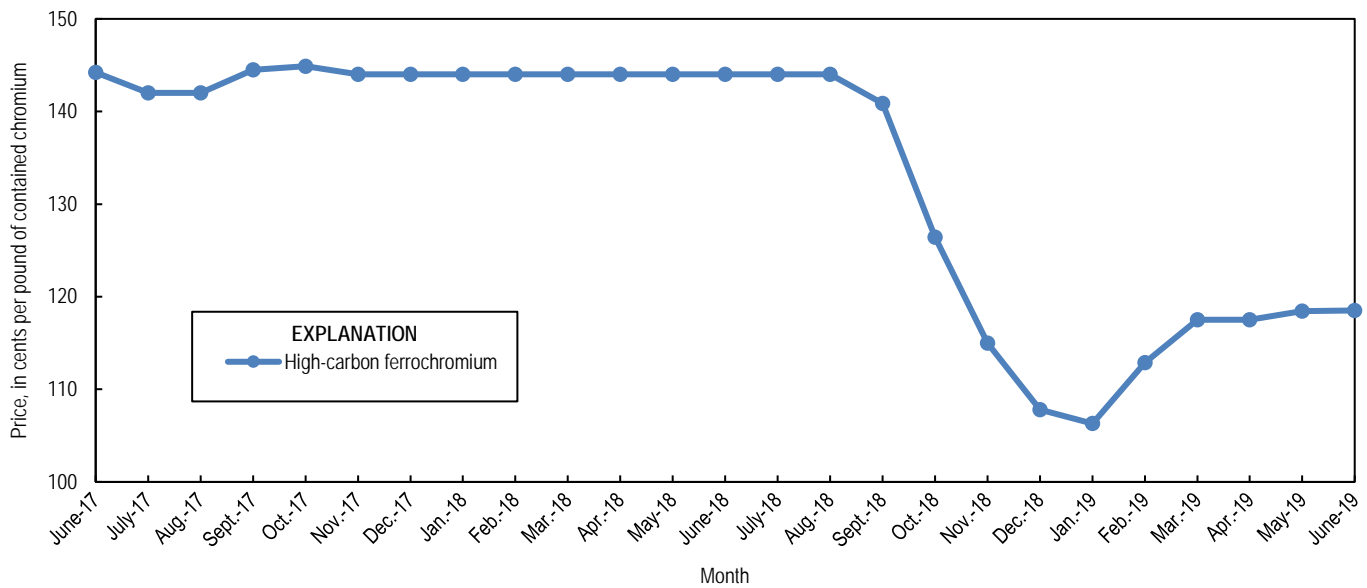


Figure 2. Average monthly prices for U.S. high-carbon ferrochromium from June 2017 through June 2019. Source: CRU Group.

TABLE 1  
U.S. SALIENT CHROMIUM STATISTICS<sup>1</sup>

(Metric tons, gross weight)

	2018	2019			
	January– December <sup>p</sup>	April	May	June	January– June <sup>2</sup>
Production, stainless steel <sup>3</sup>	2,810,000	233,000	205,000	209,000	1,350,000
Components of U.S. supply:					
Stainless steel scrap receipts	818,000	69,600	68,200	67,200	413,000
Stainless steel scrap consumption	1,230,000 <sup>r</sup>	108,000	104,000	104,000	626,000
Imports for consumption:					
Chromite ore	197,000	6,630	832	6,120	58,400
Ferrochromium:					
More than 4% carbon	495,000	54,300	16,000	38,200	213,000
More than 3% but not more than 4% carbon	8,610	--	--	114	168
More than 0.5% but not more than 3% carbon	4,130	39	--	162	1,370
Not more than 0.5% carbon	53,100	2,370	3,510	2,390	21,600
Ferrochromium silicon	18,000	1,930	432	--	8,550
Total ferroalloy imports	579,000	58,600	19,900	40,800	245,000
Chromium metal <sup>4</sup>	15,500	1,400	1,180	1,020	7,480
Stainless steel	953,000	76,100	70,200	59,900	409,000
Stainless steel scrap	331,000	20,300	17,000	14,100	106,000
Distribution of U.S. supply:					
Consumption, industry, chromium ferroalloys and metal	404,000 <sup>r</sup>	33,300 <sup>r</sup>	32,800	32,300	194,000
Exports:					
Chromite ore	6,280	199	251	220	1,110
Chromium ferroalloys:					
High-carbon ferrochromium	731	134	21	59	585
Low-carbon ferrochromium	1,740	35	26	31	277
Ferrochromium silicon	60	--	--	--	18
Total ferroalloy exports	2,530	169	47	90	881
Chromium metal	514	28	70	37	228
Stainless steel	668,000	33,700	47,700	33,400	232,000
Stainless steel scrap	653,000	39,200	57,200	27,900	231,000
Stocks at end of period:					
Consumer, industry, chromium ferroalloys and metal	11,300	10,000	10,700	10,400	10,400
Government stockpile:					
Chromium ferroalloys	71,200	68,400	67,300	67,300	67,300
Chromium metal	3,850	3,850	3,850	3,850	3,850

<sup>p</sup>Preliminary. <sup>r</sup>Revised. -- Zero.

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

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

<sup>3</sup>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.

<sup>4</sup>Includes waste and scrap and other.

TABLE 2  
U.S. REPORTED CONSUMPTION AND STOCKS OF CHROMIUM PRODUCTS<sup>1,2</sup>

(Metric tons, gross weight unless otherwise noted)

	2019		
	May	June	January– June <sup>3</sup>
<b>Consumption by end use:</b>			
<b>Steel:</b>			
Carbon steel	187	155	1,010
High-strength low-alloy steel	146	146	875
Stainless and heat-resisting steel	29,200	28,800	173,000
Unspecified steel <sup>4</sup>	2,720	2,720	16,300
Superalloys	424 <sup>r</sup>	423	2,550
Other alloys and uses <sup>5</sup>	98	86	567
<b>Total</b>	<b>32,800</b>	<b>32,300</b>	<b>194,000</b>
<b>Total, chromium content</b>	<b>19,100</b>	<b>19,000</b>	<b>114,000</b>
<b>Consumption by material:</b>			
Low-carbon ferrochromium	1,930	1,810	11,300
High-carbon ferrochromium	28,300	27,900	168,000
Ferrochromium silicon	W	W	W
Chromium metal	162 <sup>r</sup>	162	1,250
Chromite ore	20	13	119
Chromium-aluminum alloy	W	W	W
Other chromium materials	W	W	W
<b>Total</b>	<b>32,800</b>	<b>32,300</b>	<b>194,000</b>
<b>Total, chromium content</b>	<b>19,100</b>	<b>19,000</b>	<b>114,000</b>
<b>Consumer stocks:</b>			
Low-carbon ferrochromium	1,600	1,580	1,580
High-carbon ferrochromium	8,170 <sup>r</sup>	7,910	7,910
Ferrochromium silicon	789	793	793
Chromium metal	44 <sup>r</sup>	44	44
Chromium-aluminum alloy	W	W	W
Other chromium materials	W	W	W
<b>Total</b>	<b>10,700</b>	<b>10,400</b>	<b>10,400</b>
<b>Total, chromium content</b>	<b>6,280<sup>r</sup></b>	<b>6,180</b>	<b>6,180</b>

<sup>r</sup>Revised. W Withheld to avoid disclosing company proprietary data; included in "Total."

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

<sup>2</sup>Includes estimates.

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

<sup>4</sup>Includes electrical, full alloy, tool, and unspecified steel end uses.

<sup>5</sup>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<sup>1</sup>

(metric tons)

	Chromium ferroalloys		Chromium metal
	High-carbon ferro- chromium	Low-carbon ferro- chromium	
2018:			
June	45,400	27,600	3,850
July	44,500	27,600	3,850
August	44,500	27,600	3,850
September	44,500	27,600	3,850
October	44,500	27,600	3,850
November	44,000	27,600	3,850
December	43,800	27,400	3,850
2019:			
January	43,800	27,400	3,850
February	43,300	27,400	3,850
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

<sup>1</sup>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<sup>1</sup>

	Chromite ore		Chromium ferroalloys <sup>2</sup>			Chromium metal <sup>3</sup>	
	Gross weight (metric tons)	Value (thousands)	Gross weight (metric tons)	Chromium content (metric tons)	Value (thousands)	Gross weight (metric tons)	Value (thousands)
2018:							
June	225	\$177	680	408	\$855	45	\$1,310
July	811	456	255	153	420	41	1,090
August	181	138	123	81	291	33	990
September	294	395	165	99	222	53	1,280
October	637	408	406	224	565	43	1,160
November	843	398	123	68	231	43	982
December	741	368	90	42	111	29	674
January–December <sup>4</sup>	6,280	3,810	2,530	1,400	3,590	514	12,300
2019:							
January	169	124	204	64	188	25	644
February	158	134	48	29	111	44	1,220
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
January–June <sup>4</sup>	1,110	960	881	428	1,470	228	7,200

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

<sup>2</sup>Includes low- and high-carbon ferrochromium and ferrochromium silicon.

<sup>3</sup>Includes chromium metal, waste and scrap, and unwrought powders.

<sup>4</sup>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<sup>1</sup>

(Metric tons)

	2018	2019		
	January– December	May	June	January– June <sup>2</sup>
<b>Chromite ore:</b>				
Not more than 40% chromic oxide:				
Gross weight	462	105	81	452
Chromic oxide content	173	40	31	174
More than 40% but less than 46% chromic oxide:				
Gross weight	14,600	99	214	1,520
Chromic oxide content	6,590	44	95	661
46% or more chromic oxide:				
Gross weight	181,000	628	5,820	56,500
Chromic oxide content	85,800	294	2,730	28,200
<b>Total, all grades:</b>				
Gross weight	197,000	832	6,120	58,400
Chromic oxide content	92,600	378	2,860	29,000
<b>Ferrochromium:</b>				
Low-carbon: <sup>3</sup>				
Not more than 0.5% carbon:				
Gross weight	53,100	3,510	2,390	21,600
Chromium content	37,100	2,500	1,660	15,100
More than 0.5% but not more than 3% carbon:				
Gross weight	4,130	--	162	1,370
Chromium content	2,570	--	114	862
<b>Total, low-carbon:</b>				
Gross weight	57,300	3,510	2,550	23,000
Chromium content	39,700	2,500	1,770	15,900
Medium-carbon: <sup>4</sup>				
Gross weight	8,610	--	114	168
Chromium content	4,560	--	61	85
High-carbon: <sup>5</sup>				
Gross weight	495,000	16,000	38,200	213,000
Chromium content	269,000	10,700	23,000	118,000
<b>Total, all grades:</b>				
Gross weight	561,000	19,500	40,800	237,000
Chromium content	314,000	13,200	24,800	134,000
<b>Chromium metal:</b>				
Unwrought powders	7,920	1,000	747	5,800
Waste and scrap	177	48	3	160
Other than waste and scrap and unwrought powders	7,440	131	271	1,520
<b>Total, all grades</b>	<b>15,500</b>	<b>1,180</b>	<b>1,020</b>	<b>7,480</b>

-- Zero.

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

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

<sup>3</sup>Ferrochromium containing not more than 3% carbon.

<sup>4</sup>Ferrochromium containing more than 3% carbon but not more than 4% carbon.

<sup>5</sup>Ferrochromium containing more than 4% carbon.

Source: U.S. Census Bureau.

TABLE 6  
U.S. IMPORTS FOR CONSUMPTION OF FERROCHROMIUM IN 2019, BY GRADE AND COUNTRY OR LOCALITY<sup>1</sup>

Grade and country or locality	June			January–June <sup>2</sup>		
	Gross weight (metric tons)	Chromium content (metric tons)	Value <sup>3</sup> (thousands)	Gross weight (metric tons)	Chromium content (metric tons)	Value <sup>3</sup> (thousands)
<b>High-carbon ferrochromium:<sup>4</sup></b>						
Albania	802	536	\$1,070	8,950	5,950	\$12,300
Finland	--	--	--	80	41	78
Germany	--	--	--	3	2	11
India	2,570	1,580	2,640	16,300	10,100	16,800
Kazakhstan	2,490	1,730	3,670	26,300	18,300	40,600
Oman	864	524	929	4,920	2,930	5,700
Russia	11,200	7,660	14,400	12,200	8,320	15,600
South Africa	20,300	11,000	18,700	131,000	64,800	120,000
Sweden	--	--	--	902	604	1,320
Turkey	--	--	--	1,220	763	1,700
Zimbabwe	--	--	--	12,100	6,630	11,800
Total	38,200	23,000	41,400	213,000	118,000	226,000
<b>Medium-carbon ferrochromium:<sup>5</sup></b>						
South Africa	--	--	--	54	24	20
Turkey	114	61	61	114	61	61
Total	114	61	61	168	85	81
<b>Low-carbon ferrochromium:<sup>6</sup></b>						
More than 0.5% but not more than 3% carbon						
Brazil	--	--	--	810	489	1,690
Kazakhstan	162	114	430	384	270	1,020
Russia	--	--	--	54	37	141
South Africa	--	--	--	119	67	207
Total	162	114	430	1,370	862	3,050
Not more than 0.5% carbon:						
Brazil	200	125	445	296	185	664
China	--	--	--	47	29	115
Germany	844	590	2,830	4,070	2,840	13,300
India	20	13	52	245	153	587
Japan	160	114	640	958	680	3,970
Kazakhstan	275	197	739	5,970	4,290	17,100
Russia	809	563	2,110	7,740	5,290	19,800
South Africa	--	--	--	40	22	69
Turkey	80	56	241	2,270	1,570	6,490
Total	2,390	1,660	7,060	21,600	15,100	62,000
<b>All grades:</b>						
Albania	802	536	1,070	8,950	5,950	12,300
Brazil	200	125	445	1,110	673	2,360
China	--	--	--	47	29	115
Finland	--	--	--	80	41	78
Germany	844	590	2,830	4,080	2,840	13,300
India	2,590	1,590	2,690	16,600	10,200	17,300
Japan	160	114	640	958	680	3,970
Kazakhstan	2,920	2,040	4,840	32,600	22,900	58,700
Oman	864	524	929	4,920	2,930	5,700
Russia	12,000	8,220	16,500	20,000	13,700	35,500
South Africa	20,300	11,000	18,700	131,000	64,900	120,000
Sweden	--	--	--	902	604	1,320
Turkey	194	117	302	3,610	2,400	8,250
Zimbabwe	--	--	--	12,100	6,630	11,800
Total	40,800	24,800	49,000	237,000	134,000	291,000

(See footnotes at end of table)



TABLE 6—Continued  
U.S. IMPORTS FOR CONSUMPTION OF FERROCHROMIUM IN 2019, BY GRADE AND COUNTRY OR LOCALITY<sup>1</sup>

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-- Zero.

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

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

<sup>3</sup>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.

<sup>4</sup>Ferrochromium containing more than 4% carbon.

<sup>5</sup>Ferrochromium containing more than 3% carbon but not more than 4% carbon.

<sup>6</sup>Ferrochromium containing not more than 3% carbon.

Source: U.S. Census Bureau.

TABLE 7  
U.S. IMPORTS FOR CONSUMPTION OF CHROMIUM METAL IN 2019,  
BY GRADE AND BY COUNTRY OR LOCALITY<sup>1</sup>

Grade and country or locality	June		January–June <sup>2</sup>	
	Gross weight (metric tons)	Value <sup>3</sup> (thousands)	Gross weight (metric tons)	Value <sup>3</sup> (thousands)
<b>Unwrought powders:</b>				
China	116	\$1,060	1,170	\$12,700
France	133	1,500	1,110	13,200
Germany	8	93	238	2,580
Italy	(4)	5	(4)	5
Japan	(4)	16	1	69
Korea, Republic of	--	--	1	38
Russia	344	3,050	1,410	13,800
Spain	--	--	18	117
Taiwan	--	--	1	30
United Kingdom	145	1,870	1,850	25,300
Total	747	7,600	5,800	67,800
<b>Waste and scrap:</b>				
Canada	--	--	16	70
China	--	--	2	95
Japan	--	--	28	236
Korea, Republic of	2	11	2	11
Taiwan	--	--	15	313
United Kingdom	1	5	97	766
Total	3	16	160	1,490
<b>Other than waste and scrap and unwrought powders:</b>				
Canada	(4)	7	(4)	7
China	--	--	11	171
Czechia	--	--	1	7
France	--	--	357	4,550
Germany	(4)	29	5	313
Ireland	--	--	(4)	3
Israel	--	--	(4)	4
Japan	--	--	3	104
Liechtenstein	--	--	(4)	3
Lithuania	--	--	(4)	3
Malaysia	--	--	(4)	8
New Zealand	--	--	1	37
Russia	270	2,510	1,110	10,500
United Kingdom	--	--	29	424
Total	271	2,540	1,520	16,100
<b>All grades:</b>				
Canada	(4)	7	16	76
China	116	1,060	1,190	13,000
Czechia	--	--	1	7
France	133	1,500	1,470	17,700
Germany	8	121	242	2,890
Ireland	--	--	(4)	3
Israel	--	--	(4)	4
Italy	(4)	5	(4)	5
Japan	(4)	16	32	408
Korea, Republic of	2	11	3	49
Liechtenstein	--	--	(4)	3
Lithuania	--	--	(4)	3
Malaysia	--	--	(4)	8
New Zealand	--	--	1	37
Russia	615	5,560	2,530	24,300
Spain	--	--	18	117
Taiwan	--	--	16	343

(See footnotes at end of table.)

TABLE 7—Continued  
 U.S. IMPORTS FOR CONSUMPTION OF CHROMIUM METAL IN 2019,  
 BY GRADE AND BY COUNTRY OR LOCALITY<sup>1</sup>

Grade and country or locality	June		January–June <sup>2</sup>	
	Gross weight (metric tons)	Value <sup>3</sup> (thousands)	Gross weight (metric tons)	Value <sup>3</sup> (thousands)
United Kingdom	146	1,880	1,970	26,500
Total	1,020	10,200	7,480	85,400

-- Zero.

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

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

<sup>3</sup>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.

<sup>4</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 8  
U.S. STAINLESS STEEL TRADE, BY PRODUCT, IN 2019<sup>1</sup>

Stainless steel product	June		January–June <sup>2</sup>	
	Gross weight (metric tons)	Value <sup>3</sup> (thousands)	Gross weight (metric tons)	Value <sup>3</sup> (thousands)
<b>Exports:</b>				
Ingot	1,360	\$8,140	8,720	\$47,100
Flat-rolled (width > 600 mm)	19,300	59,900	145,000	393,000
Flat-rolled (width < 600 mm)	5,740	27,100	36,100	168,000
Bars and rods in irregular coils	218	872	1,850	6,960
Other bars and rods	2,740	28,000	16,700	169,000
Wire	610	9,260	4,320	58,000
Tubes, pipes, hollow profiles	3,390	30,400	19,200	192,000
Total	33,400	164,000	232,000	1,030,000
Stainless steel scrap	27,900	28,200	231,000	172,000
Grand total	61,300	192,000	463,000	1,210,000
<b>Imports:</b>				
Ingot	8,620	20,900	60,800	138,000
Flat-rolled (width > 600 mm)	17,300	44,800	131,000	319,000
Flat-rolled (width < 600 mm)	4,570	17,200	27,400	100,000
Bars and rods in irregular coils	3,580	9,690	19,400	64,900
Other bars and rods	12,100	46,500	74,400	285,000
Wire	2,560	11,900	23,700	107,000
Tubes, pipes, hollow profiles	11,200	68,400	72,100	425,000
Total	59,900	219,000	409,000	1,440,000
Stainless steel scrap	14,100	13,200	106,000	97,900
Grand total	74,000	233,000	514,000	1,540,000

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

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

<sup>3</sup>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.