

Mineral Industry Surveys

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CHROMIUM IN OCTOBER 2019

Reported consumption of chromium, on a gross weight basis, in October 2019 was essentially unchanged compared with reported consumption of chromium in September 2019, and increased by 8% compared with reported consumption in October 2018. High-carbon ferrochromium accounted for 84% of the chromium material consumed in October 2019. Stainless and heat-resisting steels were the leading end uses, consuming 86% of chromium materials. Consumer stocks increased slightly compared with those of the previous month and increased by 32% compared with those of October 2018 (tables 1, 2).

Stainless steel production decreased by 7% in October 2019 compared with production in September 2019, and decreased

by 13% compared with production in October 2018 (table 1). Government stockpile inventories for chromium metal have remained unchanged since February 2018. Government stockpiles inventories of ferroalloys were unchanged compared with September 2019 and decreased by 7% compared with those of October 2018 (table 3).

Imports of chromite ore, chromium ferroalloys, chromium metal, and stainless steel commonly fluctuate from month to month, although stainless steel and stainless steel scrap imports have decreased overall since December 2017 (table 1). Imports of all grades of chromium ferroalloys in October 2019 decreased by 71% compared with imports of chromium ferroalloys in September 2019 and decreased by 64%

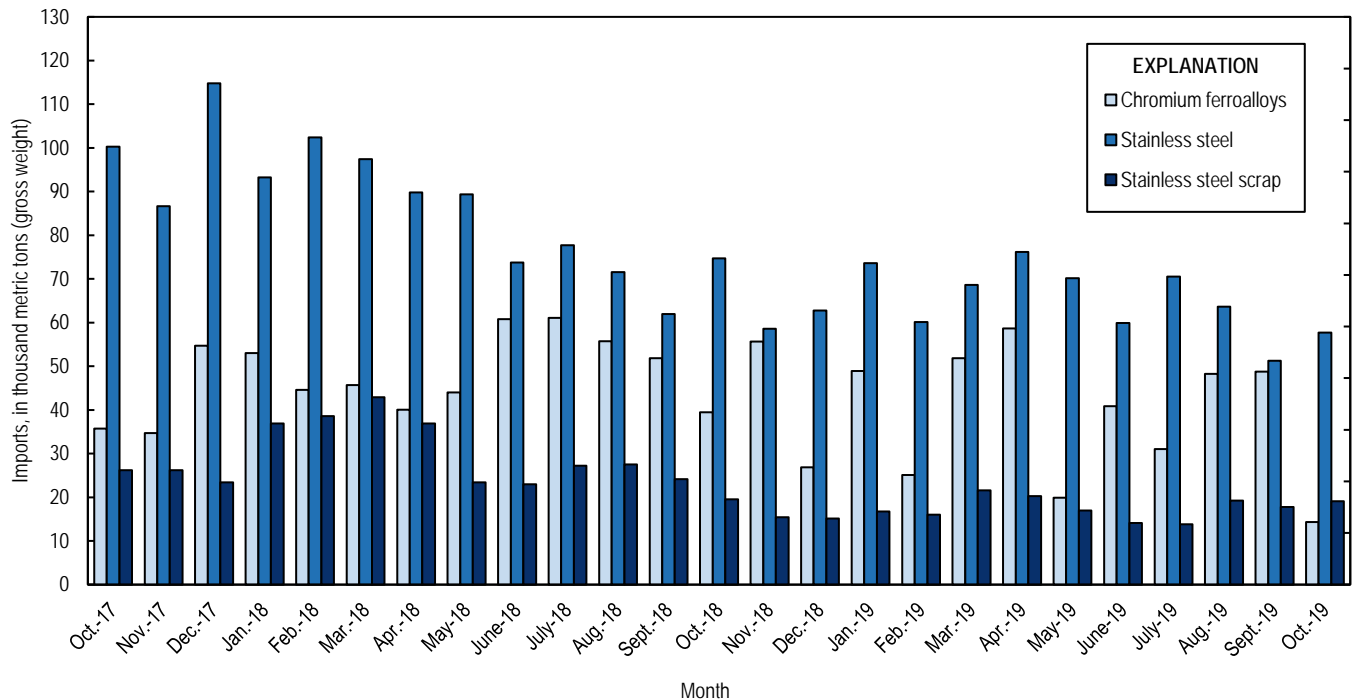


Figure 1. Chromium ferroalloys and stainless steel imports from October 2017 through October 2019. Source: U.S. Census Bureau.

compared with those in October 2018. Stainless steel imports in October 2019 increased by 13% compared with imports in September 2019 and decreased by 23% compared with those in October 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). Exports of chromium ferroalloys were more than 10 times those in October 2019 compared with exports in September 2019 and decreased by 19% compared with exports in October 2018. Stainless steel exports in October 2019 decreased by 13% compared with exports in September 2019 (table 1) and increased by 11% compared with those of October 2018.

In October 2019, the leading import sources for ferrochromium (FeCr) into the United States were, in descending order of quantity by gross weight and chromium content, Kazakhstan, Oman, and Russia (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 by 4% to \$3.537 per pound in October 2019 compared with the average price in September 2019 and decreased by 38% compared with the average price in October 2018 (CRU Group, 2019). The U.S. high-carbon FeCr (62%–70% chromium) average price was 82.100 cents per pound of contained chromium in October 2019, essentially unchanged from the average price in September 2019, and a 35% decrease from the average price in October 2018 (fig. 2) (CRU Group, 2019).

Industry News

Jubilee Metals Group Plc (United Kingdom) announced the acquisition of rights to the earnings from PGM tailings produced at the Heric Project in South Africa from Heric Ferrochrome Pty Ltd. (South Africa). The agreement included 1.70 million metric tons (Mt) of unprocessed tailings at the Heric operations, 630,000 metric tons (t) of previously

processed tailings at Heric, and rights to an additional 1 Mt of PGM-rich material at Jubilee’s Windsor Chrome operations that was previously held by Heric Ferrochrome. As a result, operations at the Heric Project shifted from processing joint venture partnership between Jubilee and Heric Ferrochrome to 100% ownership of surface tailings and recovery operations by Jubilee. In addition, Jubilee renamed the Heric operations to Inyoni (Jubilee Metals Group Plc, 2019).

Valbruna Canada Ltd., a subsidiary of Acciaierie Valbruna S.p.A. (Italy), acquired ASW Steel Inc. (Canada) at the end of September. The new company, Valbruna ASW, Inc., took over ASW Steel’s production capabilities, including approximately 100,000 metric tons per year of alloy-, carbon-, and stainless-steel products (Acciaierie Valbruna S.p.A., 2019).

References Cited

- Acciaierie Valbruna S.p.A., 2019, Acquisition of ASW Steel, Inc.: Vicenza, Italy, Acciaierie Valbruna S.p.A. news, September 30. (Accessed December 9, 2019, at <http://www.valbruna-stainless-steel.com/events-and-news/news/acquisizione-di-asw-steel-inc-1>.)
- CRU Group, 2019, CRU prices_chrome_historical data_01-nov-2019-oct-avg: CRU Group, November 1. (Accessed November 13, 2019, via <http://www.crugroup.com/>.)
- Jubilee Metals Group Plc, 2019, Acquisition at Heric—Transforming operations: London, United Kingdom, Jubilee Metals Group Plc press release, October 24. (Accessed December 9, 2019, at <https://jubileemetalsgroup.com/investors/rns/acquisition-at-heric-transforming-operations/>.)

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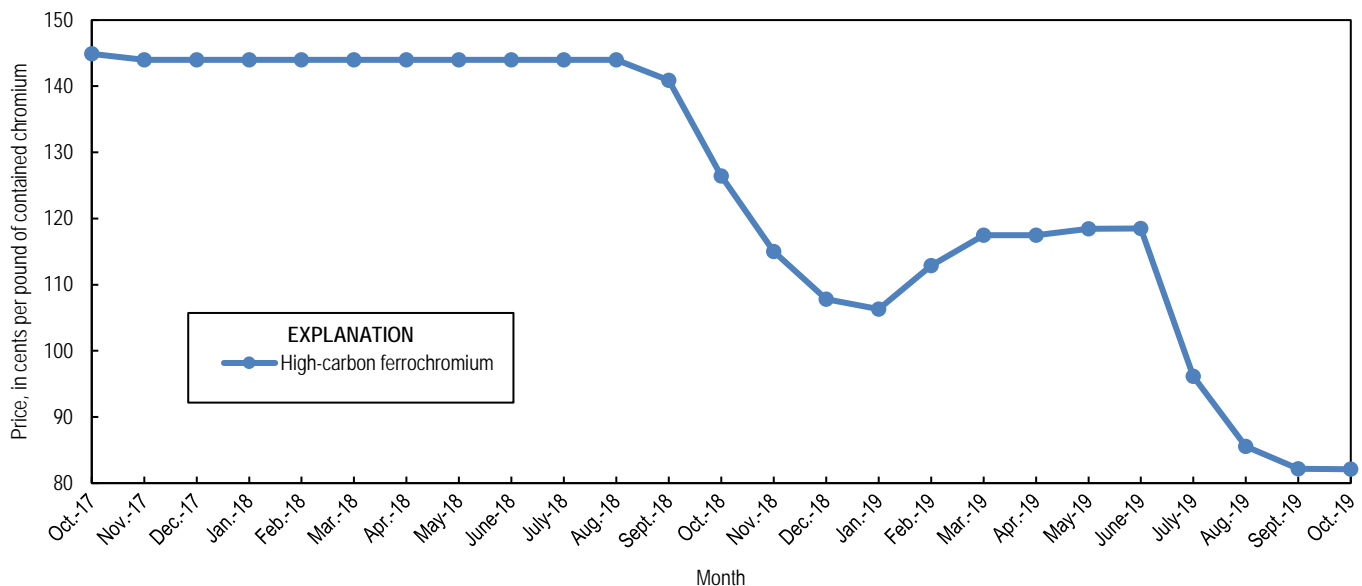


Figure 2. Average monthly prices for U.S. high-carbon ferrochromium from October 2017 through October 2019. Source: CRU Group.

TABLE 1
U.S. SALIENT CHROMIUM STATISTICS¹

(Metric tons, gross weight)

	2018	2019			
	January– December ^p	August	September	October	January– October ²
Production, stainless steel ³	2,810,000	226,000	220,000	204,000	2,220,000
Components of U.S. supply:					
Stainless steel scrap receipts	818,000	65,000	64,600	66,200	677,000
Stainless steel scrap consumption	1,230,000	101,000	102,000	103,000	1,040,000
Imports for consumption:					
Chromite ore	197,000	292	5,070	5,570	108,000
Ferrochromium:					
More than 4% carbon	495,000	41,600	46,200	5,870	333,000
More than 3% but not more than 4% carbon	8,610	--	--	140	308
More than 0.5% but not more than 3% carbon	4,130	80	20	182	1,720
Not more than 0.5% carbon	53,100	5,830	2,100	3,710	36,800
Ferrochromium silicon	18,000	784	485	4,420	16,200
Total ferroalloy imports	579,000	48,300	48,800	14,300	388,000
Chromium metal ⁴	15,500	1,030	875	1,150	11,700
Stainless steel	953,000	63,700	51,300	57,700	652,000
Stainless steel scrap	331,000	19,200	17,800	19,100	176,000
Distribution of U.S. supply:					
Consumption, industry, chromium ferroalloys and metal	411,000 ^r	33,100 ^r	33,400 ^r	33,600	334,000
Exports:					
Chromite ore	6,280	382	218	61	2,040
Chromium ferroalloys:					
High-carbon ferrochromium	731	3	7	283	949
Low-carbon ferrochromium	1,740	35	23	41	401
Ferrochromium silicon	60	--	--	4	22
Total ferroalloy exports	2,530	38	30	328	1,370
Chromium metal	514	44	25	39	377
Stainless steel	668,000	34,300	41,800	36,200	382,000
Stainless steel scrap	653,000	30,500	30,400	45,500	366,000
Stocks at end of period:					
Consumer, industry, chromium ferroalloys and metal	15,400 ^r	14,500 ^r	13,700 ^r	13,900	13,900
Government stockpile:					
Chromium ferroalloys	71,200	67,300	66,900	66,900	66,900
Chromium metal	3,850	3,850	3,850	3,850	3,850

^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)

	2019		
	September	October	January– October ³
Consumption by end use:			
Steel:			
Carbon steel	171	128	1,660
High-strength low-alloy steel	146	146	1,460
Stainless and heat-resisting steel	28,700	29,000	287,000
Unspecified steel ⁴	2,720	2,720	27,100
Superalloys	424	430	4,250
Other alloys and uses ⁵	1,230 ^r	1,220	12,200
Total	33,400^r	33,600	334,000
Total, chromium content	19,500^r	19,600	195,000
Consumption by material:			
Low-carbon ferrochromium	1,840	1,800	18,600
High-carbon ferrochromium	27,900 ^r	28,000	279,000
Ferrochromium silicon	W	W	W
Chromium metal	162	162	1,900
Chromite ore	W	W	W
Chromium-aluminum alloy	W	W	W
Other chromium materials	W	W	W
Total	33,400^r	33,600	334,000
Total, chromium content	19,500^r	19,600	195,000
Consumer stocks:			
Low-carbon ferrochromium	1,570	1,600	1,600
High-carbon ferrochromium	7,180	7,240	7,240
Ferrochromium silicon	793	835	835
Chromium metal	44	44	44
Chromium-aluminum alloy	W	W	W
Other chromium materials	W	W	W
Total	13,700^r	13,900	13,900
Total, chromium content	7,640^r	7,700	7,700

^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.

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

(metric tons)

	Chromium ferroalloys		Chromium metal
	High-carbon ferro- chromium	Low-carbon ferro- chromium	
2018:			
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
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

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)
2018:							
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 ⁴	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
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
January–October ⁴	2,040	1,740	1,370	707	2,270	377	11,500

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)

	2018	2019		
	January– December	September	October	January– October ²
Chromite ore:				
Not more than 40% chromic oxide:				
Gross weight	462	140	54	825
Chromic oxide content	173	55	21	320
More than 40% but less than 46% chromic oxide:				
Gross weight	14,600	364	525	2,620
Chromic oxide content	6,590	159	226	1,140
46% or more chromic oxide:				
Gross weight	181,000	4,560	4,990	105,000
Chromic oxide content	85,800	2,350	2,350	52,800
Total, all grades:				
Gross weight	197,000	5,070	5,570	108,000
Chromic oxide content	92,600	2,570	2,600	54,300
Ferrochromium:				
Low-carbon: ³				
Not more than 0.5% carbon:				
Gross weight	53,100	2,100	3,710	36,800
Chromium content	37,100	1,500	2,590	25,700
More than 0.5% but not more than 3% carbon:				
Gross weight	4,130	20	182	1,720
Chromium content	2,570	11	125	1,090
Total, low-carbon:				
Gross weight	57,300	2,120	3,890	38,500
Chromium content	39,700	1,510	2,720	26,800
Medium-carbon: ⁴				
Gross weight	8,610	--	140	308
Chromium content	4,560	--	96	181
High-carbon: ⁵				
Gross weight	495,000	46,200	5,870	333,000
Chromium content	269,000	23,900	3,810	183,000
Total, all grades:				
Gross weight	561,000	48,300	9,900	371,000
Chromium content	314,000	25,500	6,620	210,000
Chromium metal:				
Unwrought powders	7,920	697	1,040	9,180
Waste and scrap	177	19	3	207
Other than waste and scrap and unwrought powders	7,440	159	110	2,280
Total, all grades	15,500	875	1,150	11,700

-- 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).

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 2019, 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	377	252	\$426	11,300	7,500	\$15,100
Finland	200	106	100	280	147	178
Germany	--	--	--	3	2	11
India	368	222	383	26,400	16,300	27,600
Kazakhstan	2,460	1,700	2,740	42,700	29,700	62,900
Oman	1,650	971	1,710	7,620	4,490	8,360
Russia	303	209	325	14,000	9,440	17,300
South Africa	--	--	--	205,000	101,000	183,000
Sweden	513	349	673	1,410	953	1,990
Turkey	--	--	--	2,110	1,330	2,850
Zimbabwe	--	--	--	21,500	11,900	19,800
Total	5,870	3,810	6,350	333,000	183,000	340,000
Medium-carbon ferrochromium:⁵						
Kazakhstan	140	96	156	140	96	156
South Africa	--	--	--	54	24	20
Turkey	--	--	--	114	61	61
Total	140	96	156	308	181	236
Low-carbon ferrochromium:⁶						
More than 0.5% but not more than 3% carbon						
Brazil	--	--	--	810	489	1,690
Kazakhstan	163	114	393	547	385	1,410
Russia	--	--	--	54	37	141
South Africa	18	10	30	310	175	544
Total	182	125	423	1,720	1,090	3,780
Not more than 0.5% carbon:						
Brazil	212	131	410	508	316	1,070
China	--	--	--	47	29	115
Germany	528	362	1,780	6,140	4,280	20,300
India	--	--	--	360	229	840
Japan	160	113	624	1,550	1,100	6,320
Kazakhstan	1,900	1,370	5,070	11,900	8,600	33,600
Russia	594	392	1,190	13,000	8,900	31,700
South Africa	--	--	--	40	22	69
Sweden	--	--	--	20	14	77
Turkey	325	229	810	3,220	2,240	9,010
Total	3,710	2,590	9,880	36,800	25,700	103,000
All grades:						
Albania	377	252	426	11,300	7,500	15,100
Brazil	212	131	410	1,320	805	2,770
China	--	--	--	47	29	115
Finland	200	106	100	280	147	178
Germany	528	362	1,780	6,140	4,280	20,300
India	368	222	383	26,800	16,500	28,500
Japan	160	113	624	1,550	1,100	6,320
Kazakhstan	4,660	3,270	8,360	55,300	38,800	98,100
Oman	1,650	971	1,710	7,620	4,490	8,360
Russia	896	602	1,520	27,000	18,400	49,100
South Africa	18	10	30	206,000	102,000	184,000
Sweden	513	349	673	1,430	967	2,070
Turkey	325	229	810	5,440	3,630	11,900
Zimbabwe	--	--	--	21,500	11,900	19,800
Total	9,900	6,620	16,800	371,000	210,000	447,000

(See footnotes at end of table)

TABLE 6—Continued
U.S. IMPORTS FOR CONSUMPTION OF FERROCHROMIUM IN 2019, BY GRADE AND COUNTRY OR LOCALITY¹

-- 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.

Source: U.S. Census Bureau.

TABLE 7
U.S. IMPORTS FOR CONSUMPTION OF CHROMIUM METAL IN 2019,
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:				
China	174	\$2,060	1,690	\$19,100
France	286	2,600	1,960	21,800
Germany	27	205	325	3,500
India	--	--	38	402
Italy	--	--	(4)	5
Japan	--	--	1	71
Korea, Republic of	--	--	1	38
Russia	254	1,740	2,490	22,800
Spain	--	--	26	171
Taiwan	--	--	2	65
United Kingdom	299	3,060	2,640	34,500
Total	1,040	9,660	9,180	102,000
Waste and scrap:				
Canada	--	--	31	128
China	1	19	3	114
Germany	--	--	9	71
Japan	2	12	35	283
Korea, Republic of	--	--	2	11
Taiwan	--	--	15	313
United Kingdom	--	--	112	864
Total	3	31	207	1,790
Other than waste and scrap and unwrought powders:				
Brazil	--	--	2	6
Canada	--	--	(4)	9
China	20	142	31	337
Czechia	--	--	1	7
France	--	--	357	4,550
Germany	(4)	46	5	429
Ireland	--	--	(4)	3
Israel	--	--	(4)	4
Italy	1	3	1	3
Japan	2	79	6	269
Liechtenstein	(4)	11	(4)	20
Lithuania	--	--	(4)	3
Malaysia	(4)	9	(4)	17
Netherlands	--	--	1	4
New Zealand	--	--	1	41
Russia	80	590	1,760	15,100
Serbia	--	--	(4)	4
Spain	--	--	69	455
United Kingdom	6	79	43	603
Total	110	959	2,280	21,800
All grades:				
Brazil	--	--	2	6
Canada	--	--	31	137
China	195	2,220	1,720	19,500
Czechia	--	--	1	7
France	286	2,600	2,320	26,300
Germany	28	251	339	4,000
India	--	--	38	402
Ireland	--	--	(4)	3
Israel	--	--	(4)	4
Italy	1	3	1	8
Japan	4	90	42	624
Korea, Republic of	--	--	3	49
Liechtenstein	(4)	11	(4)	20
Lithuania	--	--	(4)	3
Malaysia	(4)	9	(4)	17
Netherlands	--	--	1	4

(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 LOCALITY¹

Grade and country or locality	October		January–October ²	
	Gross weight (metric tons)	Value ³ (thousands)	Gross weight (metric tons)	Value ³ (thousands)
New Zealand	--	--	1	41
Russia	334	2,340	4,250	37,900
Serbia	--	--	(4)	4
Spain	--	--	95	627
Taiwan	--	--	17	378
United Kingdom	305	3,140	2,800	36,000
Total	1,150	10,700	11,700	126,000

-- 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 2019¹

Stainless steel product	October		January–October ²	
	Gross weight (metric tons)	Value ³ (thousands)	Gross weight (metric tons)	Value ³ (thousands)
Exports:				
Ingot	1,630	\$8,050	14,500	\$79,900
Flat-rolled (width > 600 mm)	23,000	65,300	243,000	654,000
Flat-rolled (width < 600 mm)	5,650	27,300	57,800	276,000
Bars and rods in irregular coils	179	983	2,650	11,800
Other bars and rods	2,600	26,000	26,800	275,000
Wire	727	10,400	7,300	99,100
Tubes, pipes, hollow profiles	2,390	28,500	30,800	318,000
Total	36,200	166,000	382,000	1,710,000
Stainless steel scrap	45,500	30,400	366,000	294,000
Grand total	81,700	197,000	749,000	2,010,000
Imports:				
Ingot	8,980	21,400	101,000	275,000
Flat-rolled (width > 600 mm)	19,300	50,000	207,000	513,000
Flat-rolled (width < 600 mm)	4,710	18,800	44,700	167,000
Bars and rods in irregular coils	2,100	7,510	29,100	96,900
Other bars and rods	9,890	39,300	119,000	454,000
Wire	3,130	15,200	36,800	167,000
Tubes, pipes, hollow profiles	9,590	63,100	114,000	686,000
Total	57,700	215,000	652,000	2,360,000
Stainless steel scrap	19,100	17,100	176,000	158,000
Grand total	76,800	232,000	827,000	2,520,000

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.