

Mineral Industry Surveys

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CHROMIUM IN NOVEMBER 2019

Reported consumption of chromium, on a gross weight basis, in November 2019 decreased slightly compared with reported consumption of chromium in October 2019, and increased by 3% compared with reported consumption in November 2018. High-carbon ferrochromium accounted for 84% of the chromium material consumed in November 2019. Stainless and heat-resisting steels were the leading end uses, consuming 86% of chromium materials. Consumer stocks increased by 7% compared with those of the previous month and increased by 39% compared with those of November 2018 (tables 1, 2).

Stainless steel production decreased by 8% in November 2019 compared with production in October 2019, and

decreased by 3% compared with production in November 2018 (table 1). Government stockpile inventories for chromium metal have remained unchanged since February 2018. Government stockpile inventories of ferroalloys decreased slightly compared with October 2019 and decreased by 8% compared with those of November 2018 (table 3).

Imports of chromite ore, chromium ferroalloys, chromium metal, and stainless steel commonly fluctuate from month to month, although stainless steel imports have decreased overall since December 2017 and stainless steel scrap imports since March 2018 (table 1). Imports of all grades of chromium ferroalloys nearly tripled in November 2019 compared with imports of chromium ferroalloys in October 2019 and

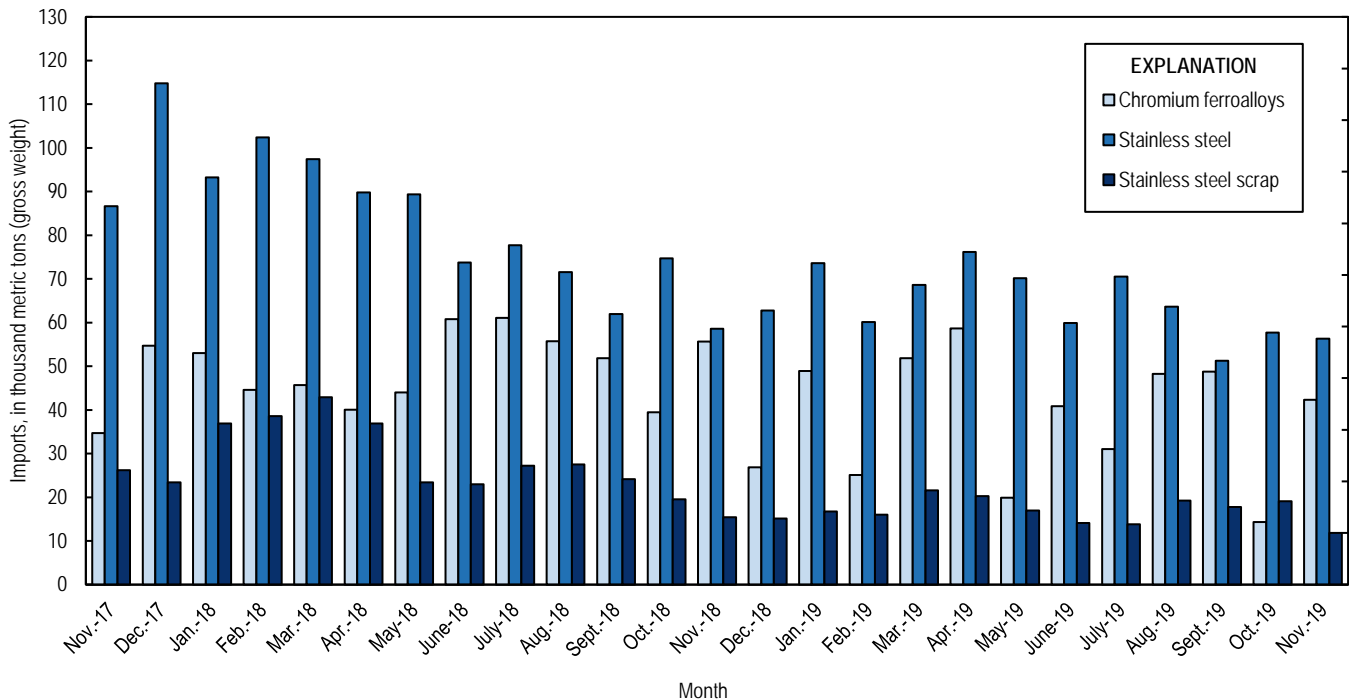


Figure 1. Chromium ferroalloys and stainless steel imports from November 2017 through November 2019. Source: U.S. Census Bureau.

decreased by 24% compared with those in November 2018. Stainless steel imports in November 2019 decreased slightly compared with imports in October 2019 and decreased by 4% compared with those in November 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 decreased by 46% in November 2019 compared with exports in October 2019 and increased by 46% compared with exports in November 2018. Stainless steel exports in November 2019 decreased by 20% compared with exports in October 2019 (table 1) and decreased by 19% compared with those of November 2018.

In November 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, Kazakhstan, and Russia (table 6), whereas the leading import sources for chromium metal were the United Kingdom, Russia, and France (table 7).

The U.S. chromium metal (99% Cr) average price decreased by 3% to \$3.425 per pound in November 2019 compared with the average price in October 2019 and decreased by 39% compared with the average price in November 2018 (CRU Group, 2019). The U.S. high-carbon FeCr (62%–70% chromium) average price was 82.500 cents per pound of contained chromium in November 2019, essentially unchanged from the average price in October 2019, and a 28% decrease from the average price in November 2018 (fig. 2) (CRU Group, 2019b).

Industry News

Indian Metals and Ferro Alloys Ltd. (India) received approval for the construction of a new 96,000-metric-ton-per-

year ferrochromium plant in Kalinganagar by the Odisha State government. Construction would begin after land had been acquired for the project and all relevant paperwork completed (CRU Group, 2019a).

Lanxess Aktiengesellschaft (Germany) reported plans to sell its 74% stake in the Rustenburg Chrome Mine (South Africa) to Clover Alloys Proprietary Ltd. (South Africa). The sale was subject to approval by authorities and would allow Lanxess to focus on its chromium chemical business (Lanxess Aktiengesellschaft, 2019).

References Cited

CRU Group, 2019a, Chrome monitor—Ferroalloy plant given green light in India: CRU Group, November 19. (Accessed November 19, 2019, via <http://www.crugroup.com/>.)
 CRU Group, 2019b, CRU prices_chrome_historical data_02-dec-2019-nov-avg: CRU Group, December 2. (Accessed December 10, 2019, via <http://www.crugroup.com/>.)
 Lanxess Aktiengesellschaft, 2019, Lanxess to sell its stake in chrome ore mine in South Africa to Clover Alloys: Cologne, Germany, Lanxess Aktiengesellschaft press release, November 18. (Accessed January 7, 2020, at <https://lanxess.com/en/Media/Press-Releases/2019/11/LANXESS-to-sell-its-stake-in-chrome-ore-mine-in-South-Africa-to-Clover-Alloys>.)

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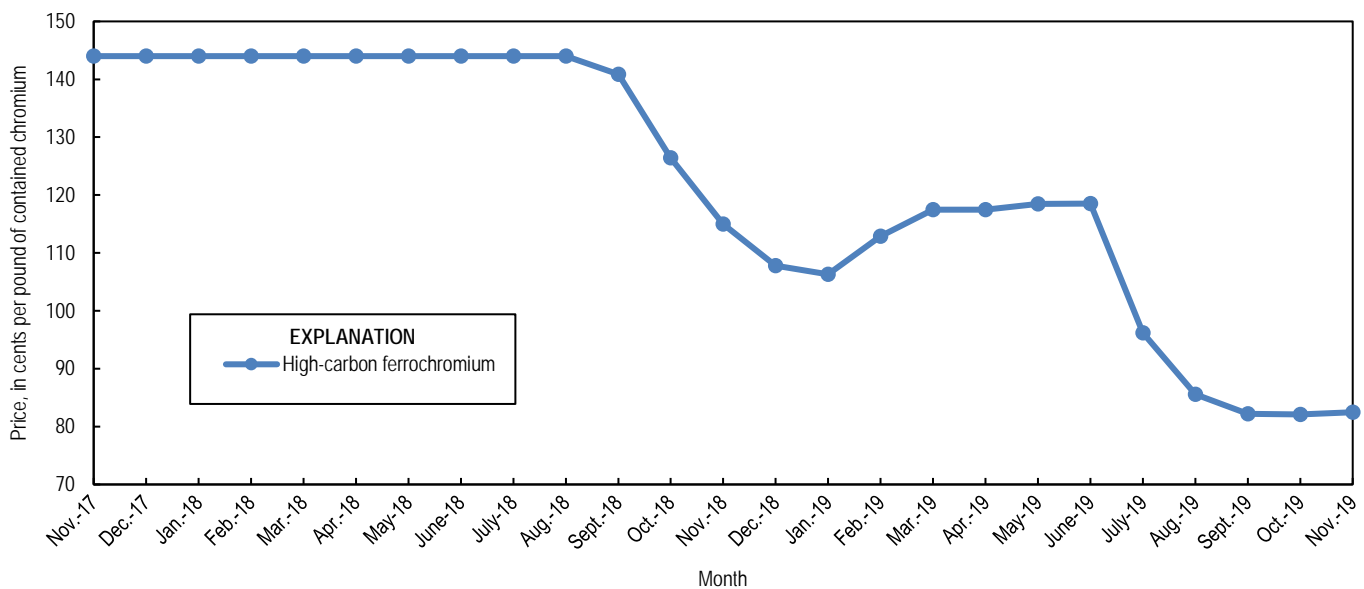


Figure 2. Average monthly prices for U.S. high-carbon ferrochromium from November 2017 through November 2019. Source: CRU Group.

TABLE 1
U.S. SALIENT CHROMIUM STATISTICS¹

(Metric tons, gross weight)

	2018	2019			
	January– December ^p	September	October	November	January– November ²
Production, stainless steel ³	2,810,000	220,000	204,000	188,000	2,410,000
Components of U.S. supply:					
Stainless steel scrap receipts	818,000	64,600	66,200	60,700	737,000
Stainless steel scrap consumption	1,230,000	102,000	103,000	94,400	1,130,000
Imports for consumption:					
Chromite ore	197,000	5,070	5,570	6,770	115,000
Ferrochromium:					
More than 4% carbon	495,000	46,200	5,870	40,200	373,000
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	20	182	113	1,830
Not more than 0.5% carbon	53,100	2,100	3,710	2,010	38,800
Ferrochromium silicon	18,000	485	4,420	--	16,200
Total ferroalloy imports	579,000	48,800	14,300	42,300	430,000
Chromium metal ⁴	15,500	875	1,150	1,280	12,900
Stainless steel	953,000	51,300	57,700	56,300	708,000
Stainless steel scrap	331,000	17,800	19,100	11,800	187,000
Distribution of U.S. supply:					
Consumption, industry, chromium ferroalloys and metal	411,000	33,400	33,600	33,300	367,000
Exports:					
Chromite ore	6,280	218	61	141	2,180
Chromium ferroalloys:					
High-carbon ferrochromium	731	7	283	144	1,090
Low-carbon ferrochromium	1,740	23	41	35	436
Ferrochromium silicon	60	--	4	--	22
Total ferroalloy exports	2,530	30	328	179	1,550
Chromium metal	514	25	39	23	400
Stainless steel	668,000	41,800	36,200	29,100	412,000
Stainless steel scrap	653,000	30,400	45,500	33,000	399,000
Stocks at end of period:					
Consumer, industry, chromium ferroalloys and metal	15,400	13,700	13,900	14,800	14,800
Government stockpile:					
Chromium ferroalloys	71,200	66,900	66,900	66,100	66,100
Chromium metal	3,850	3,850	3,850	3,850	3,850

^pPreliminary. -- 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		
	October	November	January– November ³
Consumption by end use:			
Steel:			
Carbon steel	128	122	1,790
High-strength low-alloy steel	146	146	1,610
Stainless and heat-resisting steel	29,000	28,700	316,000
Unspecified steel ⁴	2,720	2,720	29,900
Superalloys	430	423	4,670
Other alloys and uses ⁵	1,220	1,220	13,400
Total	33,600	33,300	367,000
Total, chromium content	19,600	19,400	214,000
Consumption by material:			
Low-carbon ferrochromium	1,800	1,800	20,400
High-carbon ferrochromium	28,000	27,800	307,000
Ferrochromium silicon	W	W	W
Chromium metal	162	162	2,060
Chromium-aluminum alloy	W	W	W
Other chromium materials ⁶	1,130	1,130	12,500
Total	33,600	33,300	367,000
Total, chromium content	19,600	19,400	214,000
Consumer stocks:			
Low-carbon ferrochromium	1,600	1,590	1,590
High-carbon ferrochromium	7,240	8,180	8,180
Ferrochromium silicon	835	823	823
Chromium metal	44	44	44
Chromium-aluminum alloy	33	49	49
Other chromium materials ⁶	4,100	4,100	4,100
Total	13,900	14,800	14,800
Total, chromium content	7,700	8,260	8,260

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	
2018:			
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
November	38,700	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:							
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
November	141	110	179	107	319	23	889
January–November ⁴	2,180	1,850	1,550	814	2,590	400	12,400

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	October	November	January– November ²
Chromite ore:				
Not more than 40% chromic oxide:				
Gross weight	462	54	53	878
Chromic oxide content	173	21	21	341
More than 40% but less than 46% chromic oxide:				
Gross weight	14,600	525	1,030	3,640
Chromic oxide content	6,590	226	442	1,580
46% or more chromic oxide:				
Gross weight	181,000	4,990	5,690	111,000
Chromic oxide content	85,800	2,350	3,300	56,100
Total, all grades:				
Gross weight	197,000	5,570	6,770	115,000
Chromic oxide content	92,600	2,600	3,760	58,000
Ferrochromium:				
Low-carbon: ³				
Not more than 0.5% carbon:				
Gross weight	53,100	3,710	2,010	38,800
Chromium content	37,100	2,590	1,400	27,100
More than 0.5% but not more than 3% carbon:				
Gross weight	4,130	182	113	1,830
Chromium content	2,570	125	64	1,150
Total, low-carbon:				
Gross weight	57,300	3,890	2,120	40,700
Chromium content	39,700	2,720	1,460	28,300
Medium-carbon: ⁴				
Gross weight	8,610	140	--	308
Chromium content	4,560	96	--	181
High-carbon: ⁵				
Gross weight	495,000	5,870	40,200	373,000
Chromium content	269,000	3,810	20,400	204,000
Total, all grades:				
Gross weight	561,000	9,900	42,300	414,000
Chromium content	314,000	6,620	21,900	232,000
Chromium metal:				
Unwrought powders	7,920	1,040	1,050	10,200
Waste and scrap	177	3	2	209
Other than waste and scrap and unwrought powders	7,440	110	227	2,510
Total, all grades	15,500	1,150	1,280	12,900

-- 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	November			January–November 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	147	99	\$154	11,400	7,600	\$15,300
Finland	--	--	--	280	147	178
Germany	--	--	--	3	2	11
India	135	84	82	26,500	16,400	27,700
Kazakhstan	3,130	2,180	3,320	45,800	31,900	66,200
Oman	--	--	--	7,620	4,490	8,360
Russia	--	--	--	14,000	9,440	17,300
South Africa	36,800	18,000	29,500	242,000	120,000	213,000
Sweden	--	--	--	1,410	953	1,990
Turkey	--	--	--	2,110	1,330	2,850
Zimbabwe	--	--	--	21,500	11,900	19,800
Total	40,200	20,400	33,000	373,000	204,000	373,000
Medium-carbon ferrochromium:⁵						
Kazakhstan	--	--	--	140	96	156
South Africa	--	--	--	54	24	20
Turkey	--	--	--	114	61	61
Total	--	--	--	308	181	236
Low-carbon ferrochromium:⁶						
More than 0.5% but not more than 3% carbon						
Brazil	--	--	--	810	489	1,690
Kazakhstan	--	--	--	547	385	1,410
Russia	--	--	--	54	37	141
South Africa	113	64	175	423	239	718
Total	113	64	175	1,830	1,150	3,960
Not more than 0.5% carbon:						
Brazil	--	--	--	508	316	1,070
China	--	--	--	47	29	115
Germany	540	369	1,910	6,680	4,650	22,200
India	75	49	162	435	278	1,000
Japan	160	114	626	1,710	1,220	6,940
Kazakhstan	158	112	444	12,100	8,710	34,100
Russia	729	514	1,720	13,700	9,410	33,400
South Africa	--	--	--	40	22	69
Sweden	--	--	--	20	14	77
Turkey	345	242	836	3,560	2,480	9,850
Total	2,010	1,400	5,690	38,800	27,100	109,000
All grades:						
Albania	147	99	154	11,400	7,600	15,300
Brazil	--	--	--	1,320	805	2,770
China	--	--	--	47	29	115
Finland	--	--	--	280	147	178
Germany	540	369	1,910	6,690	4,650	22,200
India	210	133	245	27,000	16,700	28,700
Japan	160	114	626	1,710	1,220	6,940
Kazakhstan	3,280	2,290	3,760	58,600	41,100	102,000
Oman	--	--	--	7,620	4,490	8,360
Russia	729	514	1,720	27,700	18,900	50,800
South Africa	36,900	18,100	29,600	243,000	120,000	214,000
Sweden	--	--	--	1,430	967	2,070
Turkey	345	242	836	5,780	3,870	12,800
Zimbabwe	--	--	--	21,500	11,900	19,800
Total	42,300	21,900	38,900	414,000	232,000	486,000

(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	November		January–November ²	
	Gross weight (metric tons)	Value ³ (thousands)	Gross weight (metric tons)	Value ³ (thousands)
Unwrought powders:				
China	81	\$886	1,770	\$20,000
France	313	2,680	2,270	24,400
Germany	25	391	349	3,900
India	19	195	57	597
Italy	--	--	(4)	5
Japan	--	--	1	71
Korea, Republic of	--	--	1	38
Russia	237	1,690	2,730	24,500
Spain	--	--	26	171
Taiwan	--	--	2	65
United Kingdom	372	3,740	3,020	38,200
Total	1,050	9,580	10,200	112,000
Waste and scrap:				
Canada	--	--	31	128
China	1	40	4	154
Germany	--	--	9	71
Japan	--	--	35	283
Korea, Republic of	--	--	2	11
Taiwan	--	--	15	313
United Kingdom	1	6	113	870
Total	2	46	209	1,830
Other than waste and scrap and unwrought powders:				
Brazil	--	--	2	6
Canada	--	--	(4)	9
China	--	--	31	337
Czechia	--	--	1	7
France	8	101	365	4,650
Germany	1	44	6	472
Ireland	--	--	(4)	3
Israel	--	--	(4)	4
Italy	--	--	1	3
Japan	1	58	7	327
Liechtenstein	--	--	(4)	20
Lithuania	--	--	(4)	3
Malaysia	--	--	(4)	17
Netherlands	--	--	1	4
New Zealand	--	--	1	41
Russia	172	976	1,930	16,000
Serbia	--	--	(4)	4
Spain	--	--	69	455
United Kingdom	46	325	88	928
Total	227	1,500	2,510	23,300
All grades:				
Brazil	--	--	2	6
Canada	--	--	31	137
China	82	927	1,800	20,500
Czechia	--	--	1	7
France	321	2,780	2,640	29,100
Germany	25	434	364	4,440
India	19	195	57	597
Ireland	--	--	(4)	3
Israel	--	--	(4)	4
Italy	--	--	1	8
Japan	1	58	43	682
Korea, Republic of	--	--	3	49
Liechtenstein	--	--	(4)	20
Lithuania	--	--	(4)	3
Malaysia	--	--	(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	November		January–November ²	
	Gross weight (metric tons)	Value ³ (thousands)	Gross weight (metric tons)	Value ³ (thousands)
New Zealand	--	--	1	41
Russia	409	2,670	4,660	40,600
Serbia	--	--	(4)	4
Spain	--	--	95	627
Taiwan	--	--	17	378
United Kingdom	419	4,070	3,220	40,000
Total	1,280	11,100	12,900	137,000

-- 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	November		January–November ²	
	Gross weight (metric tons)	Value ³ (thousands)	Gross weight (metric tons)	Value ³ (thousands)
Exports:				
Ingot	999	\$6,450	15,500	\$86,300
Flat-rolled (width > 600 mm)	17,500	51,500	260,000	706,000
Flat-rolled (width < 600 mm)	4,860	24,800	62,700	301,000
Bars and rods in irregular coils	140	1,160	2,790	12,900
Other bars and rods	2,190	24,900	28,900	299,000
Wire	697	9,240	7,990	108,000
Tubes, pipes, hollow profiles	2,710	26,900	33,500	345,000
Total	29,100	145,000	412,000	1,860,000
Stainless steel scrap	33,000	26,300	399,000	320,000
Grand total	62,200	171,000	811,000	2,180,000
Imports:				
Ingot	11,900	40,700	113,000	315,000
Flat-rolled (width > 600 mm)	16,200	42,700	224,000	556,000
Flat-rolled (width < 600 mm)	4,940	17,200	49,700	184,000
Bars and rods in irregular coils	1,520	5,610	30,700	103,000
Other bars and rods	8,960	36,800	128,000	491,000
Wire	2,450	10,200	39,300	177,000
Tubes, pipes, hollow profiles	10,400	61,900	124,000	748,000
Total	56,300	215,000	708,000	2,570,000
Stainless steel scrap	11,800	9,980	187,000	168,000
Grand total	68,200	225,000	896,000	2,740,000

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.