

Mineral Industry Surveys

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CHROMIUM IN SEPTEMBER 2019

Reported consumption of chromium, on a gross weight basis, in September 2019 increased slightly compared with reported consumption of chromium in August 2019, and decreased by 5% compared with reported consumption in September 2018. High-carbon ferrochromium accounted for 86% of the chromium material consumed in September 2019. Stainless and heat-resisting steels were the leading end uses, consuming 89% of chromium materials. Consumer stocks decreased by 7% compared with those of the previous month and increased slightly compared with those of September 2018 (tables 1, 2).

Stainless steel production decreased by 3% in September 2019 compared with production in August 2019, and

decreased by 9% compared with production in September 2018 (table 1). Government stockpile inventories for chromium metal have remained unchanged since February 2018. Government stockpiles inventories of ferroalloys were essentially unchanged compared with August 2019 and decreased by 7% compared with those of September 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 September 2019 decreased by 19% compared with imports in August 2019 as well as those in September 2018 (fig. 1, table 1).

Exports of chromite ore, chromium ferroalloys, chromium

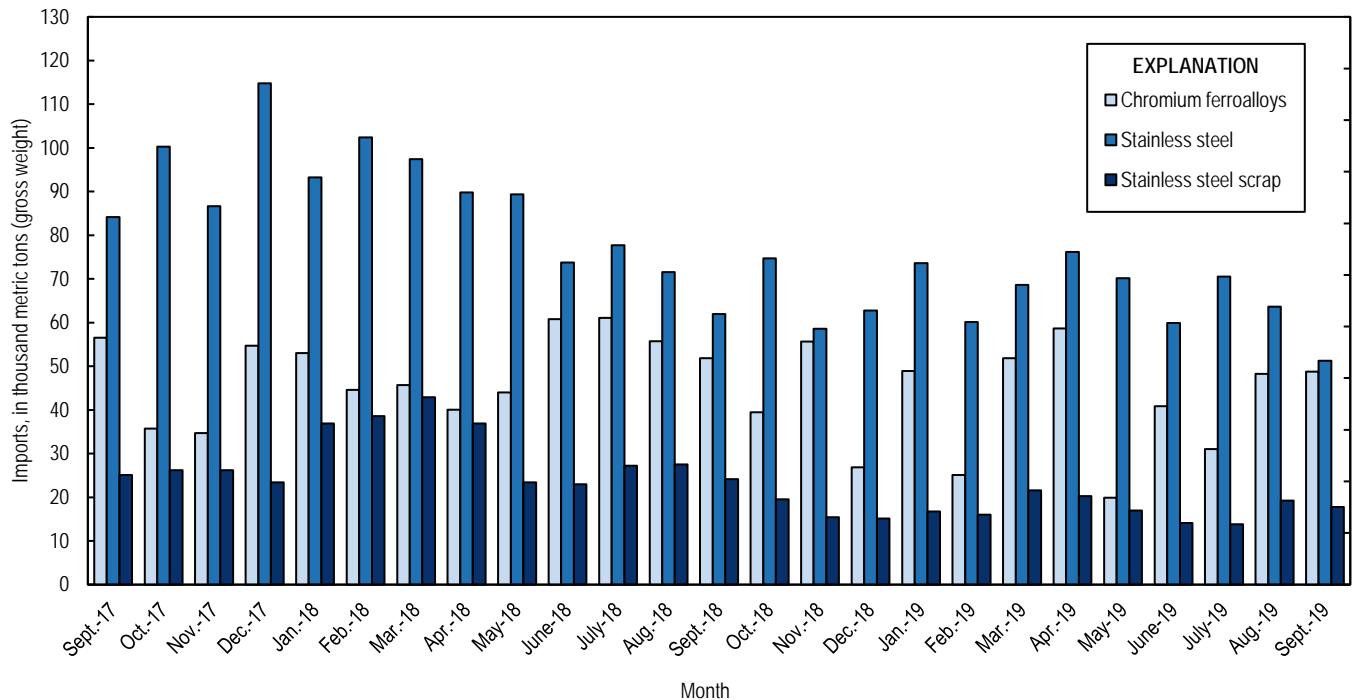


Figure 1. Chromium ferroalloys and stainless steel imports from September 2017 through September 2019. Source: U.S. Census Bureau.

metal, and stainless steel also frequently fluctuate from month to month (table 1, table 4). Stainless steel exports in September 2019 increased by 22% compared with exports in August 2019 (table 1) and increased by 7% compared with those of September 2018.

In September 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, Sweden, and Zimbabwe (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 decreased by 3% to \$3.694 per pound in September 2019 compared with the average price in August 2019 and decreased by 38% compared with the average price in September 2018 (CRU Group, 2019c). The U.S. high-carbon FeCr (62%–70% chromium) average price was 82.188 cents per pound of contained chromium in September 2019, a 4% decrease from the average price in August 2019, and a 42% decrease from the average price in September 2018 (fig. 2) (CRU Group, 2019c).

Industry News

AlbChrome, a chromium ore and ferrochromium producer in Albania, announced it would keep operations shuttered at two ferrochromium furnaces following a period of maintenance. AlbChrome cited low ferrochromium prices and an oversupply as reasons for the extended shutdown (CRU Group, 2019a).

Noront Resources Ltd. (Canada) entered into a 5-year option agreement with Algoma Steel Inc. (Canada) to lease a brownfield property in Sault Ste. Marie, Ontario, Canada, for the construction of a ferrochromium plant that will process chromite ore from its Ring of Fire deposits. According to the agreement, the lease can be renewed for a period of 99 years (Noront Resources Ltd., 2019).

Walsin Yantai Stainless Steel Co., Ltd. (China) entered into

an agreement with Primetals Technologies Ltd. (United Kingdom) for the design and construction of a new stainless-steel combination plant that can convert stainless steel billet into finished products, including stainless steel straight bars, bars-in-coil, and wire rod. The expansion project was expected to begin in late 2020 (CRU Group, 2019b; Primetals Technologies Ltd., 2019).

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- Primetals Technologies Ltd., 2019, Primetals Technologies sells stainless steel combination mill to Walsin Yantai: London, United Kingdom, Primetals Technologies Ltd. press release, September 26. (Accessed November 14, 2019, at <https://www.primetals.com/press-media/news/primetals-technologies-sells-stainless-steel-combination-mill-to-walsin-yantai>.)

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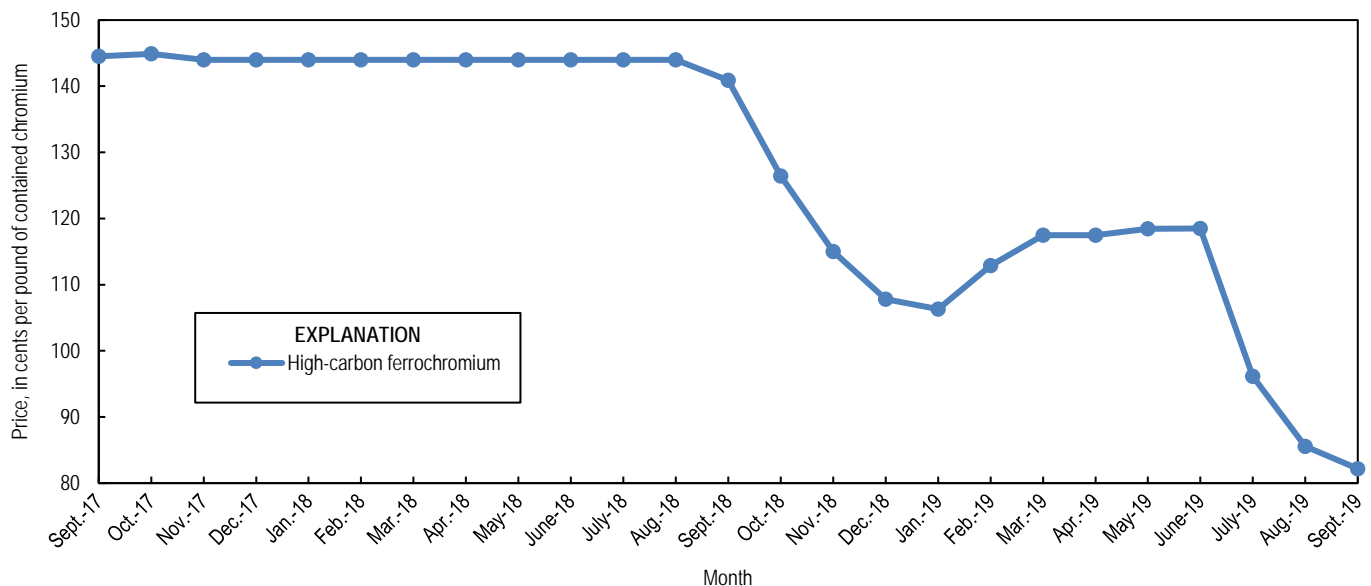


Figure 2. Average monthly prices for U.S. high-carbon ferrochromium from September 2017 through September 2019. Source: CRU Group.

TABLE 1
U.S. SALIENT CHROMIUM STATISTICS¹

(Metric tons, gross weight)

	2018	2019			
	January– December ^p	July	August	September	January– September ²
Production, stainless steel ³	2,810,000	222,000	226,000	220,000	2,020,000
Components of U.S. supply:					
Stainless steel scrap receipts	818,000	67,500	65,000	64,600	610,000
Stainless steel scrap consumption	1,230,000	102,000	101,000	102,000	932,000
Imports for consumption:					
Chromite ore	197,000	39,000	292	5,070	103,000
Ferrochromium:					
More than 4% carbon	495,000	25,400	41,600	46,200	327,000
More than 3% but not more than 4% carbon	8,610	--	--	--	168
More than 0.5% but not more than 3% carbon	4,130	73	80	20	1,540
Not more than 0.5% carbon	53,100	3,540	5,830	2,100	33,100
Ferrochromium silicon	18,000	2020	784	485	11,800
Total ferroalloy imports	579,000	31,000	48,300	48,800	373,000
Chromium metal ⁴	15,500	1,120	1,030	875	10,500
Stainless steel	953,000	70,500	63,700	51,300	594,000
Stainless steel scrap	331,000	13,800	19,200	17,800	156,000
Distribution of U.S. supply:					
Consumption, industry, chromium ferroalloys and metal	404,000	32,000	31,900	32,300	290,000
Exports:					
Chromite ore	6,280	269	382	218	1,980
Chromium ferroalloys:					
High-carbon ferrochromium	731	70	3	7	666
Low-carbon ferrochromium	1,740	25	35	23	360
Ferrochromium silicon	60	--	--	--	18
Total ferroalloy exports	2,530	95	38	30	1,040
Chromium metal	514	42	44	25	338
Stainless steel	668,000	38,100	34,300	41,800	346,000
Stainless steel scrap	653,000	29,400	30,500	30,400	321,000
Stocks at end of period:					
Consumer, industry, chromium ferroalloys and metal	11,300	10,200	10,400	9,640	9,640
Government stockpile:					
Chromium ferroalloys	71,200	67,300	67,300	66,900	66,900
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		
	August	September	January– September ³
Consumption by end use:			
Steel:			
Carbon steel	156	171	1,540
High-strength low-alloy steel	146	146	1,310
Stainless and heat-resisting steel	28,400	28,700	258,000
Unspecified steel ⁴	2,720	2,720	24,400
Superalloys	421	424	3,820
Other alloys and uses ⁵	102	101	860
Total	31,900	32,300	290,000
Total, chromium content	18,800	18,900	170,000
Consumption by material:			
Low-carbon ferrochromium	1,850	1,840	16,800
High-carbon ferrochromium	27,500	27,800	251,000
Ferrochromium silicon	W	W	W
Chromium metal	162	162	1,730
Chromite ore	25	25	185
Chromium-aluminum alloy	W	W	W
Other chromium materials	W	W	W
Total	31,900	32,300	290,000
Total, chromium content	18,800	18,900	170,000
Consumer stocks:			
Low-carbon ferrochromium	1,620	1,570	1,570
High-carbon ferrochromium	7,910	7,180	7,180
Ferrochromium silicon	766	793	793
Chromium metal	44	44	44
Chromium-aluminum alloy	W	W	W
Other chromium materials	W	W	W
Total	10,400	9,640	9,640
Total, chromium content	6,200	5,730	5,730

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:			
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
July	39,900	27,400	3,850
August	39,900	27,400	3,850
September	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:							
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 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
January–September ⁴	1,980	1,690	1,040	522	1,750	338	10,200

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	August	September	January– September ²
Chromite ore:				
Not more than 40% chromic oxide:				
Gross weight	462	--	140	771
Chromic oxide content	173	--	55	299
More than 40% but less than 46% chromic oxide:				
Gross weight	14,600	158	364	2,090
Chromic oxide content	6,590	69	159	912
46% or more chromic oxide:				
Gross weight	181,000	134	4,560	99,900
Chromic oxide content	85,800	98	2,350	50,500
Total, all grades:				
Gross weight	197,000	292	5,070	103,000
Chromic oxide content	92,600	167	2,570	51,700
Ferrochromium:				
Low-carbon: ³				
Not more than 0.5% carbon:				
Gross weight	53,100	5,830	2,100	33,100
Chromium content	37,100	4,030	1,500	23,100
More than 0.5% but not more than 3% carbon:				
Gross weight	4,130	80	20	1,540
Chromium content	2,570	45	11	961
Total, low-carbon:				
Gross weight	57,300	5,910	2,120	34,700
Chromium content	39,700	4,070	1,510	24,100
Medium-carbon: ⁴				
Gross weight	8,610	--	--	168
Chromium content	4,560	--	--	85
High-carbon: ⁵				
Gross weight	495,000	41,600	46,200	327,000
Chromium content	269,000	23,200	23,900	179,000
Total, all grades:				
Gross weight	561,000	47,500	48,300	361,000
Chromium content	314,000	27,300	25,500	204,000
Chromium metal:				
Unwrought powders	7,920	675	697	8,140
Waste and scrap	177	12	19	204
Other than waste and scrap and unwrought powders	7,440	345	159	2,170
Total, all grades	15,500	1,030	875	10,500

-- 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	September			January–September 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	1,290	850	\$1,470	10,900	7,250	\$14,700
Finland	--	--	--	80	41	78
Germany	--	--	--	3	2	11
India	1,940	1,170	2,010	26,000	16,100	27,200
Kazakhstan	2,140	1,490	3,170	40,200	28,000	60,200
Oman	--	--	--	5,980	3,520	6,660
Russia	--	--	--	13,700	9,230	16,900
South Africa	35,700	17,600	29,200	205,000	101,000	183,000
Sweden	--	--	--	902	604	1,320
Turkey	--	--	--	2,110	1,330	2,850
Zimbabwe	5,150	2,830	4,280	21,500	11,900	19,800
Total	46,200	23,900	40,200	327,000	179,000	333,000
Medium-carbon ferrochromium:⁵						
South Africa	--	--	--	54	24	20
Turkey	--	--	--	114	61	61
Total	--	--	--	168	85	81
Low-carbon ferrochromium:⁶						
More than 0.5% but not more than 3% carbon						
Brazil	--	--	--	810	489	1,690
Kazakhstan	--	--	--	384	270	1,020
Russia	--	--	--	54	37	141
South Africa	20	11	31	292	165	513
Total	20	11	31	1,540	961	3,360
Not more than 0.5% carbon:						
Brazil	--	--	--	296	185	664
China	--	--	--	47	29	115
Germany	516	359	1,930	5,610	3,920	18,500
India	115	75,937	252,257	360	229	840
Japan	100	71	384	1,400	990	5,690
Kazakhstan	780	563	2,180	10,100	7,230	28,600
Russia	428	321	1,140	12,400	8,500	30,500
South Africa	--	--	--	40	22	69
Sweden	19,505	13.79	77.4	20	14	77
Turkey	140	97	413	2,890	2,010	8,200
Total	2,100	1,500	6,370	33,100	23,100	93,200
All grades:						
Albania	1,290	850	1,470	10,900	7,250	14,700
Brazil	--	--	--	1,110	673	2,360
China	--	--	--	47	29	115
Finland	--	--	--	80	41	78
Germany	516	359	1,930	5,620	3,920	18,500
India	2,050	1,250	2,260	26,400	16,300	28,100
Japan	100	71	384	1,400	990	5,690
Kazakhstan	2,920	2,050	5,350	50,600	35,500	89,800
Oman	--	--	--	5,980	3,520	6,660
Russia	428	321	1,140	26,100	17,800	47,600
South Africa	35,700	17,600	29,300	206,000	102,000	184,000
Sweden	19,505	13.79	77.4	922	618	1,400
Turkey	140	97	413	5,110	3,400	11,100
Zimbabwe	5,150	2,830	4,280	21,500	11,900	19,800
Total	48,300	25,500	46,600	361,000	204,000	430,000

(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	September		January–September ²	
	Gross weight (metric tons)	Value ³ (thousands)	Gross weight (metric tons)	Value ³ (thousands)
Unwrought powders:				
China	151	\$1,970	1,510	\$17,000
France	233	2,400	1,670	19,200
Germany	1	18	298	3,300
India	19	195	38	402
Italy	--	--	(4)	5
Japan	--	--	1	71
Korea, Republic of	--	--	1	38
Russia	140	1,320	2,240	21,100
Spain	--	--	26	171
Taiwan	--	--	2	65
United Kingdom	152	1,940	2,350	31,400
Total	697	7,840	8,140	92,700
Waste and scrap:				
Canada	12	41	31	128
China	--	--	2	95
Germany	--	--	9	71
Japan	2	22	33	272
Korea, Republic of	--	--	2	11
Taiwan	--	--	15	313
United Kingdom	6	33	112	864
Total	19	96	204	1,760
Other than waste and scrap and unwrought powders:				
Brazil	2	6	2	6
Canada	--	--	(4)	9
China	(4)	5	11	196
Czechia	--	--	1	7
France	--	--	357	4,550
Germany	(4)	30	5	383
Ireland	--	--	(4)	3
Israel	--	--	(4)	4
Japan	1	85	4	191
Liechtenstein	--	--	(4)	8
Lithuania	--	--	(4)	3
Malaysia	--	--	(4)	8
Netherlands	1	4	1	4
New Zealand	--	--	1	41
Russia	132	919	1,680	14,500
Serbia	--	--	(4)	4
Spain	23	149	69	455
United Kingdom	--	--	37	524
Total	159	1,200	2,170	20,900
All grades:				
Brazil	2	6	2	6
Canada	12	41	31	137
China	151	1,970	1,520	17,300
Czechia	--	--	1	7
France	233	2,400	2,030	23,700
Germany	2	48	312	3,750
India	19	195	38	402
Ireland	--	--	(4)	3
Israel	--	--	(4)	4
Italy	--	--	(4)	5
Japan	3	106	38	534
Korea, Republic of	--	--	3	49
Liechtenstein	--	--	(4)	8
Lithuania	--	--	(4)	3
Malaysia	--	--	(4)	8
Netherlands	1	4	1	4
New Zealand	--	--	1	41

(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	September		January–September ²	
	Gross weight (metric tons)	Value ³ (thousands)	Gross weight (metric tons)	Value ³ (thousands)
Russia	272	2,240	3,920	35,600
Serbia	--	--	(4)	4
Spain	23	149	95	627
Taiwan	--	--	17	378
United Kingdom	158	1,980	2,490	32,800
Total	875	9,140	10,500	115,000

-- 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	September		January–September ²	
	Gross weight (metric tons)	Value ³ (thousands)	Gross weight (metric tons)	Value ³ (thousands)
Exports:				
Ingot	1,190	\$7,880	12,900	\$71,800
Flat-rolled (width > 600 mm)	29,300	71,900	220,000	589,000
Flat-rolled (width < 600 mm)	5,120	24,500	52,200	249,000
Bars and rods in irregular coils	281	1,740	2,470	10,800
Other bars and rods	2,270	25,800	24,200	249,000
Wire	606	8,230	6,570	88,700
Tubes, pipes, hollow profiles	3,040	32,600	28,400	290,000
Total	41,800	173,000	346,000	1,550,000
Stainless steel scrap	30,400	30,900	321,000	264,000
Grand total	72,200	204,000	667,000	1,810,000
Imports:				
Ingot	9,170	39,800	91,700	253,000
Flat-rolled (width > 600 mm)	14,900	37,500	188,000	463,000
Flat-rolled (width < 600 mm)	3,380	13,200	40,000	148,000
Bars and rods in irregular coils	1,560	5,640	27,000	89,400
Other bars and rods	8,630	32,100	109,000	415,000
Wire	2,840	12,000	33,700	152,000
Tubes, pipes, hollow profiles	10,800	64,400	104,000	623,000
Total	51,300	205,000	594,000	2,140,000
Stainless steel scrap	17,800	15,800	156,000	141,000
Grand total	69,100	221,000	751,000	2,280,000

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.