Mineral Industry Surveys

For information, contact:
Ruth F. Schulte, Chromium Commodity Specialist
National Minerals Information Center
U.S. Geological Survey
989 National Center
Reston, VA 20192
Telephone: (703) 648-4963, Fax: (703) 648-7757
Email: rschulte@usgs.gov

Benjamin N. Bryden (Data)
Telephone: (703) 648-7953
Fax: (703) 648-7975
Email: bbryden@usgs.gov

Internet: http://minerals.usgs.gov/minerals/

CHROMIUM IN SEPTEMBER 2018

Reported consumption of chromium in September 2018 increased by 22% compared with reported consumption of chromium in August 2018 (table 1). Consumer stocks decreased by 4% compared with those of the previous month and decreased by 10% compared with those of September 2017 (table 2). Stainless steel production decreased slightly in September 2018 compared with those of August 2018. However, stainless steel production has increased by 6% compared with production in September 2017. Government stockpile inventories for ferroalloys and chromium metal were unchanged compared with those of August 2018. Compared with those of September 2017, Government stockpile inventories for chromium metal were essentially unchanged and ferroalloys stockpiles decreased by 9% (table 3).

Imports of chromite ore, chromium ferroalloys, chromium metal, and stainless steel commonly fluctuate from month to month, but there has been an overall decline in imports that started in February 2018 (table 1). The leading consumer of chromium remains the stainless-steel industry. Stainless steel imports in September 2018 decreased by 12% compared with imports in August 2018 and decreased by 25% compared with imports in September 2017 (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 September 2018 increased by 9% compared with exports in

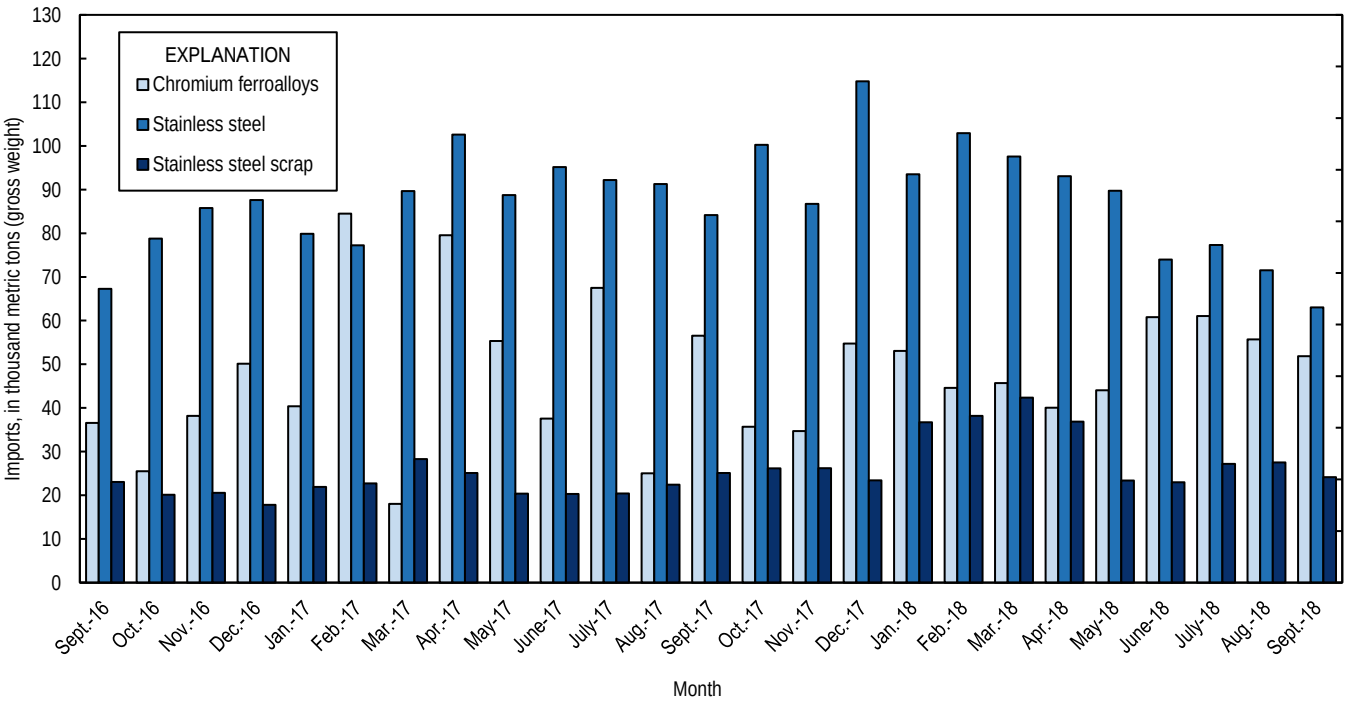

Figure 1. Chromium ferroalloys and stainless steel imports from September 2016 through September 2018. Source: U.S. Census Bureau.

August 2018 (table 1) and decreased by 46% compared with those of September 2017.

For September 2018, the leading import sources for ferrochromium (FeCr) into the United States were, in descending order of quantity by gross weight, Russia, South Africa, and Zimbabwe (table 6), whereas the leading import sources for chromium metal were China, the United Kingdom, and Russia (table 7).

According to CRU Group (2018a), the U.S. high-carbon FeCr (60%–70% chromium) price was 140.875 cents per pound of contained chromium in September 2018, a slight decrease from the price in August 2018 and the first change in average monthly price since November 2017. The decrease was mainly the result of weakening stainless steel prices along with declining chrome ore prices in China and India (CRU Group, 2018b, c). The U.S. charge-grade FeCr (47%–55% chromium) price was 134.500 cents per pound of contained chromium in September 2018, unchanged since March 2017. Prices for both forms of ferrochromium increased sharply from November 2016 through January 2017 before leveling off in early 2017 (fig. 2). The prices in September 2018 remained high compared with those of 2016.

References Cited

CRU Group, 2018a, CRU prices_chrome_historical data_28_sep_2018_sep_avg: CRU Group, September 28. (Accessed November 8, 2018, via http://www.crugroup.com/.)

CRU Group, 2018b, European free market charge chrome softens: CRU Group, September 5. (Accessed November 8, 2018, via http://www.crugroup.com/.)

CRU Group, 2018c, Ferroalloys Weekly Review: CRU Group, September 28. (Accessed November 8, 2018, via http://www.crugroup.com/.)

List services and web feed subscribers are the first to receive notification of USGS minerals information publications and data releases. For information on how to subscribe, go to http://minerals.usgs.gov/minerals/.

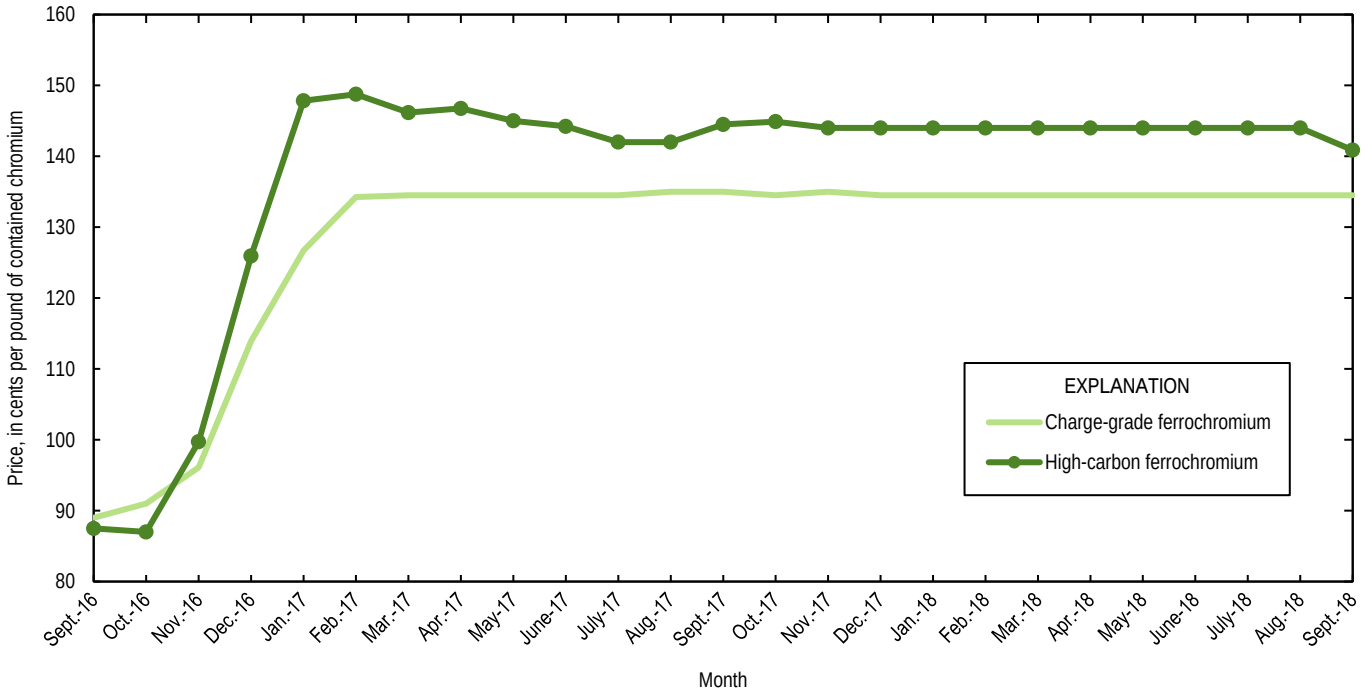

Figure 2. Average monthly prices for U.S. charge-grade and high-carbon ferrochromium from September 2016 through September 2018. Source: CRU Group.

TABLE 1
U.S. SALIENT CHROMIUM STATISTICS[1]

(Metric tons, gross weight)

	2017	2018			
	January–December[p]	July	August	September	January–September[2]
Production, stainless steel[3]	2,750,000	254,000	246,000	241,000	2,180,000
Components of U.S. supply:					
Stainless steel scrap receipts	902,000	74,100	76,100	64,600	666,000
Stainless steel scrap consumption	1,350,000	111,000	110,000	94,900	992,000
Imports for consumption:					
Chromite ore	130,000	1,750	36,000	26,000	148,000
Ferrochromium:					
More than 4% carbon	507,000	52,400	48,300	45,100	389,000
More than 3% but not more than 4% carbon	6,740	54	513	--	1,050
More than 0.5% but not more than 3% carbon	2,820	363	232	161	3,200
Not more than 0.5% carbon	51,600	5,260	4,000	4,670	48,200
Ferrochromium silicon	21,500	2,970	2,710	1,940	15,200
Total ferroalloy imports	590,000	61,100	55,700	51,800	457,000
Chromium metal[4]	14,500	1,530	1,910	1,390	14,400
Stainless steel	1,100,000	77,300	71,500	63,000	763,000
Stainless steel scrap	282,000	27,200	27,500	24,100	279,000
Distribution of U.S. supply:					
Consumption, industry, chromium ferroalloys and metal	421,000	35,500	28,000	34,000	295,000
Exports:					
Chromite ore	11,100	811	181	294	4,050
Chromium ferroalloys:					
High-carbon ferrochromium	1,240	3	--	12	543
Low-carbon ferrochromium	854	252	123	153	1,330
Ferrochromium silicon	15	--	--	--	34
Total ferroalloy exports	2,110	255	123	165	1,910
Chromium metal	622	41	33	53	400
Stainless steel	974,000	32,000	35,900	39,000	552,000
Stainless steel scrap	488,000	95,100	28,400	124,000	600,000
Stocks at end of period:					
Consumer, industry, chromium ferroalloys and metal	9,830	9,680	9,870	9,500	9,500
Government stockpile:					
Chromium ferroalloys	76,800	72,100	72,100	72,100	72,100
Chromium metal	3,860	3,850	3,850	3,850	3,850

[p]Preliminary. -- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

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

[3]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.

[4]Includes 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)

	2018		
	August	Septermber	January–September[3]
Consumption by end use:			
Steel:			
Carbon steel	185	197	1,640
High-strength low-alloy steel	146	146	1,320
Stainless and heat-resisting steel	24,400	30,500	263,000
Unspecified steel[4]	2,720	2,720	24,400
Superalloys	438	436	3,940
Other alloys and uses[5]	87	99	860
Total	28,000	34,000	295,000
Total, chromium content	20,100	19,400	176,000
Consumption by material:			
Low-carbon ferrochromium	1,830	1,820	16,500
High-carbon ferrochromium	23,400	29,600	254,000
Ferrochromium silicon	W	W	W
Chromium metal	160	160	1,940
Chromite ore	6	9	88
Chromium-aluminum alloy	W	W	W
Other chromium materials	W	W	W
Total	28,000	34,000	295,000
Total, chromium content	20,100	19,400	176,000
Consumer stocks:			
Low-carbon ferrochromium	1,530	1,490	1,490
High-carbon ferrochromium	7,450	7,150	7,150
Ferrochromium silicon	771	743	743
Chromium metal	51	51	51
Chromium-aluminum alloy	W	W	W
Other chromium materials	W	W	W
Total	9,870	9,500	9,500
Total, chromium content	7,060	5,510	5,510

W Withheld to avoid disclosing company proprietary data; included in "Total."
[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]Includes estimates.
[3]May include revised data that are not broken out by specific month(s).
[4]Includes electrical, full alloy, tool, and unspecified steel end uses.
[5]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[1]

(metric tons)

	Chromium ferroalloys		
	High-carbon ferro-chromium	Low-carbon ferro-chromium	Chromium metal
2017:			
September	50,000	29,100	3,860
October	50,000	29,100	3,860
November	48,600	28,600	3,860
December	48,300	28,500	3,860
2018:			
January	47,900	28,500	3,860
February	47,000	28,300	3,850
March	47,000	28,200	3,850
April	46,300	28,200	3,850
May	45,600	27,900	3,850
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

[1]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[1]

	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)
2017:							
September	258	$113	22	13	$30	70	$1,480
October	228	138	54	23	96	45	1,230
November	138	93	141	92	387	68	1,850
December	169	128	130	61	274	26	598
January–December[4]	11,100	4,760	2,110	956	3,270	622	14,400
2018:							
January	192	142	61	27	88	38	875
February	418	274	123	65	144	64	909
March	575	416	41	22	50	21	604
April	375	238	258	118	247	51	1,120
May	983	398	204	90	365	55	1,300
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
January–September[4]	4,050	2,630	1,910	1,060	2,680	400	9,480

[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]Includes low- and high-carbon ferrochromium and ferrochromium silicon.
[3]Includes chromium metal, waste and scrap, and unwrought powders.
[4]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[1]

(Metric tons)

	2017	2018		
	January–December	August	September	January–September[2]
Chromite ore:				
Not more than 40% chromic oxide:				
Gross weight	676	19	41	137
Chromic oxide content	166	7	15	49
More than 40% but less than 46% chromic oxide:				
Gross weight	13,700	1,610	1,360	9,920
Chromic oxide content	6,150	738	610	4,520
46% or more chromic oxide:				
Gross weight	116,000	34,400	24,600	138,000
Chromic oxide content	55,000	15,900	11,400	64,400
Total, all grades:				
Gross weight	130,000	36,000	26,000	148,000
Chromic oxide content	61,300	16,600	12,000	68,900
Ferrochromium:				
Low-carbon:[3]				
Not more than 0.5% carbon:				
Gross weight	51,600	4,000	4,670	48,200
Chromium content	33,900	2,850	3,220	33,400
More than 0.5% but not more than 3% carbon:				
Gross weight	2,820	232	161	3,200
Chromium content	1,820	153	114	1,970
Total, low-carbon:				
Gross weight	54,400	4,230	4,830	51,400
Chromium content	35,700	3,000	3,330	35,300
Medium-carbon:[4]				
Gross weight	6,740	513	--	1,050
Chromium content	3,370	324	--	663
High-carbon:[5]				
Gross weight	507,000	48,300	45,100	389,000
Chromium content	272,000	24,600	25,900	211,000
Total, all grades:				
Gross weight	568,000	53,000	49,900	442,000
Chromium content	311,000	27,900	29,300	247,000
Chromium metal:				
Unwrought powders	6,140	492	545	5,410
Waste and scrap	298	1	4	122
Other than waste and scrap and unwrought powders	8,090	1,420	845	8,840
Total, all grades	14,500	1,910	1,390	14,400

-- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

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

[3]Ferrochromium containing not more than 3% carbon.

[4]Ferrochromium containing more than 3% carbon but not more than 4% carbon.

[5]Ferrochromium containing more than 4% carbon.

Source: U.S. Census Bureau.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF FERROCHROMIUM IN 2018, BY GRADE AND COUNTRY OR LOCALITY[1]

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	1,090	725	$1,900	13,300	8,770	$23,400
Finland	9,000	4,800	10,600	9,000	4,800	10,600
India	1,730	1,050	2,390	30,800	18,700	42,800
Kazakhstan	1,710	1,190	2,950	28,900	20,100	54,400
Mexico	20	16	50	40	30	103
Oman	316	190	426	9,490	5,250	11,400
Russia	10,300	7,110	19,200	28,300	19,500	52,400
South Africa	10,800	5,250	11,800	238,000	116,000	255,000
Sweden	56	37	112	488	329	957
Turkey	--	--	--	715	469	1,360
Zimbabwe	10,000	5,570	10,300	30,200	17,200	33,200
Total	45,100	25,900	59,800	389,000	211,000	485,000
Medium-carbon ferrochromium, India[5]	--	--	--	1,050	663	1,500
Low-carbon ferrochromium:[6]						
More than 0.5% but not more than 3% carbon						
Brazil	--	--	--	1,940	1,190	4,830
China	--	--	--	119	74	342
India	--	--	--	462	284	848
Kazakhstan	161	114	472	161	114	472
Russia	--	--	--	213	141	304
South Africa	--	--	--	299	168	564
Total	161	114	472	3,200	1,970	7,360
Not more than 0.5% carbon:						
Brazil	135	83	373	1,320	806	3,560
China	88	53	252	650	404	1,890
Germany	240	168	778	7,890	5,510	25,900
India	98	62	261	332	219	878
Japan	259	184	1,110	2,350	1,660	9,480
Kazakhstan	1,440	1,030	4,570	11,200	8,020	36,500
Russia	2,330	1,580	6,130	20,700	14,100	57,100
Turkey	81	55	213	3,790	2,650	11,600
Total	4,670	3,220	13,700	48,200	33,400	147,000
All grades:						
Albania	1,090	725	1,900	13,300	8,770	23,400
Brazil	135	83	373	3,270	2,000	8,390
China	88	53	252	769	478	2,240
Finland	9,000	4,800	10,600	9,000	4,800	10,600
Germany	240	168	778	7,890	5,510	25,900
India	1,830	1,110	2,650	32,700	19,800	46,000
Japan	259	184	1,110	2,350	1,660	9,480
Kazakhstan	3,300	2,340	7,990	40,300	28,300	91,300
Mexico	20	16	50	40	30	103
Oman	316	190	426	9,490	5,250	11,400
Russia	12,700	8,690	25,400	49,100	33,700	110,000
South Africa	10,800	5,250	11,800	238,000	116,000	255,000
Sweden	56	37	112	488	329	957
Turkey	81	55	213	4,510	3,110	12,900
Zimbabwe	10,000	5,570	10,300	30,200	17,200	33,200
Total	49,900	29,300	73,900	442,000	247,000	641,000

(See footnotes at end of table)

TABLE 6-continued
U.S. IMPORTS FOR CONSUMPTION OF FERROCHROMIUM IN 2018, BY GRADE AND COUNTRY OR LOCALITY[1]

-- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

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

[3]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.
[4]Ferrochromium containing more than 4% carbon.
[5]Ferrochromium containing more than 3% carbon but not more than 4% carbon.
[6]Ferrochromium containing not more than 3% carbon.

Source: U.S. Census Bureau.

TABLE 7
U.S. IMPORTS FOR CONSUMPTION OF CHROMIUM METAL IN 2018, BY GRADE AND BY COUNTRY OR LOCALTY[1]

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	31	$490	1,220	$15,100
France	7	127	218	3,570
Germany	56	814	80	1,380
India	--	--	19	186
Japan	--	--	(4)	26
Korea, Republic of	--	--	1	25
Russia	90	1,140	1,410	12,100
Switzerland	--	--	9	65
Taiwan	--	--	2	47
United Kingdom	361	5,840	2,450	34,600
Total	545	8,410	5,410	67,100
Waste and scrap:				
Brazil	--	--	2	6
Canada	3	16	39	214
China	--	--	21	314
Germany	--	--	1	14
Israel	--	--	(4)	3
Taiwan	--	--	6	122
United Kingdom	1	32	53	484
Total	4	48	122	1,160
Other than waste and scrap and unwrought powders:				
Canada	--	--	4	315
China	459	1,070	3,750	13,900
Finland	--	--	40	277
France	148	1,960	1,740	19,200
Germany	30	348	419	3,200
Italy	--	--	(4)	3
Japan	(4)	17	10	350
Liechtenstein	--	--	(4)	3
Malaysia	--	--	(4)	15
New Zealand	--	--	1	43
Russia	188	2,260	2,720	24,400
Spain	--	--	31	190
Taiwan	--	--	1	19
United Kingdom	20	337	117	1,620
Total	845	5,990	8,840	63,500
All grades:				
Brazil	--	--	2	6
Canada	3	16	44	529
China	489	1,560	4,990	29,300
Finland	--	--	40	277
France	156	2,090	1,960	22,800
Germany	85	1,160	500	4,590
India	--	--	19	186
Israel	--	--	(4)	3
Italy	--	--	(4)	3
Japan	(4)	17	11	376
Korea, Republic of	--	--	1	25
Liechtenstein	--	--	(4)	3
Malaysia	--	--	(4)	15
New Zealand	--	--	1	43

(See footnotes at end of table)

TABLE 7-continued
U.S. IMPORTS FOR CONSUMPTION OF CHROMIUM METAL IN 2018, BY GRADE AND BY COUNTRY OR LOCALTY[1]

Grade and country or locality	September		January–September[2]	
	Gross weight (metric tons)	Value[3] (thousands)	Gross weight (metric tons)	Value[3] (thousands)

Russia	278	3,390	4,130	36,500
Spain	--	--	31	190
Switzerland	--	--	9	65
Taiwan	--	--	9	188
United Kingdom	382	6,210	2,620	36,700
Total	1,390	14,400	14,400	132,000

-- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

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

[3]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.

[4]Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 8
U.S. STAINLESS STEEL TRADE, BY PRODUCT, IN 2018[1]

Stainless steel product	September		January–September[2]	
	Gross weight (metric tons)	Value[3] (thousands)	Gross weight (metric tons)	Value[3] (thousands)
Exports:				
Ingot	764	$5,950	23,000	$85,400
Flat-rolled (width > 600 mm)	24,300	64,300	385,000	899,000
Flat-rolled (width < 600 mm)	5,580	28,600	63,600	290,000
Bars and rods in irregular coils	2,440	3,750	9,850	26,900
Other bars and rods	2,700	28,400	28,600	250,000
Wire	644	9,760	8,250	101,000
Tubes, pipes, hollow profiles	2,610	27,700	33,600	304,000
Total	39,000	168,000	552,000	1,960,000
Stainless steel scrap	124,000	24,200	600,000	242,000
Grand total	163,000	193,000	1,150,000	2,200,000
Imports:				
Ingot	8,760	19,600	140,000	402,000
Flat-rolled (width > 600 mm)	25,800	70,400	269,000	693,000
Flat-rolled (width < 600 mm)	4,770	17,600	50,600	179,000
Bars and rods in irregular coils	2,030	7,100	29,200	109,000
Other bars and rods	8,080	32,000	114,000	459,000
Wire	3,950	17,000	39,100	170,000
Tubes, pipes, hollow profiles	9,630	67,000	121,000	731,000
Total	63,000	231,000	763,000	2,740,000
Stainless steel scrap	24,100	24,300	279,000	301,000
Grand total	87,200	255,000	1,040,000	3,050,000

[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]May include revised data that are not broken out by specific month(s).
[3]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.