Mineral Industry Surveys

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CHROMIUM IN SEPTEMBER 2020

Estimated consumption of chromium, on a gross weight basis, in September 2020 decreased by 4% compared with estimated consumption of chromium in August 2020, and decreased by 19% compared with reported consumption in September 2019. Estimated consumer stocks decreased slightly compared with those of the previous month and decreased by 27% compared with those of September 2019 (tables 1, 2).

Stainless steel production increased by 7% in September 2020 compared with production in August 2020, and decreased by 17% compared with production in September 2019 (table 1). Government stockpile inventories for chromium metal have remained essentially unchanged since February 2017. Government stockpile inventories of ferroalloys were unchanged compared with those in August 2020 and decreased by 9% compared with those of September 2019 (table 3).

Imports of chromite ore, chromium ferroalloys, chromium metal, and stainless steel commonly fluctuate from month to month (table 1). In September 2020, imports of all grades of chromium ferroalloys increased by 89% compared with imports of chromium ferroalloys in August 2020, however, were still 79% less than those in in September 2019. Stainless steel imports in September 2020 decreased slightly compared with imports in August 2020 and decreased by 24% compared with those in September 2019 (fig. 1, table 1).

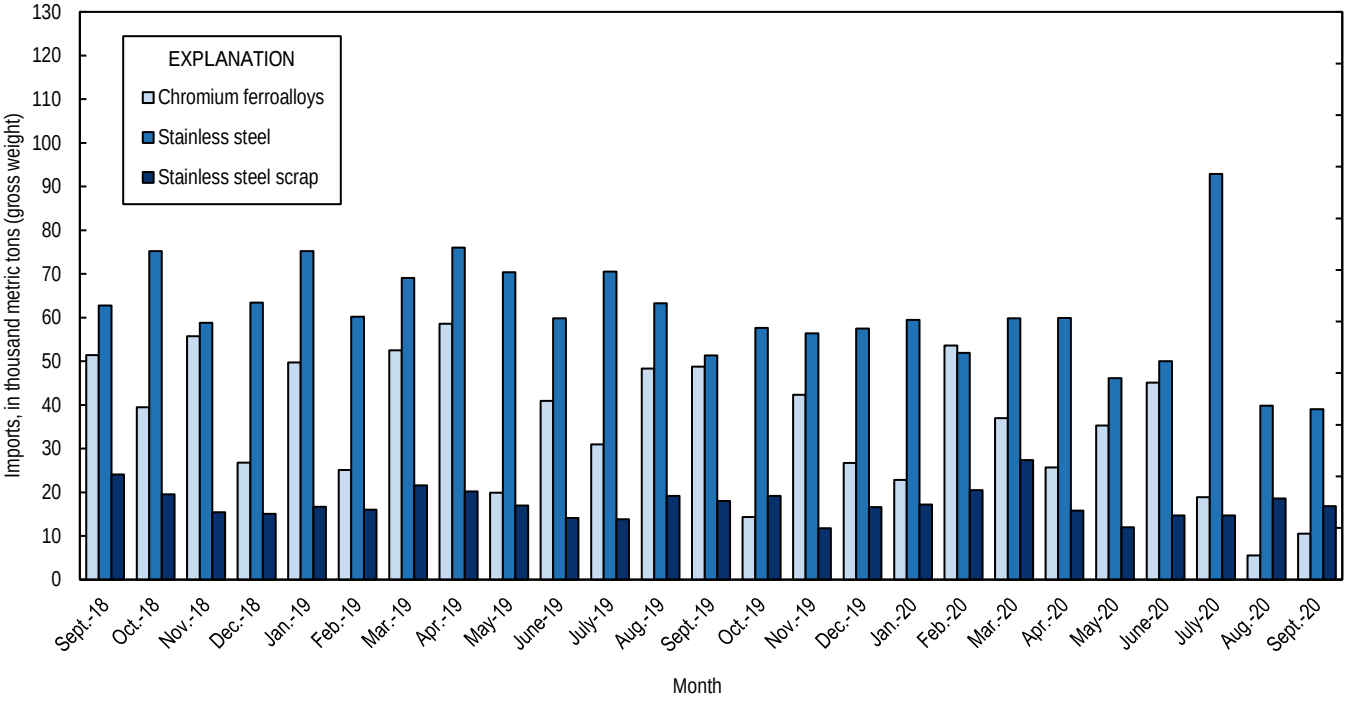

Figure 1. Chromium ferroalloys and stainless steel imports from September 2018 through September 2020. Source: U.S. Census Bureau.

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 increased by 40% in September 2020 compared with exports in August 2020 and almost sevenfold compared with exports in September 2019. Stainless steel exports in September 2020 increased by 15% compared with exports in August 2020, however, were 36% less than those of September 2019 (table 1).

In September 2020, the leading import sources for ferrochromium (FeCr) into the United States were, in descending order of quantity by gross weight, South Africa, Kazakhstan, and Germany (table 6), whereas the leading import sources for chromium metal were Russia, China, and India (table 7).

The U.S. chromium metal (99% Cr) average price was $3.04 per pound in September 2020, a 5% decrease from the average price in August 2020, and a 18% decrease compared with the average price in September 2019 (CRU Group, 2020). The U.S. high-carbon FeCr (62%–70% chromium) average price was 91.67 cents per pound of contained chromium in September 2020, essentially unchanged from the average price in August 2020, and a 12% increase from the average price in September 2019 (fig. 2) (CRU Group, 2020).

Industry News

Cleveland-Cliffs Inc. announced it entered into a definitive agreement with ArcelorMittal S.A. (Luxembourg) to purchase ArcelorMittal USA LLC operations and affiliated subsidiaries (Cleveland-Cliffs Inc., 2020). Six U.S. steelmaking facilities (including stainless steel) were part of the agreement, including Burns Harbor (Burns Harbor, IN), Cleveland (Cleveland, OH), Coatesville (Coatesville, PA), Indiana Harbor (Chicago, IL), Riverdale (Riverdale, IL), and Steelton (Steelton, PA).

Tata Steel Mining Limited (Tata Steel) (India) began chromite mining operations at the Sukinda Chromite Mine in Jaipur district. Tata Steel acquired the right to mine the chromite deposit in an auction held by the Government of Odisha in late March 2020 (Pancholi, 2020).

References Cited

Cleveland-Cliffs Inc., 2020, Cleveland-Cliffs Inc. to acquire ArcelorMittal USA: Cleveland, OH, Cleveland-Cliffs Inc. press release, September 28. (Accessed November 3, 2020, at http://www.clevelandcliffs.com/English/news-center/news-releases/news-releases-details/2020/Cleveland-Cliffs-Inc.-to-Acquire-ArcelorMittal-USA/default.aspx.)

CRU Group, 2020, CRU-prices_chrome_historical-data_01-oct-2020: CRU Group, October 1. (Accessed October 4, 2020, via http://www.crugroup.com/.)

Pancholi, Yogender, 2020, Tata Steel Mining begins operations at Sukinda Chromite Mine in Odisha: Gururgram, India, Steel Guru, September 22. (Accessed November 3, 2020, at https://steelguru.com/auto/tata-steel-mining-begins-operations-at-sukinda-chromite-mine-in-odisha/563451?type=steel.)

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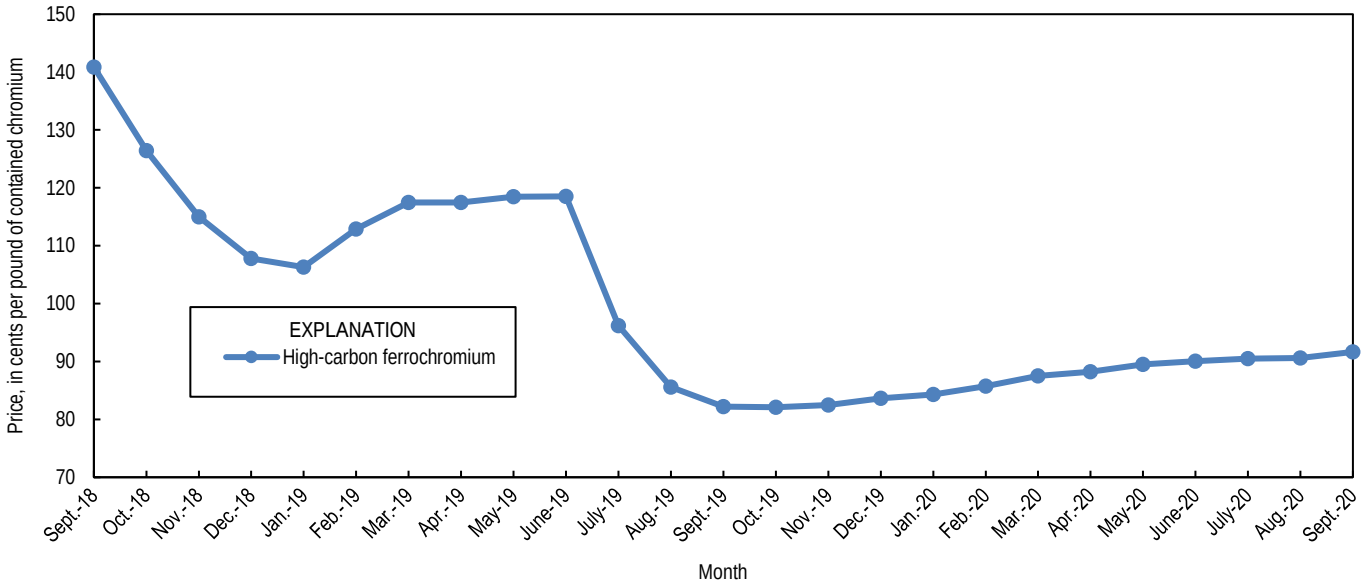

Figure 2. Average monthly prices for U.S. high-carbon ferrochromium from September 2018 through September 2020. Source: CRU Group.

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

(Metric tons, gross weight)

	2019	2020			
	January–December[p]	July	August	September	January–September[2]
Production, stainless steel[3]	2,590,000	144,000	172,000	184,000	1,580,000
Components of U.S. supply:					
Stainless steel scrap receipts	810,000	52,400 [r, e]	62,600 [r, e]	67,000 [e]	616,000 [e]
Stainless steel scrap consumption	1,240,000	78,900 [r, e]	94,300 [r, e]	101,000 [e]	935,000 [e]
Imports for consumption:					
Chromite ore	152,000	5,440	712	3,710	62,000
Ferrochromium:					
More than 4% carbon	393,000	17,200	4,250	8,540	214,000
More than 3% but not more than 4% carbon	1,210	4	34	--	212
More than 0.5% but not more than 3% carbon	2,090	105	--	350	2,520
Not more than 0.5% carbon	44,300	1,280	1,010	1,580	26,400
Ferrochromium silicon	17,600	323	243	--	11,200
Total ferroalloy imports	458,000	18,900	5,540	10,500	254,000
Chromium metal[4]	14,400	690	308	338	10,300
Stainless steel	767,000	92,900	39,800	39,000	499,000
Stainless steel scrap	204,000	14,700	18,600	16,800	158,000
Distribution of U.S. supply:					
Consumption, industry, chromium ferroalloys and metal	389,000	26,900	27,000 [e]	26,000 [e]	256,000 [e]
Exports:					
Chromite ore	2,300	96	305	19	1,340
Chromium ferroalloys:					
High-carbon ferrochromium	1,300	51	100	42	437
Low-carbon ferrochromium	437	42	49	125	385
Ferrochromium silicon	22	41	--	41	164
Total ferroalloy exports	1,760	133	149	208	986
Chromium metal	431	46	42	33	317
Stainless steel	436,000	22,500	23,400	27,000	234,000
Stainless steel scrap	469,000	22,800	30,000	21,900	235,000
Stocks at end of period:					
Consumer, industry, chromium ferroalloys and metal	7,530	7,290	7,100 [e]	7,000 [e]	7,000 [e]
Government stockpile:					
Chromium ferroalloys	66,100	61,900	60,700	60,700	60,700
Chromium metal	3,850	3,840	3,830	3,830	3,830

[e]Estimated. [p]Preliminary. [r]Revised. -- 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)

	2020		
	August	September	January–September[3]
Consumption by end use:			
Steel:			
Carbon steel	W	W	W
High-strength low-alloy steel	140 e	130 e	1,230 e
Stainless and heat-resisting steel	23,000 e	22,000 e	222,000 e
Unspecified steel[4]	3,400 e	3,000 e	30,000 e
Superalloys	200 e	200 e	1,800 e
Other alloys and uses[5]	W	W	W
Total	27,000 e	26,000 e	256,000 e
Total, chromium content	16,000 e	15,000 e	145,000 e
Consumption by material:			
Low-carbon ferrochromium	1,700 e	1,500 e	15,500 e
High-carbon ferrochromium	24,000 e	23,000 e	233,000 e
Ferrochromium silicon	W	W	W
Chromium metal	140 e	130 e	1,230 e
Chromite ore	130 e	120 e	1,120 e
Chromium-aluminum alloy	W	W	W
Other chromium materials	W	W	W
Total	27,000 e	26,000 e	256,000 e
Total, chromium content	16,000 e	15,000 e	145,000 e
Consumer stocks:			
Low-carbon ferrochromium	750 e	730 e	730 e
High-carbon ferrochromium	2,100 e	2,000 e	2,000 e
Ferrochromium silicon	W	W	W
Chromium metal	20 e	20 e	20 e
Chromium-aluminum alloy	W	W	W
Other chromium materials[6]	4,100 e	4,000 e	4,000 e
Total	7,100 e	7,000 e	7,000 e
Total, chromium content	3,700 e	3,700 e	3,700 e

eEstimated. 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.
[6]Includes chromite ore as foundry sand.

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
2019:			
September	39,600	27,400	3,850
October	39,600	27,400	3,850
November	38,700	27,400	3,850
December	38,700	27,400	3,850
2020:			
January	37,800	27,400	3,850
February	37,100	27,400	3,850
March	36,700	27,100	3,850
April	36,700	27,100	3,850
May	36,000	26,800	3,850
June	35,700	26,800	3,840
July	35,100	26,800	3,840
August	33,900	26,800	3,830
September	33,900	26,800	3,830

[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)
2019:							
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
December	120	86	83	50	107	31	718
January–December[4]	2,300	1,940	1,760	942	2,810	431	13,100
2020:							
January	147	82	66	36	91	37	733
February	176	104	66	40	118	24	658
March	140	79	106	63	207	35	972
April	115	83	118	61	182	31	550
May	155	90	85	41	106	35	1,050
June	186	133	56	34	72	33	529
July	96	68	133	71	180	46	1,770
August	305	97	149	90	233	42	927
September	19	8	208	115	324	33	727
January–September[4]	1,340	746	986	552	1,510	317	7,910

[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)

	2019	2020		
	January–December	August	September	January–September[2]
Chromite ore:				
Not more than 40% chromic oxide:				
Gross weight	973	156	647	1,840
Chromic oxide content	360	60	119	443
More than 40% but less than 46% chromic oxide:				
Gross weight	4,170	540	493	7,020
Chromic oxide content	1,810	234	215	3,050
46% or more chromic oxide:				
Gross weight	147,000	16	2,570	53,200
Chromic oxide content	90,400	8	1,210	44,400
Total, all grades:				
Gross weight	152,000	712	3,710	62,000
Chromic oxide content	92,500	302	1,550	47,900
Ferrochromium:				
Low-carbon:[3]				
Not more than 0.5% carbon:				
Gross weight	44,300	1,010	1,580	26,400
Chromium content	30,900	686	1,000	17,800
More than 0.5% but not more than 3% carbon:				
Gross weight	2,090	--	350	2,520
Chromium content	1,330	--	244	1,670
Total, low-carbon:				
Gross weight	46,400	1,010	1,930	28,900
Chromium content	32,200	686	1,250	19,500
Medium-carbon:[4]				
Gross weight	1,210	34	--	212
Chromium content	802	17	--	116
High-carbon:[5]				
Gross weight	393,000	4,250	8,540	214,000
Chromium content	215,000	2,610	4,650	119,000
Total, all grades:				
Gross weight	440,000	5,290	10,500	243,000
Chromium content	248,000	3,320	5,900	139,000
Chromium metal:				
Unwrought powders	11,500	308	215	8,730
Waste and scrap	221	(6)	14	125
Other than waste and scrap and unwrought powders	2,680	(6)	110	1,440
Total, all grades	14,400	308	338	10,300

-- 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.

[6]Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 6

U.S. IMPORTS FOR CONSUMPTION OF FERROCHROMIUM IN 2020, 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	211	139	$242	2,810	1,870	$3,280
Brazil	--	--	--	2,170	1,180	1,560
Canada	--	--	--	6	3	9
India	125	76	115	5,830	3,510	4,730
Kazakhstan	1,850	1,280	2,370	44,200	30,700	49,400
Oman	--	--	--	968	499	630
Russia	--	--	--	21,900	13,200	20,700
South Africa	6,000	2,920	5,110	118,000	57,900	97,600
Sweden	362	240	432	768	515	951
Turkey	--	--	--	1,610	1,040	1,790
Zimbabwe	--	--	--	15,400	8,790	9,740
Total	8,540	4,650	8,270	214,000	119,000	190,000
Medium-carbon ferrochromium:[5]						
Russia	--	--	--	76	41	119
Turkey	--	--	--	126	68	68
United Kingdom	--	--	--	10	8	23
Total	--	--	--	212	116	210
Low-carbon ferrochromium:[6]						
More than 0.5% but not more than 3% carbon						
Brazil	--	--	--	1,020	631	1,700
India	--	--	--	200	123	372
Kazakhstan	350	244	675	1,180	835	2,810
Russia	--	--	--	120	85	284
Total	350	244	675	2,520	1,670	5,170
Not more than 0.5% carbon:						
Belgium	--	--	--	1,220	735	3,610
Brazil	375	232	546	1,020	636	1,560
China	--	--	--	9	6	29
Germany	427	292	1,350	2,930	2,000	9,340
India	--	--	--	596	375	1,140
Japan	--	--	--	579	415	2,280
Kazakhstan	324	235	844	6,790	4,880	17,100
Russia	352	173	790	12,500	8,230	25,900
Turkey	100	70	213	779	542	1,950
Total	1,580	1,000	3,740	26,400	17,800	62,900
All grades:						
Albania	211	139	242	2,810	1,870	3,280
Belgium	--	--	--	1,220	735	3,610
Brazil	375	232	546	4,210	2,450	4,820
Canada	--	--	--	6	3	9
China	--	--	--	9	6	29
Germany	427	292	1,350	2,930	2,000	9,340
India	125	76	115	6,630	4,010	6,250
Japan	--	--	--	579	415	2,280
Kazakhstan	2,520	1,760	3,890	52,200	36,400	69,300
Oman	--	--	--	968	499	630
Russia	352	173	790	34,600	21,600	47,000
South Africa	6,000	2,920	5,110	118,000	57,900	97,600
Sweden	362	240	432	768	515	951
Turkey	100	70	213	2,510	1,650	3,810
United Kingdom	--	--	--	10	8	23

(See footnotes at end of table.)

TABLE 6—Continued

U.S. IMPORTS FOR CONSUMPTION OF FERROCHROMIUM IN 2020, 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)
Zimbabwe	--	--	--	15,400	8,790	9,740
Total	10,500	5,900	12,700	243,000	139,000	259,000

-- 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]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 2020,
BY GRADE AND BY COUNTRY OR LOCALITY[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:				
Belgium	--	--	24	$139
China	70	$552	1,080	10,000
Estonia	--	--	10	75
France	--	--	1,930	16,400
Germany	16	115	279	2,250
India	20	172	96	858
Japan	(4)	3	(4)	24
Russia	93	518	3,230	20,900
Spain	--	--	94	482
Switzerland	--	--	20	149
United Kingdom	16	291	1,960	20,000
Total	215	1,650	8,730	71,300
Waste and scrap:				
Canada	--	--	15	43
France	11	34	11	34
Japan	--	--	13	86
United Kingdom	2	42	87	551
Total	14	76	125	714
Other than waste and scrap and unwrought powders:				
Canada	--	--	(4)	5
China	(4)	13	22	279
France	(4)	4	(4)	12
Germany	(4)	7	44	401
Japan	(4)	10	5	207
Liechtenstein	(4)	3	(4)	3
Malaysia	--	--	(4)	32
Russia	110	607	1,170	6,560
Spain	--	--	38	194
United Kingdom	--	--	161	1,600
Total	110	645	1,440	9,300
All grades:				
Belgium	--	--	24	139
Canada	--	--	15	48
China	70	565	1,100	10,300
Estonia	--	--	10	75
France	11	38	1,940	16,400
Germany	16	122	323	2,650
India	20	172	96	858
Japan	(4)	13	17	316
Liechtenstein	(4)	3	(4)	3
Malaysia	--	--	(4)	32
Russia	203	1,120	4,410	27,500
Spain	--	--	132	676
Switzerland	--	--	20	149
United Kingdom	18	333	2,210	22,200
Total	338	2,370	10,300	81,400

-- 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]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 2020[1]

Stainless steel product	September		January–September[2]	
	Gross weight (metric tons)	Value[3] (thousands)	Gross weight (metric tons)	Value[3] (thousands)
Exports:				
Ingot	560	$3,910	8,800	$53,700
Flat-rolled (width > 600 mm)	16,500	44,900	139,000	384,000
Flat-rolled (width < 600 mm)	5,250	28,300	40,800	222,000
Bars and rods in irregular coils	135	510	1,660	9,430
Other bars and rods	1,570	16,800	18,800	200,000
Wire	639	7,490	5,320	79,200
Tubes, pipes, hollow profiles	2,360	23,600	20,200	230,000
Total	27,000	126,000	234,000	1,180,000
Stainless steel scrap	21,900	23,700	235,000	194,000
Grand total	48,900	149,000	469,000	1,370,000
Imports:				
Ingot	3,800	9,770	112,000	297,000
Flat-rolled (width > 600 mm)	13,300	32,100	156,000	371,000
Flat-rolled (width < 600 mm)	2,530	8,380	31,300	113,000
Bars and rods in irregular coils	886	3,480	22,700	74,200
Other bars and rods	6,850	26,400	74,000	285,000
Wire	3,050	11,500	25,100	109,000
Tubes, pipes, hollow profiles	8,550	59,600	77,900	538,000
Total	39,000	151,000	499,000	1,790,000
Stainless steel scrap	16,800	15,400	158,000	138,000
Grand total	55,800	167,000	656,000	1,930,000

[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.