



# Mineral Industry Surveys

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## CHROMIUM IN AUGUST 2021

Reported consumption of chromium, on a gross weight basis, in August 2021 was unchanged compared with consumption of chromium in July 2021 and decreased by 3% compared with consumption in August 2020. Reported consumer stocks were unchanged compared with stocks in July 2021 and increased by 9% compared with those of August 2020 (tables 1, 2).

Stainless steel production decreased by 3% in August 2021 compared with production in July 2021 but increased by 7% compared with production in August 2020 (table 1). Year-to-date production through August 2021 increased by 19% compared with year-to-date production through August 2020. Government stockpile inventories for chromium metal

decreased slightly compared with those in July 2021 and decreased by 6% compared with those in August 2020. Government stockpile inventories of chromium ferroalloys were slightly less compared with those in July 2021 and decreased by 12% compared with those of August 2020 (table 3).

Imports of chromite ore, chromium ferroalloys, stainless steel, and stainless steel scrap commonly fluctuate from month to month (fig. 1, table 1). In August 2021, imports of all grades of chromium ferroalloys decreased by 9% compared with imports of chromium ferroalloys in July 2021 and increased sixfold compared with those in August 2020. However, imports of low-carbon ferrochromium (gross

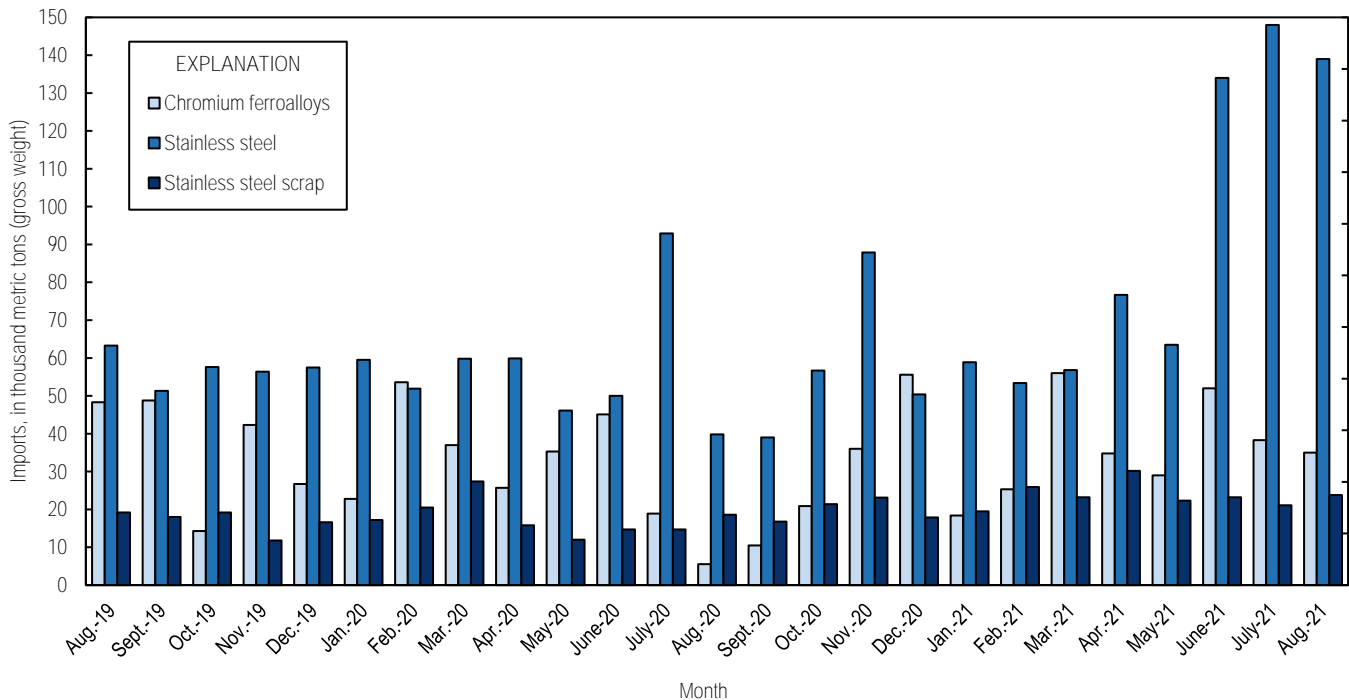


Figure 1. Chromium ferroalloys, stainless steel, and stainless steel scrap imports from August 2019 through August 2021. Source: U.S. Census Bureau.

weight) more than doubled in August 2021 compared with those in July 2021 whereas high-carbon ferrochromium (gross weight) imports decreased by 14% (tables 1, 5).

Stainless steel imports in August 2021 decreased by 6% compared with imports in July 2021 and more than tripled compared with imports in August 2020. Stainless steel scrap imports increased by 13% in August 2021 compared with imports in July 2021 and by 28% compared with those in August 2020 (table 1).

In August 2021, the leading import sources for ferrochromium (FeCr) into the United States were, in descending order of quantity by gross weight, South Africa, Russia, and Kazakhstan (table 6), whereas the leading import sources for chromium metal were Russia, France, and the United Kingdom (table 7).

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 59% in August 2021 compared with exports in July 2021 and more than doubled compared with exports in August 2020. Stainless steel exports in August 2021 decreased by 3% compared with exports in July 2021 and increased by 19% compared with those of August 2020 (table 1).

The U.S. chromium metal (99% Cr) average price was \$4.94 per pound in August 2021, a 14% increase from the average price in July 2021, and a 54% increase compared with the average price in August 2020. The U.S. high-carbon FeCr (62%–70% chromium) average price was 166.11 cents per pound of contained chromium in August 2021, a 17% increase from the average price in July 2021, and an 83% increase from the average price in August 2020 (fig. 2) (CRU Group, 2021a). Supply tightening and an increase in price overseas were attributed to the increase in price for U.S. high-carbon FeCr (Kavanagh and others, 2021).

## Industry News

The Government of Zimbabwe approved an export ban on raw chromite ore in early August, set to take effect in July 2022, to boost domestic ferrochromium production. Exports of chromite ore would only be permitted if all of the ferrochromium smelters in Zimbabwe were unable to process the ore (Backeberg, 2021).

Higher export duties on ferrochromium were imposed by the Government of China on August 1st in an effort to promote energy consumption in the steel industry. The new export tax was set to 40%, up from 15% (CRU Group, 2021b).

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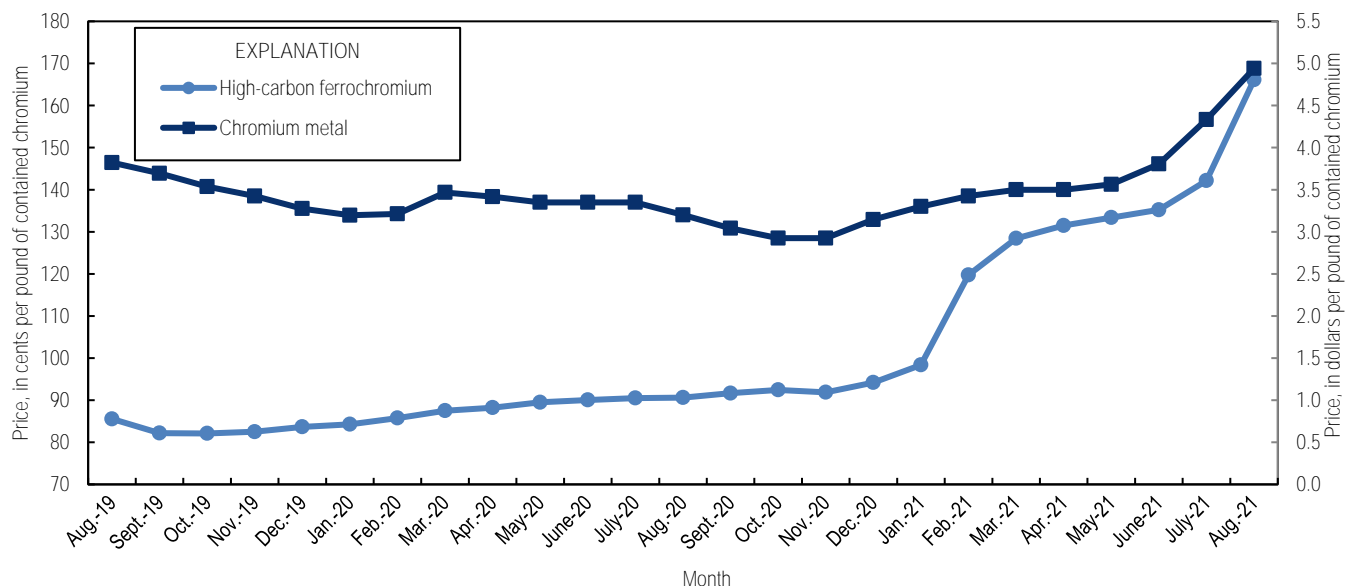


Figure 2. Average monthly prices for U.S. high-carbon ferrochromium from August 2019 through August 2021. Source: CRU Group.

TABLE 1  
U.S. SALIENT CHROMIUM STATISTICS<sup>1</sup>

(Metric tons, gross weight)

	2020	2021			
	January– December	June	July	August	January– August <sup>2</sup>
Production, stainless steel <sup>3</sup>	2,140,000	218,000	189,000	184,000	1,650,000
Components of U.S. supply:					
Stainless steel scrap receipts	682,000	55,200 <sup>e</sup>	47,900 <sup>e</sup>	46,700 <sup>e</sup>	439,000 <sup>e</sup>
Stainless steel scrap consumption	1,040,000	83,400 <sup>e</sup>	72,400 <sup>e</sup>	70,600 <sup>e</sup>	675,000 <sup>e</sup>
Imports for consumption:					
Chromite ore	101,000	38,500	3,420	4,600	84,800
Ferrochromium:					
More than 4% carbon	310,000	32,500	37,400	32,100	232,000
More than 3% but not more than 4% carbon	212	--	--	--	6,580
More than 0.5% but not more than 3% carbon	3,360	--	--	166	1,620
Not more than 0.5% carbon	37,400	14,500	881	2,230	32,700
Ferrochromium silicon	15,800	4,970	--	485	15,400
Total ferroalloy imports	367,000	52,000	38,300	35,000	289,000
Chromium metal <sup>4</sup>	11,600	939	1,000	1,450	8,160
Stainless steel	694,000	134,000	148,000	139,000	730,000
Stainless steel scrap	219,000	23,200	21,100	23,800	189,000
Distribution of U.S. supply:					
Consumption, industry, chromium ferroalloys and metal	350,000	26,100	26,200	26,200	209,000
Exports:					
Chromite ore	1,780	155	156	116	1,400
Chromium ferroalloys:					
High-carbon ferrochromium	949	65	192	397	876
Low-carbon ferrochromium	393	17	62	18	230
Ferrochromium silicon	238	--	20	20	152
Total ferroalloy exports	1,580	82	274	435	1,260
Chromium metal	379	86	15	47	359
Stainless steel	325,000	28,200	28,900	27,900	243,000
Stainless steel scrap	314,000	36,800	24,400	53,500	208,000
Stocks at end of period:					
Consumer, industry, chromium ferroalloys and metal	9,320	7,760	7,740	7,740	7,740
Government stockpile:					
Chromium ferroalloys	59,600	55,000	54,700 <sup>f</sup>	53,700	53,700
Chromium metal	3,750	3,690	3,690	3,620	3,620

<sup>e</sup>Estimated. <sup>f</sup>Revised. -- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>May include revised data that are not broken out by specific month(s).

<sup>3</sup>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.

<sup>4</sup>Includes waste and scrap and other.

TABLE 2  
U.S. CONSUMPTION AND STOCKS OF CHROMIUM PRODUCTS<sup>1</sup>

(Metric tons, gross weight unless otherwise noted)

	2021		
	July	August	January– August <sup>2</sup>
<b>Consumption by end use:</b>			
<b>Steel:</b>			
Carbon steel	W	W	W
High-strength low-alloy steel	136	136	1,090
Stainless and heat-resisting steel	22,100	22,100	177,000
Unspecified steel <sup>3</sup>	3,350	3,350	26,800
Superalloys	204	204	1,630
Other alloys and uses <sup>4</sup>	W	W	W
<b>Total</b>	<b>26,200</b>	<b>26,200</b>	<b>209,000</b>
<b>Total, chromium content</b>	<b>15,100</b>	<b>15,100</b>	<b>121,000</b>
<b>Consumption by material:</b>			
Low-carbon ferrochromium	1,690	1,690	13,400
High-carbon ferrochromium	23,000	23,000	184,000
Ferrochromium silicon	W	W	W
Chromium metal	144	144	1,150
Chromite ore	141	141	1,130
Chromium-aluminum alloy	W	W	W
Other chromium materials	W	W	W
<b>Total</b>	<b>26,200</b>	<b>26,200</b>	<b>209,000</b>
<b>Total, chromium content</b>	<b>15,100</b>	<b>15,100</b>	<b>121,000</b>
<b>Consumer stocks:</b>			
Low-carbon ferrochromium	1,060	1,060	1,060
High-carbon ferrochromium	2,220	2,220	2,220
Ferrochromium silicon	W	W	W
Chromium metal	21	21	21
Chromium-aluminum alloy	W	W	W
Other chromium materials	W	W	W
<b>Total</b>	<b>7,740</b>	<b>7,740</b>	<b>7,740</b>
<b>Total, chromium content</b>	<b>4,810</b>	<b>4,810</b>	<b>4,810</b>

W Withheld to avoid disclosing company proprietary data; included in "Total."

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>May include revised data that are not broken out by specific month(s).

<sup>3</sup>Includes electrical, full alloy, tool, and unspecified steel end uses.

<sup>4</sup>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<sup>1</sup>

(metric tons)

	Chromium ferroalloys		Chromium metal
	High-carbon ferro- chromium	Low-carbon ferro- chromium	
<b>2020:</b>			
August	33,900	26,800	3,830
September	33,900	26,800	3,830
October	33,900	26,800	3,830
November	33,900	26,800	3,790
December	33,000	26,600	3,750
<b>2021:</b>			
January	33,000	26,600	3,750
February	32,400	26,500	3,690
March	28,800	27,500	3,690
April	27,700	27,500	3,690
May	27,700	27,500	3,690
June	27,500	27,500	3,690
July	27,300	27,500	3,690
August	26,200	27,500	3,620

<sup>1</sup>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<sup>1</sup>

	Chromite ore		Chromium ferroalloys <sup>2</sup>			Chromium metal <sup>3</sup>	
	Gross weight (metric tons)	Value (thousands)	Gross weight (metric tons)	Chromium content (metric tons)	Value (thousands)	Gross weight (metric tons)	Value (thousands)
2020:							
August	305	\$97	149	90	\$233	42	\$927
September	19	8	208	115	324	33	727
October	139	120	260	157	316	23	942
November	59	45	83	51	141	22	580
December	222	136	252	133	306	16	531
January–December <sup>4</sup>	1,780	1,040	1,580	893	2,280	379	9,970
2021:							
January	70	55	24	15	43	44	1,050
February	420	264	111	58	169	30	650
March	208	147	209	100	401	47	783
April	157	128	28	17	54	25	659
May	115	106	94	59	155	66	1,200
June	155	86	82	43	142	86	1,200
July	156	104	274	147	529	15	406
August	116	81	435	212	600	47	1,000
January–August <sup>4</sup>	1,400	971	1,260	651	2,090	359	6,960

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes low- and high-carbon ferrochromium and ferrochromium silicon.

<sup>3</sup>Includes chromium metal, waste and scrap, and unwrought powders.

<sup>4</sup>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<sup>1</sup>

(Metric tons)

	2020	2021		
	January– December	July	August	January– August <sup>2</sup>
<b>Chromite ore:</b>				
Not more than 40% chromic oxide:				
Gross weight	3,600	107	2,770	11,600
Chromic oxide content	909	41	638	2,530
More than 40% but less than 46% chromic oxide:				
Gross weight	11,000	312	1,540	10,100
Chromic oxide content	4,780	139	678	4,430
46% or more chromic oxide:				
Gross weight	86,300	3,000	289	63,100
Chromic oxide content	77,500	1,400	170	53,700
<b>Total, all grades:</b>				
Gross weight	101,000	3,420	4,600	84,800
Chromic oxide content	83,200	1,580	1,490	60,700
<b>Ferrochromium:</b>				
Low-carbon: <sup>3</sup>				
Not more than 0.5% carbon:				
Gross weight	37,400	881	2,230	32,700
Chromium content	25,200	668	1,630	23,100
More than 0.5% but not more than 3% carbon:				
Gross weight	3,360	--	166	1,620
Chromium content	2,260	--	117	1,120
<b>Total, low-carbon:</b>				
Gross weight	40,800	881	2,390	34,300
Chromium content	27,400	668	1,740	24,200
Medium-carbon: <sup>4</sup>				
Gross weight	212	--	--	6,580
Chromium content	116	--	--	3,360
High-carbon: <sup>5</sup>				
Gross weight	310,000	37,400	32,100	232,000
Chromium content	169,000	19,000	18,900	129,000
<b>Total, all grades:</b>				
Gross weight	351,000	38,300	34,500	273,000
Chromium content	196,000	19,700	20,700	157,000
<b>Chromium metal:</b>				
Unwrought powders	9,730	993	1,090	6,870
Waste and scrap	168	--	9	63
Other than waste and scrap and unwrought powders	1,740	10	349	1,230
<b>Total, all grades</b>	<b>11,600</b>	<b>1,000</b>	<b>1,450</b>	<b>8,160</b>

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>May include revised data that are not broken out by specific month(s).

<sup>3</sup>Ferrochromium containing not more than 3% carbon.

<sup>4</sup>Ferrochromium containing more than 3% carbon but not more than 4% carbon.

<sup>5</sup>Ferrochromium containing more than 4% carbon.

Source: U.S. Census Bureau.

TABLE 6  
U.S. IMPORTS FOR CONSUMPTION OF FERROCHROMIUM IN 2021, BY GRADE AND COUNTRY OR LOCALITY<sup>1</sup>

Grade and country or locality	August			January–August <sup>2</sup>		
	Gross weight (metric tons)	Chromium content (metric tons)	Value <sup>3</sup> (thousands)	Gross weight (metric tons)	Chromium content (metric tons)	Value <sup>3</sup> (thousands)
<b>High-carbon ferrochromium:<sup>4</sup></b>						
Albania	309	209	\$530	3,470	2,440	\$4,610
Brazil	250	143	262	250	143	262
Finland	--	--	--	19,500	10,300	19,100
Germany	--	--	--	9	6	18
India	--	--	--	1,320	811	1,160
Kazakhstan	4,940	3,410	9,510	40,400	28,000	66,800
Russia	10,500	7,230	16,400	11,300	7,760	17,300
South Africa	15,800	7,750	19,100	131,000	63,800	134,000
Sweden	295	199	430	11,100	7,400	16,200
Turkey	--	--	--	3,810	2,510	5,520
Zimbabwe	--	--	--	10,500	5,870	8,310
Total	32,100	18,900	46,200	232,000	129,000	274,000
<b>Medium-carbon ferrochromium:<sup>5</sup></b>						
China	--	--	--	5	3	2
Russia	--	--	--	77	41	63
South Africa	--	--	--	6,500	3,310	5,340
Total	--	--	--	6,580	3,360	5,410
<b>Low-carbon ferrochromium:<sup>6</sup></b>						
<b>More than 0.5% but not more than 3% carbon</b>						
Brazil	--	--	--	318	197	436
Kazakhstan	166	117	583	1,310	924	3,940
Total	166	117	583	1,620	1,120	4,370
<b>Not more than 0.5% carbon:</b>						
Belgium	--	--	--	368	287	1,160
Brazil	--	--	--	897	562	1,360
China	--	--	--	25	15	78
Germany	300	225	945	5,110	3,950	16,400
Japan	40	28	141	897	632	3,200
Kazakhstan	1,860	1,350	6,760	9,990	7,220	32,100
Russia	5	4	20	14,200	9,600	38,900
Turkey	25	17	79	1,190	821	2,680
United Kingdom	--	--	--	2	1	16
Total	2,230	1,630	7,940	32,700	23,100	95,900
<b>All grades:</b>						
Albania	309	209	530	3,470	2,440	4,610
Belgium	--	--	--	368	287	1,160
Brazil	250	143	262	1,460	902	2,060
China	--	--	--	30	18	80
Finland	--	--	--	19,500	10,300	19,100
Germany	300	225	945	5,120	3,960	16,400
India	--	--	--	1,320	811	1,160
Japan	40	28	141	897	632	3,200
Kazakhstan	6,970	4,880	16,900	51,700	36,100	103,000
Russia	10,500	7,230	16,400	25,600	17,400	56,300
South Africa	15,800	7,750	19,100	137,000	67,100	140,000
Sweden	295	199	430	11,100	7,400	16,200
Turkey	25	17	79	5,000	3,330	8,200
United Kingdom	--	--	--	2	1	16
Zimbabwe	--	--	--	10,500	5,870	8,310
Total	34,500	20,700	54,700	273,000	157,000	379,000

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>May include revised data that are not broken out by specific month(s).

<sup>3</sup>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.

<sup>4</sup>Ferrochromium containing more than 4% carbon.

<sup>5</sup>Ferrochromium containing more than 3% carbon but not more than 4% carbon.

<sup>6</sup>Ferrochromium containing not more than 3% carbon.

Source: U.S. Census Bureau.



TABLE 7  
U.S. IMPORTS FOR CONSUMPTION OF CHROMIUM METAL IN 2021,  
BY GRADE AND BY COUNTRY OR LOCALITY<sup>1</sup>

Grade and country or locality	August		January–August <sup>2</sup>	
	Gross weight (metric tons)	Value <sup>3</sup> (thousands)	Gross weight (metric tons)	Value <sup>3</sup> (thousands)
<b>Unwrought powders:</b>				
Belgium	--	--	3	\$88
China	112	\$996	754	6,130
France	248	2,670	1,540	12,200
Germany	76	429	512	2,890
India	--	--	98	850
Japan	--	--	1	42
Korea, Republic of	--	--	1	22
Netherlands	48	346	48	346
Russia	495	3,720	2,610	17,000
Spain	14	66	60	288
United Kingdom	98	1,270	1,240	11,700
Total	1,090	9,500	6,870	51,500
<b>Waste and scrap:</b>				
Canada	--	--	18	67
Dominican Republic	1	5	1	5
Germany	--	--	1	10
Japan	--	--	5	35
Liechtenstein	--	--	1	6
Taiwan	--	--	1	15
United Kingdom	8	54	35	212
Total	9	59	63	350
<b>Other than waste and scrap and unwrought powders:</b>				
Canada	--	--	(4)	7
China	1	54	13	503
Estonia	2	71	2	71
Germany	1	48	13	682
Italy	--	--	2	40
Japan	--	--	4	197
Liechtenstein	(4)	2	(4)	21
Malaysia	(4)	7	(4)	23
Netherlands	--	--	(4)	7
Russia	316	2,240	1,030	6,680
South Africa	13	118	26	217
Spain	--	--	93	446
Taiwan	--	--	(4)	49
United Kingdom	15	193	50	630
Total	349	2,730	1,230	9,570
<b>All grades:</b>				
Belgium	--	--	3	88
Canada	--	--	18	74
China	113	1,050	768	6,640
Dominican Republic	1	5	1	5
Estonia	2	71	2	71
France	248	2,670	1,540	12,200
Germany	77	477	526	3,580
India	--	--	98	850
Italy	--	--	2	40
Japan	--	--	10	274
Korea, Republic of	--	--	1	22
Liechtenstein	(4)	2	2	27
Malaysia	(4)	7	(4)	23
Netherlands	48	346	48	353
Russia	811	5,960	3,640	23,600
South Africa	13	118	26	217
Spain	14	66	153	734
Taiwan	--	--	1	63
United Kingdom	121	1,520	1,320	12,500
Total	1,450	12,300	8,160	61,400

-- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>May include revised data that are not broken out by specific month(s).

<sup>3</sup>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.

<sup>4</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 8  
U.S. STAINLESS STEEL TRADE, BY PRODUCT, IN 2021<sup>1</sup>

Stainless steel product	August		January–August <sup>2</sup>	
	Gross weight (metric tons)	Value <sup>3</sup> (thousands)	Gross weight (metric tons)	Value <sup>3</sup> (thousands)
<b>Exports:</b>				
Ingot	928	\$5,630	11,500	\$60,500
Flat-rolled (width > 600 mm)	15,800	57,400	143,000	454,000
Flat-rolled (width < 600 mm)	4,720	27,200	38,800	228,000
Bars and rods in irregular coils	168	884	1,450	7,380
Other bars and rods	2,170	23,700	16,900	177,000
Wire	731	13,900	6,090	83,600
Tubes, pipes, hollow profiles	3,340	28,300	25,100	232,000
Total	27,900	157,000	243,000	1,240,000
Stainless steel scrap	53,500	37,100	208,000	204,000
Grand total	81,400	194,000	450,000	1,450,000
<b>Imports:</b>				
Ingot	67,200	36,200	290,000	429,000
Flat-rolled (width > 600 mm)	33,300	97,300	198,000	527,000
Flat-rolled (width < 600 mm)	5,760	20,700	38,500	132,000
Bars and rods in irregular coils	5,310	18,400	24,700	88,700
Other bars and rods	11,400	48,300	80,900	326,000
Wire	4,380	19,000	28,000	118,000
Tubes, pipes, hollow profiles	11,900	76,500	69,200	413,000
Total	139,000	316,000	730,000	2,030,000
Stainless steel scrap	23,800	34,400	189,000	251,000
Grand total	163,000	351,000	919,000	2,290,000

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>May include revised data that are not broken out by specific month(s).

<sup>3</sup>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.