

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: <https://www.usgs.gov/centers/nmic>

CHROMIUM IN FEBRUARY 2020

Reported consumption of chromium, on a gross weight basis, in February 2020 was essentially unchanged compared with reported consumption of chromium in January 2020, and increased by 13% compared with reported consumption in February 2019. High-carbon ferrochromium accounted for 87% of the chromium material consumed in February 2020. Stainless and heat-resisting steels were the leading end uses, consuming 90% of chromium materials. Consumer stocks were essentially unchanged compared with those of the previous month and increased by 45% compared with those of February 2019 (tables 1, 2).

Stainless steel production decreased by 6% in February 2020 compared with production in January 2020, and

decreased by 12% compared with production in February 2019 (table 1). Government stockpile inventories for chromium metal have remained essentially unchanged since February 2018. Government stockpile inventories of ferroalloys decreased slightly compared with January 2020 and decreased by 9% compared with those of February 2019 (table 3).

Imports of chromite ore, chromium ferroalloys, chromium metal, and stainless steel commonly fluctuate from month to month (table 1). In February 2020, imports of all grades of chromium ferroalloys were more than double the imports of chromium ferroalloys in January 2020 and in February 2019. However, the increase was primarily the result of high-carbon

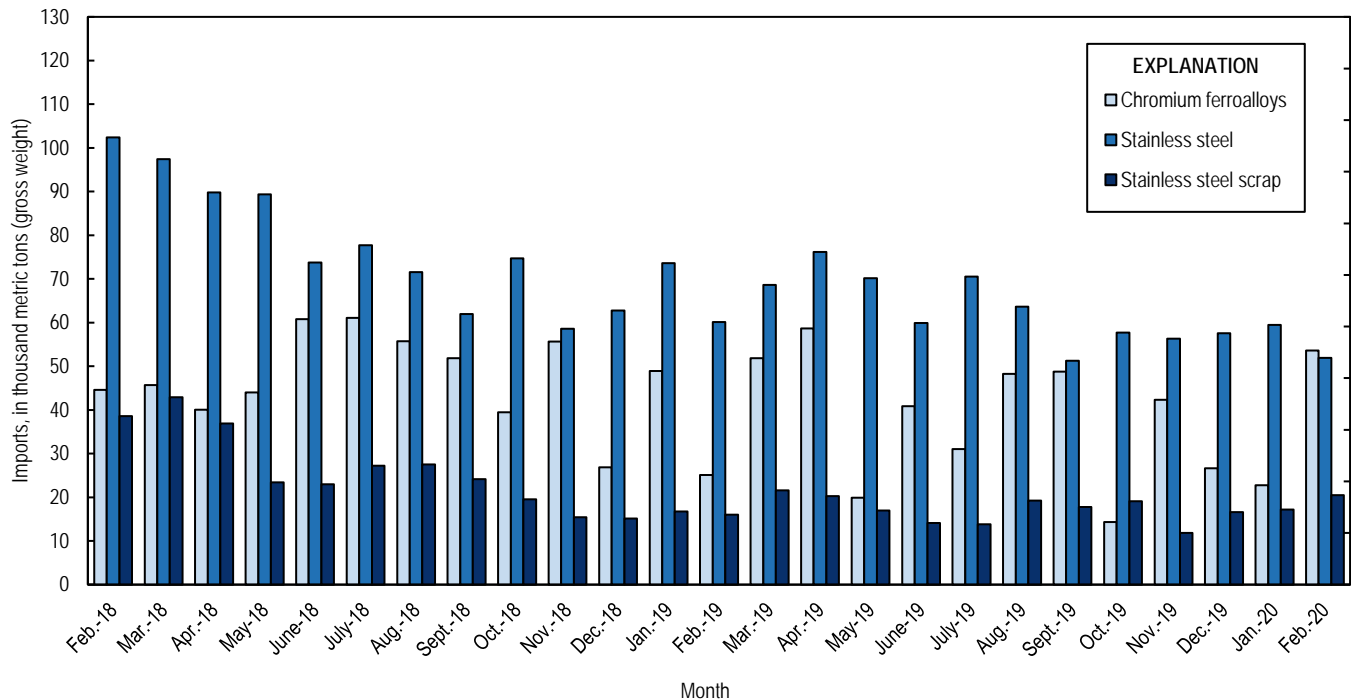


Figure 1. Chromium ferroalloys and stainless steel imports from February 2018 through February 2020. Source: U.S. Census Bureau.

ferrochromium imports. Stainless steel imports in February 2020 decreased by 13% compared with imports in January 2020 and decreased by 14% compared with those in February 2019 (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 were essentially unchanged in February 2020 compared with exports in January 2020 and increased by 37% compared with exports in February 2019. Stainless steel exports in February 2020 decreased by 11% compared with exports in January 2020 (table 1) and decreased by 25% compared with those of February 2019.

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

The U.S. chromium metal (99% Cr) average price was \$3.213 per pound in February 2020, essentially unchanged from the average price in January 2020, and a 34% decrease compared with the average price in February 2019 (CRU Group, 2020b). The U.S. high-carbon FeCr (62%–70% chromium) average price was 85.750 cents per pound of contained chromium in February 2020, slightly more the average price in January 2020, and a 24% decrease from the average price in February 2019 (fig. 2) (CRU Group, 2020b).

Industry News

The effects of the coronavirus epidemic (COVID-19) prompted Zhangjiagang Pohang Stainless Steel Co., Ltd. (China) to halt its stainless steel production in Jiangsu Province for 1 week in late February (CRU Group, 2020a; Zhang and Daly, 2020). The company's total production capacity was 100,000 metric tons per month. As a result, the expected monthly production was estimated to be reduced by 21,000 metric tons (Zhang and Daly, 2020).

References Cited

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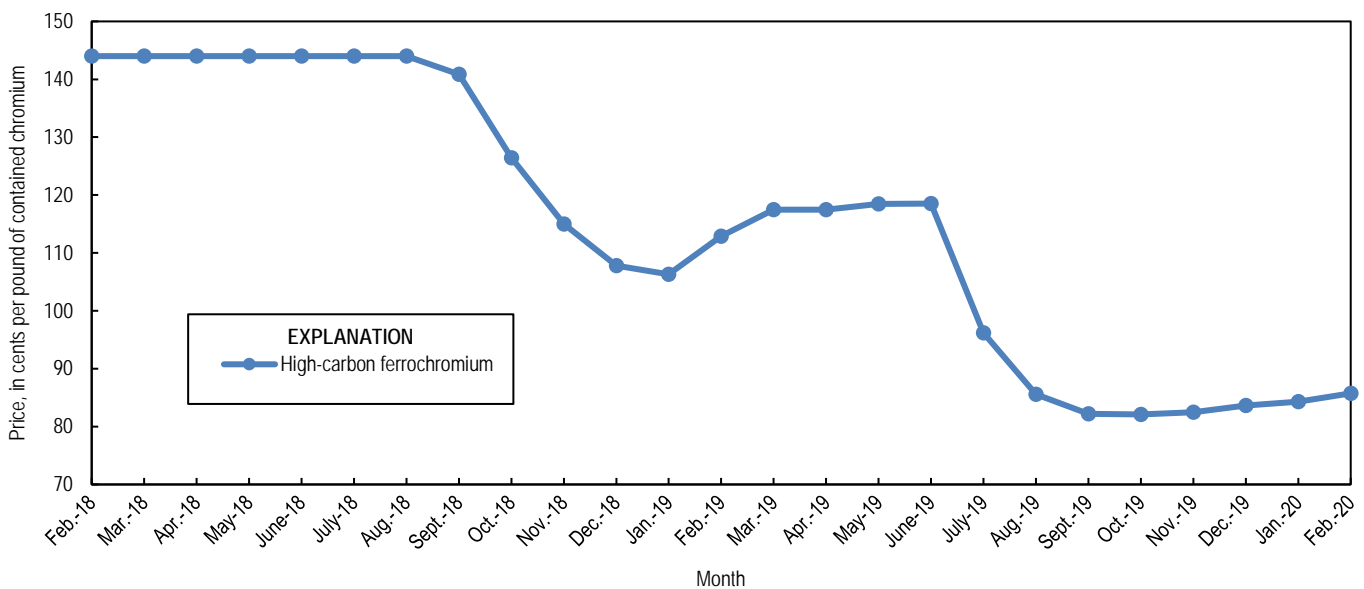


Figure 2. Average monthly prices for U.S. high-carbon ferrochromium from February 2018 through February 2020. Source: CRU Group.

TABLE 1
U.S. SALIENT CHROMIUM STATISTICS¹

(Metric tons)

	2019		2020		
	December	January– December ^{p,2}	January	February	January– February ²
Production, stainless steel ³	183,000	2,590,000	221,000	207,000	428,000
Components of U.S. supply:					
Stainless steel scrap receipts	67,400	810,000	70,000 ^e	80,000 ^e	150,000 ^e
Stainless steel scrap consumption	103,000	1,240,000	105,000 ^e	110,000 ^e	215,000 ^e
Imports for consumption:					
Chromite ore	37,200	152,000	1,920	8,540	10,500
Ferrochromium:					
More than 4% carbon	20,100	393,000	13,200	50,200	63,400
More than 3% but not more than 4% carbon	900	1,210	--	--	--
More than 0.5% but not more than 3% carbon	259	2,090	668	628	1,300
Not more than 0.5% carbon	4,110	42,900	5,420	2,790	8,200
Ferrochromium silicon	1,350	17,600	3,500	--	3,500
Total ferroalloy imports	26,700	457,000	22,800	53,600	76,400
Chromium metal ⁴	1,510	14,400	1,540	1,090	2,630
Stainless steel	57,500	766,000	59,500	51,900	111,000
Stainless steel scrap	16,600	204,000	17,200	20,500	37,600
Distribution of U.S. supply:					
Consumption, industry, chromium ferroalloys and metal	36,100	424,000	34,600	34,500	69,100
Exports:					
Chromite ore	120	2,300	147	176	323
Chromium ferroalloys:					
High-carbon ferrochromium	82	1,170	64	22	86
Low-carbon ferrochromium	1	437	2	44	46
Ferrochromium silicon	--	22	--	--	--
Total ferroalloy exports	83	1,630	66	66	132
Chromium metal	31	430	37	24	61
Stainless steel	22,900	434,000	33,400	29,600	63,000
Stainless steel scrap	74,500	474,000	35,200	49,900	85,100
Stocks at end of period:					
Consumer, industry, chromium ferroalloys and metal	15,000	15,000	15,300	15,300	15,300
Government stockpile:					
Chromium ferroalloys	66,100	66,100	65,200	64,500	64,500
Chromium metal	3,850	3,850	3,850	3,850	3,850

^eEstimated. ^pPreliminary. ^rRevised. -- 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)

	2020		
	January	February	January– February ³
Consumption by end use:			
Steel:			
Carbon steel	W	W	W
High-strength low-alloy steel	146	146	292
Stainless and heat-resisting steel	30,900	30,900	61,800
Unspecified steel ⁴	2,720	2,720	5,430
Superalloys	427	424	851
Other alloys and uses ⁵	W	W	W
Total	34,600	34,500	69,100
Total, chromium content	19,700	19,700	39,500
Consumption by material:			
Low-carbon ferrochromium	2,080	2,070	4,140
High-carbon ferrochromium	29,900	29,900	59,900
Ferrochromium silicon	W	W	W
Chromium metal	162	162	325
Chromite ore	132	113	245
Chromium-aluminum alloy	W	W	W
Other chromium materials	W	W	W
Total	34,600	34,500	69,100
Total, chromium content	19,700	19,700	39,500
Consumer stocks:			
Low-carbon ferrochromium	1,580	1,600	1,600
High-carbon ferrochromium	8,720	8,720	8,720
Ferrochromium silicon	773	773	773
Chromium metal	44	44	44
Chromium-aluminum alloy	50	40	40
Other chromium materials	4,100	4,110	4,110
Total	15,300	15,300	15,300
Total, chromium content	8,280	8,530	8,530

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	
2019:			
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
December	38,700	27,400	3,850
2020:			
January	37,800	27,400	3,850
February	37,100	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)
2019:							
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
December	120	86	83	50	107	31	718
January–December ⁴	2,300	1,940	1,630	864	2,690	430	13,100
2020:							
January	147	82	66	36	91	37	733
February	176	104	66	40	118	24	658
January–February ⁴	323	186	132	76	209	61	1,390

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)

	2019	2020		
	January– December ²	January	February	January– February ²
Chromite ore:				
Not more than 40% chromic oxide:				
Gross weight	973	557	--	557
Chromic oxide content	360	86	--	86
More than 40% but less than 46% chromic oxide:				
Gross weight	4,170	770	457	1,230
Chromic oxide content	1,810	333	196	529
46% or more chromic oxide:				
Gross weight	147,000	593	8,080	8,680
Chromic oxide content	90,400	355	5,020	5,380
Total, all grades:				
Gross weight	152,000	1,920	8,540	10,500
Chromic oxide content	92,500	774	5,220	5,990
Ferrochromium:				
Low-carbon: ³				
Not more than 0.5% carbon:				
Gross weight	42,900	5,420	2,790	8,200
Chromium content	29,900	3,570	1,930	5,500
More than 0.5% but not more than 3% carbon:				
Gross weight	2,090	668	628	1,300
Chromium content	1,330	442	417	859
Total, low-carbon:				
Gross weight	45,000	6,080	3,410	9,500
Chromium content	31,300	4,010	2,350	6,360
Medium-carbon: ⁴				
Gross weight	1,210	--	--	--
Chromium content	802	--	--	--
High-carbon: ⁵				
Gross weight	393,000	13,200	50,200	63,400
Chromium content	215,000	8,440	26,400	34,800
Total, all grades:				
Gross weight	439,000	19,300	53,600	72,900
Chromium content	247,000	12,400	28,700	41,200
Chromium metal:				
Unwrought powders	11,500	1,200	897	2,090
Waste and scrap	221	11	11	22
Other than waste and scrap and unwrought powders	2,680	337	181	518
Total, all grades	14,400	1,540	1,090	2,630

-- 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 2020, BY GRADE AND COUNTRY OR LOCALITY¹

Grade and country	February			January–February 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	268	181	\$278	416	273	\$440
India	--	--	--	1,420	848	1,120
Kazakhstan	5,050	3,500	5,790	13,300	9,200	14,500
Russia	--	--	--	3,000	1,540	2,290
South Africa	36,800	18,000	29,500	36,800	18,000	29,500
Turkey	--	--	--	392	258	415
Zimbabwe	8,110	4,660	5,150	8,110	4,660	5,150
Total	50,200	26,400	40,700	63,400	34,800	53,400
Low-carbon ferrochromium:⁵						
More than 0.5% but not more than 3% carbon						
Brazil	292	180	475	670	415	1,100
Kazakhstan	216	152	558	506	358	1,290
Russia	120	85	284	120	85	284
Total	628	417	1,320	1,300	859	2,680
Not more than 0.5% carbon:						
Belgium	311	201	937	650	437	2,070
Brazil	--	--	--	371	231	611
China	--	--	--	5	3	14
Germany	284	195	836	284	195	836
India	100	64	199	200	130	405
Japan	--	--	--	100	72	385
Kazakhstan	1,460	1,040	3,800	1,460	1,040	3,800
Russia	610	415	1,340	5,090	3,360	10,400
Turkey	20	14	54	40	29	120
Total	2,790	1,930	7,160	8,200	5,500	18,600
All grades:						
Albania	268	181	278	416	273	440
Belgium	311	201	937	650	437	2,070
Brazil	292	180	475	1,040	647	1,710
China	--	--	--	5	3	14
Germany	284	195	836	284	195	836
India	100	64	199	1,620	978	1,530
Japan	--	--	--	100	72	385
Kazakhstan	6,730	4,690	10,100	15,200	10,600	19,600
Russia	730	500	1,620	8,210	4,980	13,000
South Africa	36,800	18,000	29,500	36,800	18,000	29,500
Turkey	20	14	54	431	287	535
Zimbabwe	8,110	4,660	5,150	8,110	4,660	5,150
Total	53,600	28,700	49,200	72,900	41,200	74,700

-- 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 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 COUNTRY¹

Grade and country	February		January–February ²	
	Gross weight (metric tons)	Value ³ (thousands)	Gross weight (metric tons)	Value ³ (thousands)
Unwrought powders:				
China	146	\$1,270	283	\$2,630
Estonia	--	--	10	75
France	160	1,370	362	3,220
Germany	8	45	74	478
India	19	172	38	343
Russia	265	1,710	777	4,820
Spain	23	119	46	238
Switzerland	20	149	20	149
United Kingdom	255	2,840	483	5,300
Total	897	7,680	2,090	17,300
Waste and scrap:				
Canada	6	10	11	26
Japan	5	23	6	42
United Kingdom	--	--	5	33
Total	11	33	22	101
Other than waste and scrap and unwrought powders:				
China	(4)	19	20	162
Germany	19	23	20	77
Japan	--	--	1	50
Malaysia	--	--	(4)	4
Russia	132	787	408	1,860
United Kingdom	30	355	70	601
Total	181	1,180	518	2,750
All grades:				
Canada	6	10	11	26
China	146	1,290	303	2,790
Estonia	--	--	10	75
France	160	1,370	362	3,220
Germany	27	68	93	555
India	19	172	38	343
Japan	5	23	6	91
Malaysia	--	--	(4)	4
Russia	397	2,500	1,180	6,680
Spain	23	119	46	238
Switzerland	20	149	20	149
United Kingdom	285	3,190	558	5,930
Total	1,090	8,890	2,630	20,100

-- 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 2020¹

Stainless steel product	February		January–February ²	
	Gross weight (metric tons)	Value ³ (thousands)	Gross weight (metric tons)	Value ³ (thousands)
Exports:				
Ingot	1,180	\$6,540	2,500	\$15,200
Flat-rolled (width > 600 mm)	17,100	46,900	37,200	103,000
Flat-rolled (width < 600 mm)	5,230	27,700	11,100	55,600
Bars and rods in irregular coils	98	743	525	2,830
Other bars and rods	2,760	30,500	5,330	58,700
Wire	591	8,040	1,260	18,000
Tubes, pipes, hollow profiles	2,630	28,100	5,060	58,300
Total	29,600	149,000	63,000	311,000
Stainless steel scrap	49,900	25,700	85,100	50,700
Grand total	79,500	174,000	148,000	362,000
Imports:				
Ingot	9,100	34,100	15,100	79,100
Flat-rolled (width > 600 mm)	18,100	44,900	42,600	102,000
Flat-rolled (width < 600 mm)	4,250	15,100	8,240	31,900
Bars and rods in irregular coils	1,760	6,060	4,890	17,700
Other bars and rods	7,590	30,500	15,800	64,000
Wire	2,420	10,300	6,130	28,800
Tubes, pipes, hollow profiles	8,650	68,900	18,600	135,000
Total	51,900	210,000	111,000	458,000
Stainless steel scrap	20,500	19,200	37,600	33,100
Grand total	72,400	229,000	149,000	491,000

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 charges incurred in bringing the merchandise into the United States.

Source: U.S. Census Bureau.