Mineral Industry Surveys

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CHROMIUM IN MAY 2023

Estimated stainless steel production increased by 3% in May 2023 compared with reported production in April 2023 and decreased by 3% compared with reported production in May 2022 (table 1). The Defense Logistics Agency Strategic Materials office announced the sale of approximately 907 metric tons (t) of high-carbon and low-carbon ferrochromium from the government stockpile and 157 t of chromium metal[1] (Defense Logistics Agency, 2023).

In May 2023, the leading import sources for ferrochromium into the United States were, in descending order of quantity by gross weight, South Africa, Zimbabwe, and Kazakhstan (table 4), whereas the leading import sources for chromium metal were China, the United Kingdom, and France (table 5).

Imports of chromite ore, chromium ferroalloys, stainless steel, and stainless-steel scrap commonly fluctuate from month to month (fig. 1, table 1). Imports of chromite ore decreased by 93% in May 2023 compared with imports in April 2023 and increased more than four times imports in May 2022. Imports of all grades of chromium ferroalloys, including ferrochromium silicon, increased by 95% compared with imports in April 2023 and increased more than eight times imports in May 2022. There were no imports of medium-carbon ferrochromium in May or April 2023 (table 3). Stainless steel imports in May 2023 decreased by 12% compared with imports in April 2023 and by 27% compared with imports in May 2022. Stainless steel scrap imports in

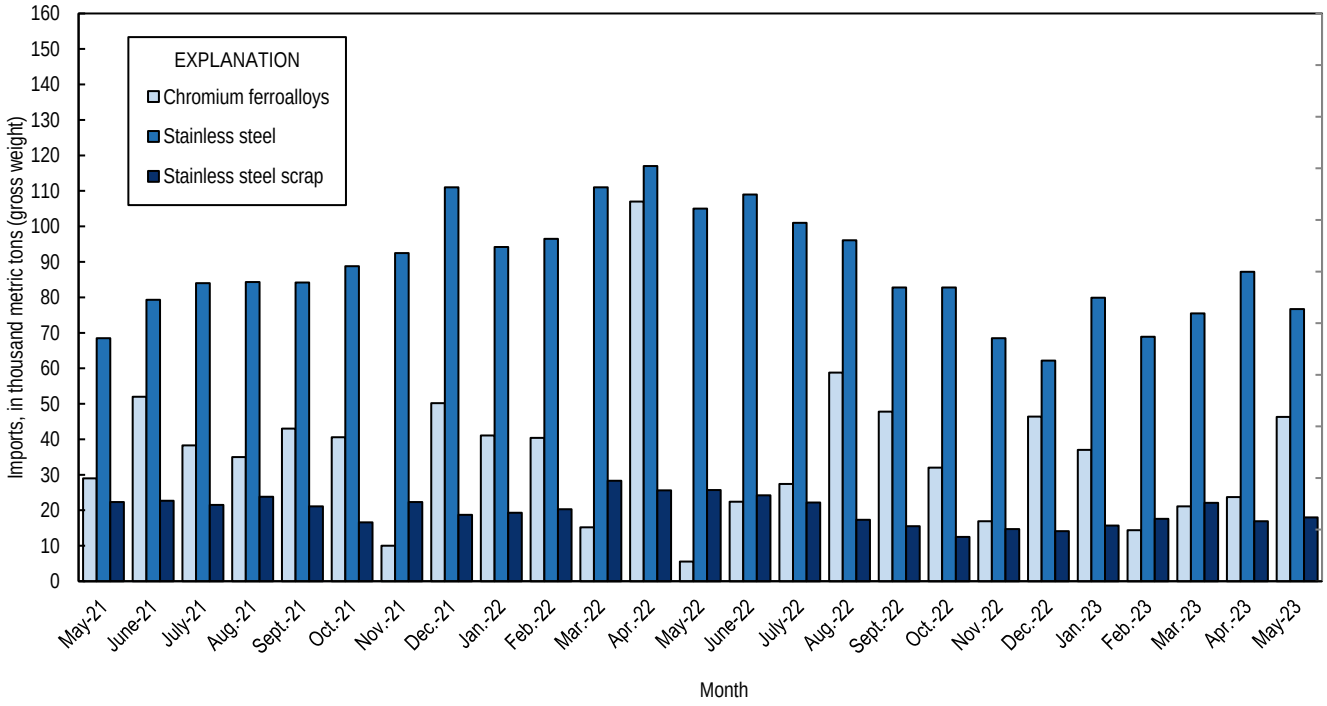

Figure 1. Chromium ferroalloys, stainless steel, and stainless steel scrap imports from May 2021 through May 2023. Source: U.S. Census Bureau.

[1] U.S. Government National Defense Stockpile inventory statistics are no longer available.

May 2023 were 6% more than imports in April 2023 and 30% less than those in May 2022 (table 1).

The U.S. chromium metal (99% chromium) average price was $5.53 per pound in May 2023, essentially unchanged from the average price in April 2023 and 37% less than the average price in May 2022. The U.S. high-carbon ferrochromium (62%–70% chromium) average price was 287.22 cents per pound of contained chromium in May 2023, 3% less than the average price in April 2023 and 28% less than the average price in May 2022 (fig. 2). Prices decreases were attributed to a decline in stainless steel demand (CRU Group, 2023a, 2023b).

Industry News

Vedanta Resources Ltd. (United Kingdom) announced plans to more than triple its ferrochromium capacity in Odisha, India, by 2025. Capacity would increase from 140,000 metric tons per year (t/yr) to 450,000 t/yr. The increase in capacity would be completed in two phases. During the first phase, Vedanta would build two new ferrochromium plants, one with a capacity of 60,000 t/yr and the other with 150,000 t/yr. In addition, Vedanta would increase its chromite ore capacity at its Ostapal Mine, ensuring availability of raw material for its ferrochromium plants. During the second phase, Vedanta would build an additional ferrochromium plant with a capacity of 150,000 t/yr capacity and increase chromite ore production at its Kalarangiatta Mine (Surendran, 2023).

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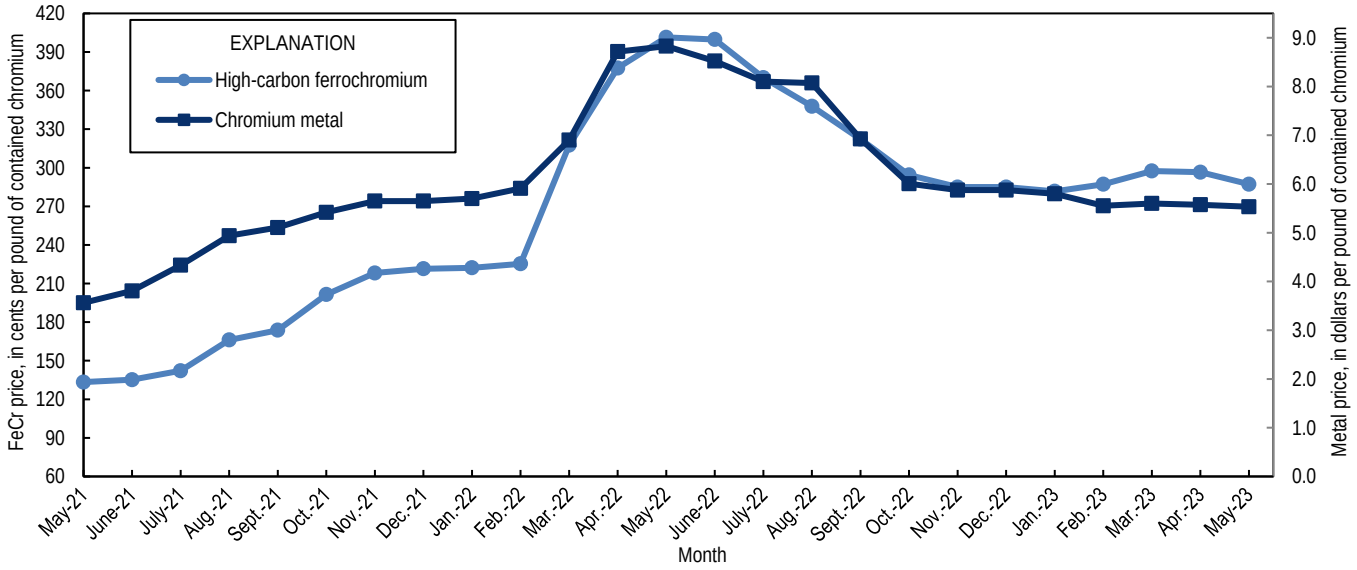

Figure 2. Average monthly prices for U.S. high-carbon ferrochromium (FeCr) and chromium metal from May 2021 through May 2023. Source: CRU Group.

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

(Metric tons, gross weight)

	2022	2023			
	January–December	March	April	May	January–May
Production, stainless steel[2]	2,020,000	166,000	151,000 r	156,000 e	785,000 e
Components of U.S. supply:					
Stainless steel scrap receipts[e]	537,000	40,000	36,600 r	41,000	193,000
Stainless steel scrap consumption[e]	806,000	59,400	54,200 r	61,000	286,000
Imports for consumption:					
Chromite ore	121,000	6,830	48,400	3,150	61,700
Ferrochromium:					
More than 4% carbon	399,000	18,700	19,300	41,200	127,000
More than 3% but not more than 4% carbon	36	20	--	--	20
More than 0.5% but not more than 3% carbon	2,250	150	573	243	1,280
Not more than 0.5% carbon	42,100	2,230	3,460	3,950	13,300
Ferrochromium silicon	17,100	--	433	921	1,350
Total ferroalloy imports	461,000	21,100	23,700	46,300	142,000
Chromium metal[3]	14,900	742	1,230	760	4,990
Stainless steel	1,130,000	75,500	87,200	76,700	388,000
Stainless steel scrap	240,000	22,100	16,900	18,000	90,300
Exports:					
Chromite ore	2,220	129	203	255	869
Chromium ferroalloys:					
High-carbon ferrochromium	3,640	486	195	926	2,940
Low-carbon ferrochromium	637	20	84	63	256
Ferrochromium silicon	40	--	--	--	19
Total ferroalloy exports	4,310	505	279	989	3,210
Chromium metal	567	26	16	49	154
Stainless steel	350,000	31,800	27,900	32,300	152,000
Stainless steel scrap	403,000	26,800	29,600	111,000	240,000

[e]Estimated. [r]Revised. -- Zero.

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

[2]Source: American Iron and Steel Institute.

[3]Includes waste and scrap and other.

TABLE 2
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)
2022:							
May	106	$83	387	208	$390	68	$1,410
June	161	110	712	425	783	34	899
July	212	97	316	190	344	25	803
August	194	128	163	47	164	32	937
September	346	194	823	494	729	73	1,620
October	180	157	5	3	11	17	528
November	64	54	36	22	32	22	730
December	180	151	896	432	841	83	1,530
January–December[4]	2,220	1,640	4,310	2,170	4,420	567	12,800
2023:							
January	124	110	1,020	398	1,130	43	1,120
February	158	145	418	141	446	20	675
March	129	121	505	117	455	26	846
April	203	173	279	64	311	16	488
May	255	223	989	373	896	49	1,830
January–May[4]	869	771	3,210	1,090	3,240	154	4,960

[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 3
U.S. IMPORTS FOR CONSUMPTION OF CHROMITE ORE, FERROCHROMIUM, AND CHROMIUM METAL[1]

(Metric tons)

	2022	2023		
	January–December	April	May	January–May[2]
Chromite ore:				
Not more than 40% chromic oxide:				
Gross weight	5,750	236	558	2,350
Chromic oxide content	1,750	91	110	592
More than 40% but less than 46% chromic oxide:				
Gross weight	17,100	2,480	2,530	9,740
Chromic oxide content	7,400	1,100	1,090	4,260
46% or more chromic oxide:				
Gross weight	98,200	45,700	65	49,600
Chromic oxide content	83,300	41,600	43	43,400
Total, all grades:				
Gross weight	121,000	48,400	3,150	61,700
Chromic oxide content	92,500	42,800	1,240	48,300
Ferrochromium:				
Low-carbon:[3]				
Not more than 0.5% carbon:				
Gross weight	42,100	3,460	3,950	13,300
Chromium content	29,500	2,270	2,800	9,130
More than 0.5% but not more than 3% carbon:				
Gross weight	2,250	573	243	1,280
Chromium content	1,520	391	169	867
Total, low-carbon:				
Gross weight	44,300	4,030	4,190	14,600
Chromium content	31,000	2,660	2,970	10,000
Medium-carbon:[4]				
Gross weight	36	--	--	20
Chromium content	25	--	--	14
High-carbon:[5]				
Gross weight	399,000	19,300	41,200	127,000
Chromium content	224,000	12,000	23,000	69,400
Total, all grades:				
Gross weight	444,000	23,300	45,400	141,000
Chromium content	256,000	14,700	26,000	79,400
Chromium metal:				
Unwrought powders	13,500	1,160	637	4,390
Waste and scrap	519	26	52	161
Other than waste and scrap and unwrought powders	927	41	71	447
Total, all grades	14,900	1,230	760	4,990

-- 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 4

U.S. IMPORTS FOR CONSUMPTION OF FERROCHROMIUM IN 2023, BY GRADE AND COUNTRY OR LOCALITY[1]

Grade and country or locality	May			January–May[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	--	--	--	561	373	$1,510
China	--	--	--	27	19	81
Finland	5,000	2,630	$6,600	5,000	2,630	6,600
India	783	494	1,510	4,540	2,890	7,660
Kazakhstan	8,480	5,810	33,600	23,200	15,900	94,000
Oman	--	--	--	27	16	65
South Africa	13,800	6,690	16,700	68,400	33,500	76,000
Sweden	365	244	1,340	2,560	1,710	8,970
Switzerland	--	--	--	245	164	836
Zimbabwe	12,800	7,170	18,200	21,900	12,200	30,100
Total	41,200	23,000	77,900	127,000	69,400	226,000
Medium-carbon ferrochromium, India[5]	--	--	--	20	14	107
Low-carbon ferrochromium:[6]						
More than 0.5% but not more than 3% carbon:						
Brazil	--	--	--	400	251	1,350
China	--	--	--	25	16	105
Kazakhstan	243	169	1,610	856	599	5,860
Total	243	169	1,610	1,280	867	7,310
Not more than 0.5% carbon:						
Brazil	27	20	30	651	397	1,400
China	50	37	209	170	121	687
Germany	1,320	914	7,390	5,490	3,770	30,500
India	150	127	586	1,530	986	6,430
Japan	162	114	1,450	982	669	8,420
Kazakhstan	2,110	1,500	13,900	3,910	2,780	26,500
Russia	20	15	190	80	59	555
Turkey	100	70	643	500	346	3,280
United Kingdom	--	--	--	(7)	(7)	7
Total	3,950	2,800	24,400	13,300	9,130	77,900
All grades:						
Albania	--	--	--	561	373	1,510
Brazil	27	20	30	1,050	648	2,740
China	50	37	209	222	157	874
Finland	5,000	2,630	6,600	5,000	2,630	6,600
Germany	1,320	914	7,390	5,490	3,770	30,500
India	933	621	2,100	6,100	3,890	14,200
Japan	162	114	1,450	982	669	8,420
Kazakhstan	10,800	7,490	49,000	28,000	19,300	126,000
Oman	--	--	--	27	16	65
Russia	20	15	190	80	59	555
South Africa	13,800	6,690	16,700	68,400	33,500	76,000
Sweden	365	244	1,340	2,560	1,710	8,970
Switzerland	--	--	--	245	164	836
Turkey	100	70	643	500	346	3,280
United Kingdom	--	--	--	(7)	(7)	7
Zimbabwe	12,800	7,170	18,200	21,900	12,200	30,100
Total	45,400	26,000	104,000	141,000	79,400	311,000

-- 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.

[7]Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 5
U.S. IMPORTS FOR CONSUMPTION OF CHROMIUM METAL IN 2023,
BY GRADE AND BY COUNTRY OR LOCALITY[1]

Grade and country or locality	May		January–May[2]	
	Gross weight (metric tons)	Value[3] (thousands)	Gross weight (metric tons)	Value[3] (thousands)
Unwrought powders:				
China	328	$3,610	2,240	$21,200
France	21	419	272	4,470
Germany	3	18	92	823
India	--	--	39	495
Japan	(4)	5	(4)	5
Korea, Republic of	--	--	16	253
Russia	20	218	299	3,240
United Kingdom	264	4,650	1,430	23,400
Total	637	8,920	4,390	53,800
Waste and scrap:				
Canada	9	49	46	286
China	9	305	9	305
Germany	--	--	(4)	3
Japan	14	125	25	229
Korea, Republic of	--	--	(4)	5
United Kingdom	20	158	80	659
Total	52	639	161	1,490
Other than waste and scrap and unwrought powders:				
Canada	--	--	(4)	221
China	2	131	6	455
France	57	1,020	307	5,840
Germany	2	183	9	792
Japan	--	--	3	106
Korea, Republic of	(4)	17	(4)	17
Malaysia	--	--	(4)	4
Russia	--	--	80	671
South Africa	--	--	21	199
Taiwan	--	--	(4)	24
United Kingdom	10	166	20	366
Total	71	1,520	447	8,700
All grades:				
Canada	9	49	46	506
China	338	4,050	2,250	21,900
France	79	1,440	580	10,300
Germany	5	201	101	1,620
India	--	--	39	495
Japan	14	131	29	340
Korea, Republic of	(4)	17	16	275
Malaysia	--	--	(4)	4
Russia	20	218	379	3,910
South Africa	--	--	21	199
Taiwan	--	--	(4)	24
United Kingdom	294	4,980	1,530	24,400
Total	760	11,100	4,990	64,000

-- 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 6
U.S. STAINLESS STEEL TRADE, BY PRODUCT, IN 2023[1]

Stainless steel product	May		January–May[2]	
	Gross weight (metric tons)	Value[3] (thousands)	Gross weight (metric tons)	Value[3] (thousands)
Exports:				
Ingot	764	$5,480	5,390	$36,200
Flat-rolled (width > 600 mm)	17,400	72,800	81,200	349,000
Flat-rolled (width < 600 mm)	5,740	58,000	26,700	255,000
Bars and rods in irregular coils	85	589	1,030	6,830
Other bars and rods	3,540	46,000	15,800	213,000
Wire	635	13,900	3,220	66,700
Tubes, pipes, hollow profiles	4,110	45,600	18,900	204,000
Total	32,300	242,000	152,000	1,130,000
Stainless steel scrap	111,000	40,600	240,000	187,000
Grand total	143,000	283,000	393,000	1,320,000
Imports:				
Ingot	12,800	38,500	72,600	217,000
Flat-rolled (width > 600 mm)	29,300	118,000	128,000	490,000
Flat-rolled (width < 600 mm)	4,870	24,000	24,700	122,000
Bars and rods in irregular coils	2,970	13,400	16,700	81,000
Other bars and rods	12,000	76,000	64,200	390,000
Wire	3,330	20,400	16,800	106,000
Tubes, pipes, hollow profiles	11,500	94,500	65,000	545,000
Total	76,700	385,000	388,000	1,950,000
Stainless steel scrap	18,000	21,800	90,300	108,000
Grand total	94,700	407,000	479,000	2,060,000

[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.