Mineral Industry Surveys

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CHROMIUM IN APRIL 2023

Estimated stainless steel production was essentially unchanged in April 2023 compared with reported production in March 2023 and decreased by 8% compared with reported production in April 2022 (table 1). Government stockpile inventories for chromium metal were unchanged compared with those in March 2023 but decreased by 3% compared with those in April 2022. Government stockpile inventories for high-carbon ferrochromium and low-carbon ferrochromium were both unchanged compared with those in March 2023. Inventories for high-carbon ferrochromium decreased by 22% and inventories for low-carbon ferrochromium were essentially unchanged compared with inventories in April 2022 (table 2).

In April 2023, the leading import sources for ferrochromium into the United States were, in descending order of quantity by gross weight, Kazakhstan, South Africa, and India (table 5), whereas the leading import sources for chromium metal were China, the United Kingdom, and France (table 6).

Imports of chromite ore, chromium ferroalloys, stainless steel, and stainless-steel scrap commonly fluctuate from month to month (fig. 1, table 1). In April 2023, imports of chromite ore increased more than seven times the imports in March 2023 and by 17% compared with imports in April 2022. Imports of all grades of chromium ferroalloys, including ferrochromium silicon, increased by 13% compared with imports in March 2023 but decreased by 78% compared with imports in April 2022. Stainless steel imports in April 2023 increased by 15% compared with imports in March 2023 but were 26% less than imports in April 2022. Stainless steel scrap imports in April 2023 were 23% less than imports in March

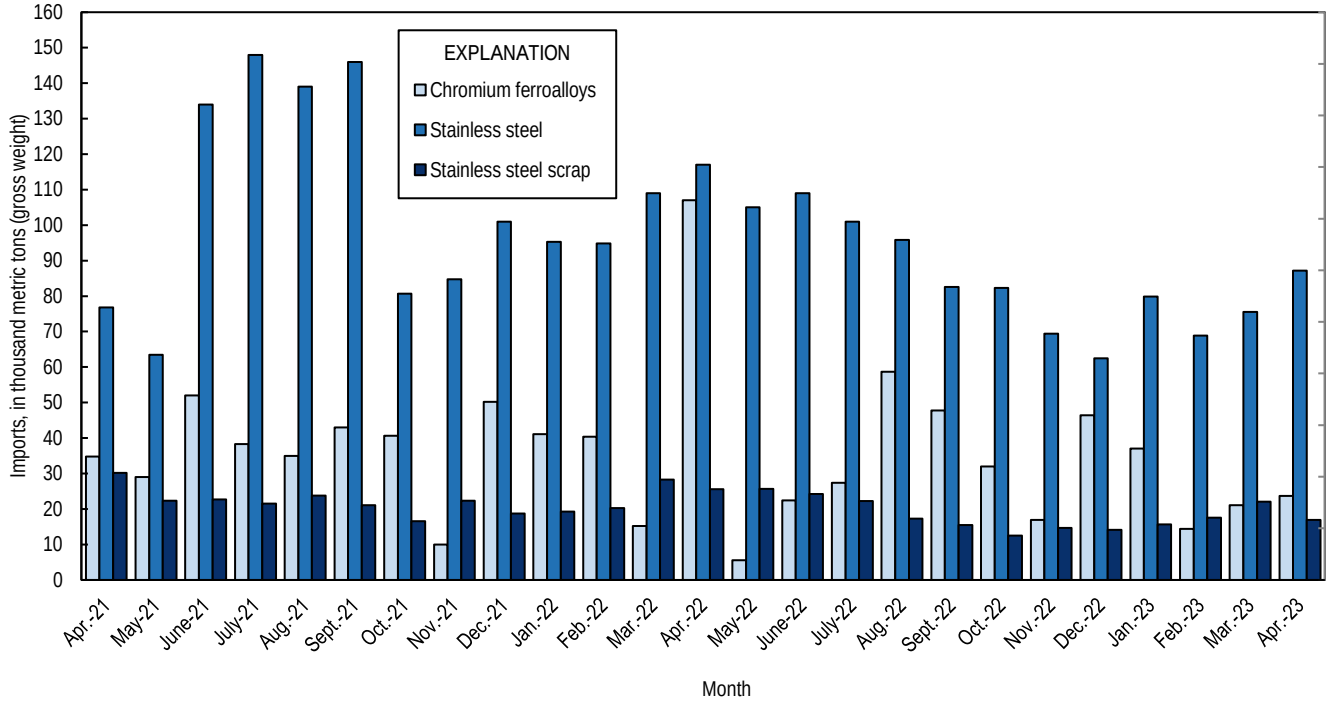

Figure 1. Chromium ferroalloys, stainless steel, and stainless steel scrap imports from April 2021 through April 2023. Source: U.S. Census Bureau.

2023 and 34% less than those in April 2022 (table 1).

The U.S. chromium metal (99% chromium) average price was $5.58 per pound in April 2023, essentially unchanged from the average price in March 2023 and 36% less than the average price in April 2022. The U.S. high-carbon ferrochromium (62%–70% chromium) average price was 296.56 cents per pound of contained chromium in April 2023, essentially unchanged from the average price in March 2023, but 21% less than the average price in April 2022 (fig. 2) (CRU Group, 2023).

Industry News

Sibanye-Stillwater Ltd. (South Africa) resumed production in the deeper levels of its Stillwater West mine in Montana following the recomissioning of a vertical shaft that was damaged in March. Production above the 50 level of the Stillwater West mine and in the Stillwater East and East Boulder mines were unaffected by the incident in March (Sibanye-Stillwater Ltd., 2023).

Zhejiang Yongjin Metal Technology Co., Ltd. (Yongjin Metal) (China) invested $125 million in a second stainless-steel plant in Vietnam. The plant would have a capacity to produce up to 260,000 metric tons of stainless steel per year. Yongjim Metal has also invested in the construction of a stainless steel plant in Thailand that would start production in the fourth quarter of 2023 (Backeberg, 2023).

Jindal Stainless Ltd. (India) completed the expansion project at its Jajpur mill in Odisha. The project increased capacity from 1.1 million metric tons per year (Mt/yr) to 2.1 Mt/yr. Jindal's merger with Jindal Stainless Hisar Ltd. brought the company's total stainless-steel production capacity up to 3 Mt/yr (SteelOrbis, 2023).

References Cited

Backeberg, Nils, 2023, Stainless steel plans expanding in Southeast Asia: Project Blue, April 16. (Accessed June 14, 2023, via https://www.projectblue.com/.)

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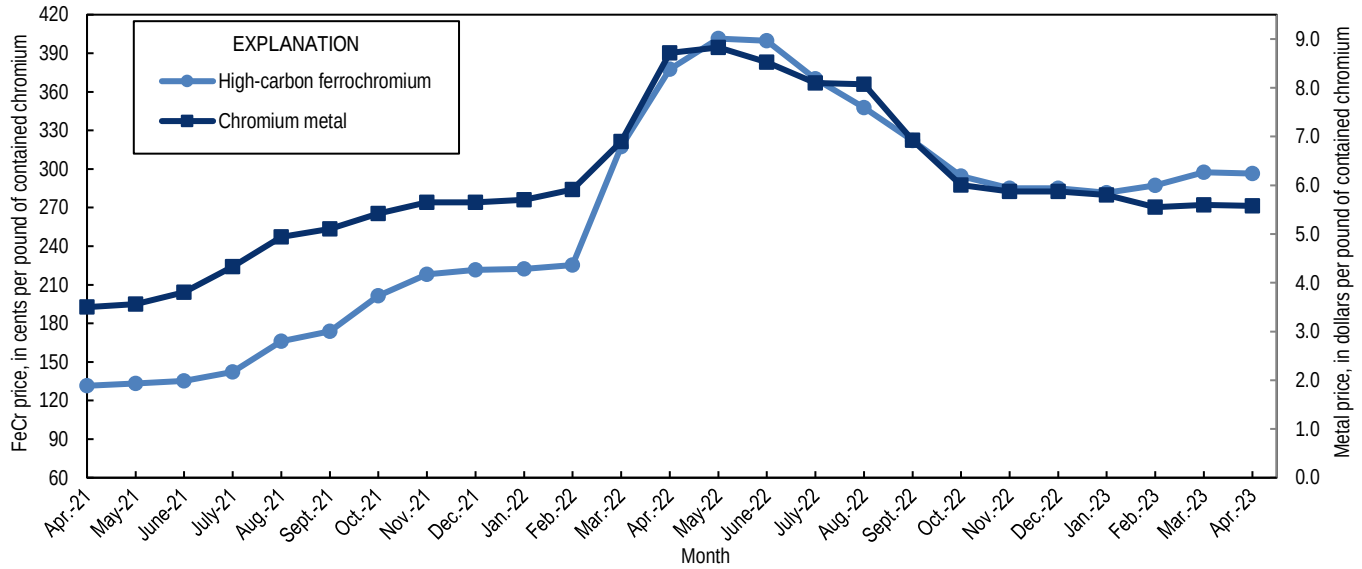

Figure 2. Average monthly prices for U.S. high-carbon ferrochromium (FeCr) and chromium metal from April 2021 through April 2023. Source: CRU Group.

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

(Metric tons, gross weight)

	2022	2023			
	January–December	February	March	April	January–April
Production, stainless steel[2]	2,020,000	149,000	166,000	168,000 [e]	645,000 [e]
Components of U.S. supply:					
Stainless steel scrap receipts[e]	537,000	36,100	40,000	41,000	156,000
Stainless steel scrap consumption[e]	806,000	53,400	59,400	60,000	231,000
Imports for consumption:					
Chromite ore	121,000	1,180	6,830	48,400	58,600
Ferrochromium:					
More than 4% carbon	399,000	12,200	18,700	19,300	85,300
More than 3% but not more than 4% carbon	36	--	20	--	20
More than 0.5% but not more than 3% carbon	2,250	290	150	573	1,040
Not more than 0.5% carbon	42,100 [r]	1,950	2,230	3,460	9,370
Ferrochromium silicon	17,100	--	--	433	433
Total ferroalloy imports	461,000 [r]	14,400	21,100	23,700	96,200
Chromium metal[3]	14,900 [r]	1,100	742	1,230	4,230
Stainless steel	1,130,000	68,900	75,500	87,200	312,000
Stainless steel scrap	240,000	17,600	22,100	16,900	72,300
Exports:					
Chromite ore	2,220	158	129	203	614
Chromium ferroalloys:					
High-carbon ferrochromium	3,640	402	486	195	2,010
Low-carbon ferrochromium	637	15	20	84	192
Ferrochromium silicon	40	--	--	--	19
Total ferroalloy exports	4,310	418	505	279	2,220
Chromium metal	567	20	26	16	105
Stainless steel	350,000	28,200	31,800	27,900	120,000
Stainless steel scrap	403,000 [r]	25,400	26,800	29,600	130,000
Government stockpile:					
Chromium ferroalloys	43,700	41,800	41,800	41,800	41,800
Chromium metal	3,450	3,420	3,400	3,400	3,400

[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. GOVERNMENT STOCKPILE INVENTORY OF
CHROMIUM MATERIALS[1]

(metric tons)

	Chromium ferroalloys		
	High-carbon ferro-chromium	Low-carbon ferro-chromium	Chromium metal
2022:			
April	19,600	26,800	3,520
May	19,200	26,800	3,520
June	18,300	26,800	3,480
July	17,400	26,800	3,480
August	17,200	26,800	3,470
September	17,200	26,600	3,470
October	17,200	26,600	3,470
November	17,200	26,600	3,450
December	17,200	26,600	3,450
2023:			
January	16,300	26,600	3,450
February	15,400	26,400	3,420
March	15,400	26,400	3,400
April	15,400	26,400	3,400

[1]Data are rounded to no more than three significant digits.

Source: Defense Logistics Agency, DLA Strategic Materials.

TABLE 3
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:							
April	255	$227	245	129	$282	45	$877 [r]
May	106 [r]	83 [r]	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 [r]	54 [r]	36	22	32	22	730
December	180	151	896	432	841	83	1,530
January–December[4]	2,220 [r]	1,640 [r]	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
January–April[4]	614	549	2,220	719	2,340	105	3,130

[r]Revised.
[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 4
U.S. IMPORTS FOR CONSUMPTION OF CHROMITE ORE, FERROCHROMIUM, AND CHROMIUM METAL[1]

(Metric tons)

	2022	2023		
	January–December	March	April	January–April[2]
Chromite ore:				
Not more than 40% chromic oxide:				
Gross weight	5,750	1,160	236	1,790
Chromic oxide content	1,750	236	91	482
More than 40% but less than 46% chromic oxide:				
Gross weight	17,100	1,840	2,480	7,210
Chromic oxide content	7,400	789	1,100	3,170
46% or more chromic oxide:				
Gross weight	98,200	3,840	45,700	49,600
Chromic oxide content	83,300	1,790	41,600	43,400
Total, all grades:				
Gross weight	121,000	6,830	48,400	58,600
Chromic oxide content	92,500	2,820	42,800	47,000
Ferrochromium:				
Low-carbon:[3]				
Not more than 0.5% carbon:				
Gross weight	42,100 r	2,230	3,460	9,370
Chromium content	29,500 r	1,520	2,270	6,340
More than 0.5% but not more than 3% carbon:				
Gross weight	2,250	150	573	1,040
Chromium content	1,520	94	391	698
Total, low-carbon:				
Gross weight	44,300 r	2,380	4,030	10,400
Chromium content	31,000 r	1,610	2,660	7,030
Medium-carbon:[4]				
Gross weight	36	20	--	20
Chromium content	25	14	--	14
High-carbon:[5]				
Gross weight	399,000	18,700	19,300	85,300
Chromium content	224,000	9,880	12,000	46,400
Total, all grades:				
Gross weight	444,000 r	21,100	23,300	95,800
Chromium content	256,000 r	11,500	14,700	53,400
Chromium metal:				
Unwrought powders	13,500	722	1,160	3,750
Waste and scrap	519	15	26	109
Other than waste and scrap and unwrought powders	927 r	5	41	376
Total, all grades	14,900 r	742	1,230	4,230

rRevised. -- 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 5

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

Grade and country or locality	April			January–April[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	81	53	$267	561	373	$1,510
China	7	5	25	27	19	81
India	1,160	732	1,780	3,760	2,400	6,150
Kazakhstan	10,600	7,280	44,300	14,700	10,100	60,500
Oman	--	--	--	27	16	65
South Africa	6,210	3,170	6,440	54,600	26,800	59,300
Sweden	1,170	788	4,150	2,200	1,460	7,630
Switzerland	--	--	--	245	164	836
Zimbabwe	--	--	--	9,130	5,060	11,900
Total	19,300	12,000	57,000	85,300	46,400	148,000
Medium-carbon ferrochromium, India[5]	--	--	--	20	14	107
Low-carbon ferrochromium:[6]						
More than 0.5% but not more than 3% carbon:						
Brazil	150	95	376	400	251	1,350
China	--	--	--	25	16	105
Kazakhstan	423	296	2,850	613	430	4,250
Total	573	391	3,230	1,040	698	5,700
Not more than 0.5% carbon:						
Brazil	135	79	121	624	377	1,370
China	20	13	78	120	84	479
Germany	1,340	925	7,420	4,170	2,860	23,200
India	538	243	2,550	1,380	860	5,850
Japan	143	99	1,280	820	554	6,970
Kazakhstan	1,110	792	7,570	1,800	1,280	12,700
Russia	--	--	--	60	45	365
Turkey	175	121	1,200	400	277	2,640
United Kingdom	(7)	(7)	5	(7)	(7)	7
Total	3,460	2,270	20,200	9,370	6,340	53,500
All grades:						
Albania	81	53	267	561	373	1,510
Brazil	285	173	497	1,020	629	2,710
China	27	18	103	172	119	665
Germany	1,340	925	7,420	4,170	2,860	23,200
India	1,690	975	4,340	5,160	3,270	12,100
Japan	143	99	1,280	820	554	6,970
Kazakhstan	12,200	8,370	54,800	17,200	11,800	77,400
Oman	--	--	--	27	16	65
Russia	--	--	--	60	45	365
South Africa	6,210	3,170	6,440	54,600	26,800	59,300
Sweden	1,170	788	4,150	2,200	1,460	7,630
Switzerland	--	--	--	245	164	836
Turkey	175	121	1,200	400	277	2,640
United Kingdom	(7)	(7)	5	(7)	(7)	7
Zimbabwe	--	--	--	9,130	5,060	11,900
Total	23,300	14,700	80,500	95,800	53,400	207,000

-- 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 6
U.S. IMPORTS FOR CONSUMPTION OF CHROMIUM METAL IN 2023,
BY GRADE AND BY COUNTRY OR LOCALITY[1]

Grade and country or locality	April		January–April[2]	
	Gross weight (metric tons)	Value[3] (thousands)	Gross weight (metric tons)	Value[3] (thousands)
Unwrought powders:				
China	608	$5,590	1,910	$17,500
France	155	2,560	251	4,060
Germany	23	340	89	804
India	20	247	39	495
Korea, Republic of	16	253	16	253
Russia	40	457	279	3,020
United Kingdom	303	4,380	1,160	18,700
Total	1,160	13,800	3,750	44,900
Waste and scrap:				
Canada	4	23	37	236
Germany	(4)	3	(4)	3
Japan	2	26	11	104
Korea, Republic of	--	--	(4)	5
United Kingdom	20	173	61	501
Total	26	225	109	849
Other than waste and scrap and unwrought powders:				
Canada	--	--	(4)	221
China	1	74	4	324
France	39	752	250	4,820
Germany	1	164	6	609
Japan	--	--	3	106
Malaysia	--	--	(4)	4
Russia	--	--	80	671
South Africa	--	--	21	199
Taiwan	(4)	12	(4)	24
United Kingdom	--	--	10	199
Total	41	1,000	376	7,180
All grades:				
Canada	4	23	37	457
China	609	5,660	1,920	17,900
France	193	3,320	501	8,870
Germany	24	507	96	1,420
India	20	247	39	495
Japan	2	26	14	209
Korea, Republic of	16	253	16	258
Malaysia	--	--	(4)	4
Russia	40	457	359	3,690
South Africa	--	--	21	199
Taiwan	(4)	12	(4)	24
United Kingdom	323	4,550	1,240	19,400
Total	1,230	15,100	4,230	52,900

-- 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 7
U.S. STAINLESS STEEL TRADE, BY PRODUCT, IN 2023[1]

Stainless steel product	April		January–April[2]	
	Gross weight (metric tons)	Value[3] (thousands)	Gross weight (metric tons)	Value[3] (thousands)
Exports:				
Ingot	789	$6,400	4,620	$30,700
Flat-rolled (width > 600 mm)	15,200	64,500	63,700	276,000
Flat-rolled (width < 600 mm)	4,480	41,500	21,000	197,000
Bars and rods in irregular coils	61	818	941	6,240
Other bars and rods	3,250	43,000	12,300	167,000
Wire	741	13,200	2,580	52,800
Tubes, pipes, hollow profiles	3,420	37,800	14,800	159,000
Total	27,900	207,000	120,000	889,000
Stainless steel scrap	29,600	31,100	130,000	146,000
Grand total	57,600	238,000	250,000	1,040,000
Imports:				
Ingot	15,800	49,500	59,700	179,000
Flat-rolled (width > 600 mm)	27,500	99,300	99,000	372,000
Flat-rolled (width < 600 mm)	4,410	20,500	19,900	97,900
Bars and rods in irregular coils	4,030	19,300	13,700	67,600
Other bars and rods	15,400	92,600	52,300	314,000
Wire	3,360	20,800	13,500	85,600
Tubes, pipes, hollow profiles	16,600	150,000	53,500	450,000
Total	87,200	452,000	312,000	1,570,000
Stainless steel scrap	16,900	19,400	72,300	85,900
Grand total	104,000	472,000	384,000	1,650,000

[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.