

Mineral Industry Surveys

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CHROMIUM IN DECEMBER 2022

Stainless steel production increased by 4% in December 2022 compared with production in November 2022 and decreased by 17% compared with production in December 2021 (table 1). Government stockpile inventories for chromium metal were unchanged compared with those in November but decreased by 3% compared with those in December 2021. Government stockpile inventories for high-carbon ferrochromium and low-carbon ferrochromium inventories, were each unchanged, compared with those in November. Inventories for high-carbon ferrochromium and low-carbon ferrochromium decreased by 25% and slightly, respectively, compared with inventories in December 2021 (table 2).

In December 2022, the leading import sources for ferrochromium into the United States were, in descending

order of quantity by gross weight, South Africa, Kazakhstan, and Finland (table 5), whereas the leading import sources for chromium metal were the United Kingdom, China, 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 December 2022, imports of chromite ore increased by more than 15 times imports in November and more than doubled imports in December 2021. Imports of all grades of chromium ferroalloys, including ferrochromium silicon, more than doubled imports in November but decreased by 7% compared with imports in December 2021. Stainless steel imports in December 2022 decreased by 10% compared with imports in November and decreased by 38% compared with those in December 2021.

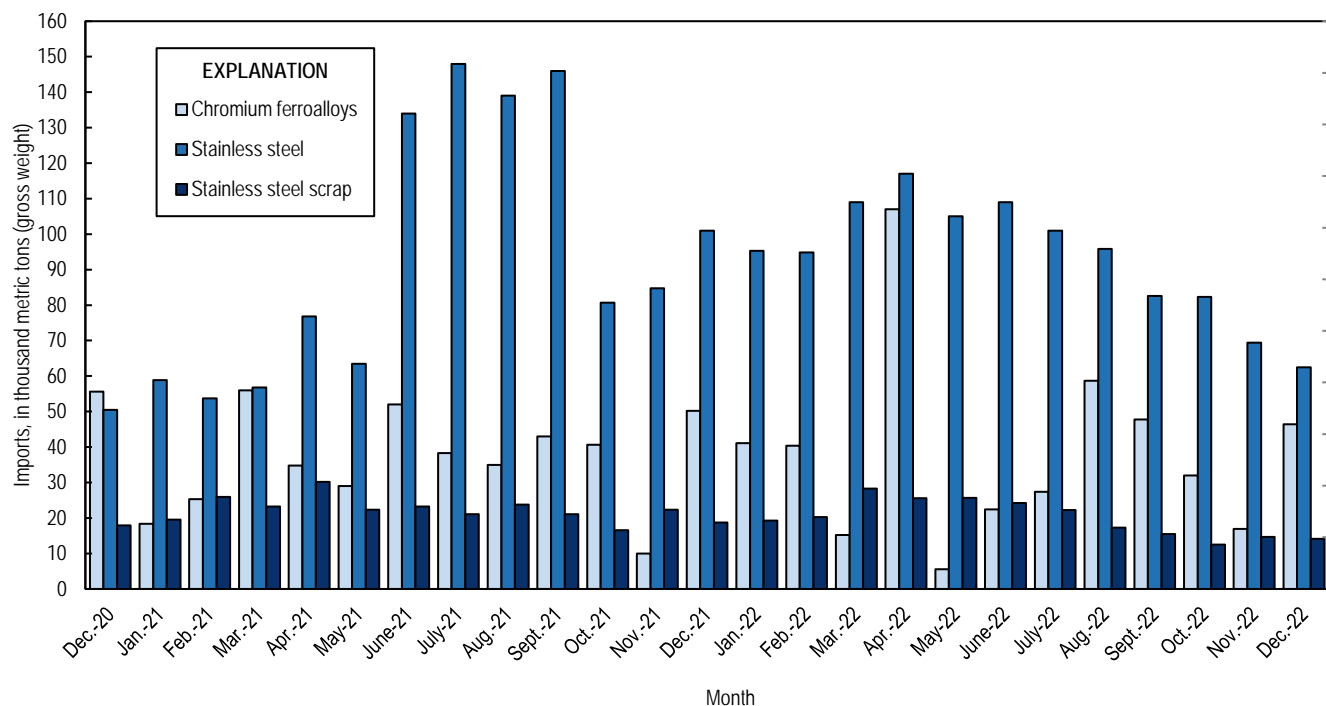


Figure 1. Chromium ferroalloys, stainless steel, and stainless steel scrap imports from December 2020 through December 2022. Source: U.S. Census Bureau.

Stainless steel scrap imports in December 2022 were 4% less than imports in November and 24% less than those in December 2021 (table 1).

The U.S. chromium metal (99% chromium) average price was \$5.88 per pound in December 2022, unchanged from the average price in November, but 4% more than the average price in December 2021. The U.S. high-carbon ferrochromium (62%–70% chromium) average price was 285.00 cents per pound of contained chromium in December 2022, unchanged from the average price in November 2022, but 29% more than the average price in December 2021 (fig. 2) (CRU Group, 2022a).

Industry News

Shyam Metalics and Energy of India (Shyam) purchased a stainless steel, wire rod, and bar mill from Mittal Corp. Ltd. (India) through India’s National Company Law Tribunal, which assists financially-troubled companies like Mittal Corp.

The mill added 150,000 metric tons per year of stainless-steel production capacity to Shyam’s holdings (CRU Group, 2022b).

References Cited

CRU Group, 2022a, CRU prices: CRU Group, December 30. (Accessed February 17, 2023, via <http://www.crugroup.com/>)
CRU Group, 2022b, Shyam to expand into the stainless steel sector: CRU Group, December 21. (Accessed January 3, 2023, via <http://www.crugroup.com/>)

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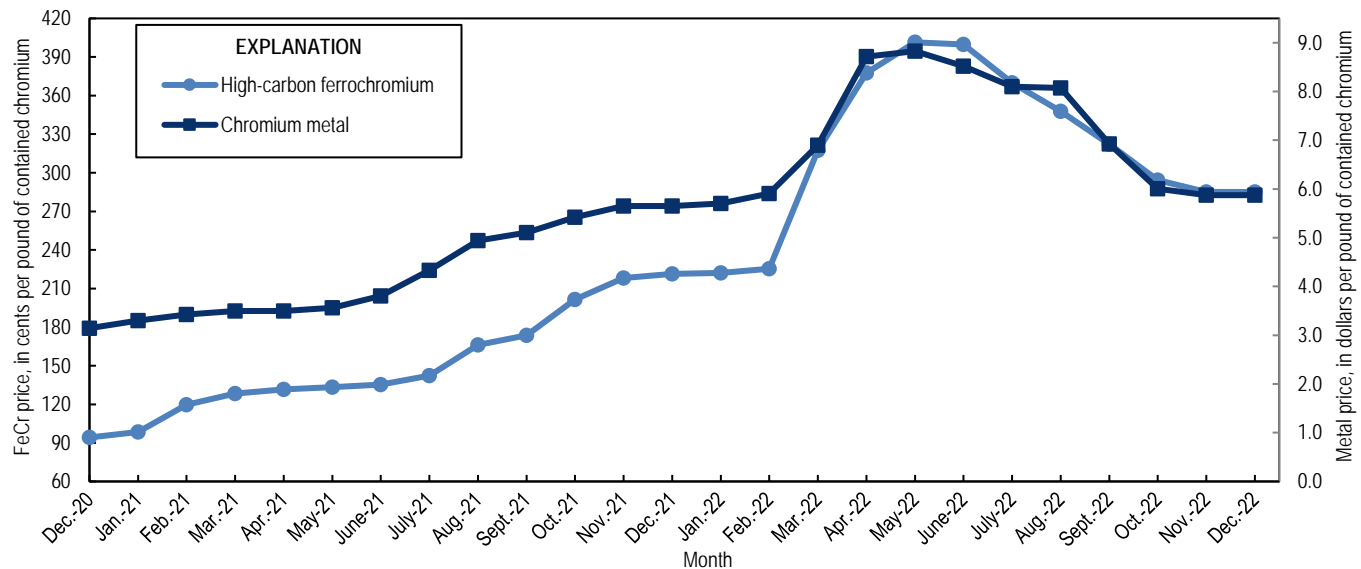


Figure 2. Average monthly prices for U.S. high-carbon ferrochromium (FeCr) and chromium metal from December 2020 through December 2022. Source: CRU Group.

TABLE 1
U.S. SALIENT CHROMIUM STATISTICS¹

(Metric tons, gross weight)

	2021	2022			
	January– December	October	November	December	January– December ²
Production, stainless steel ³	2,370,000	154,000	135,000	140,000	2,020,000
Components of U.S. supply:					
Stainless steel scrap receipts	672,000	37,200 ^e	32,500 ^e	33,900 ^e	537,000 ^e
Stainless steel scrap consumption	1,010,000	55,100 ^e	48,200 ^e	50,100 ^e	806,000 ^e
Imports for consumption:					
Chromite ore	146,000	4,730	550	8,600	121,000
Ferrochromium:					
More than 4% carbon	347,000	29,000	13,800	42,300	399,000
More than 3% but not more than 4% carbon	6,700	20	--	--	36
More than 0.5% but not more than 3% carbon	1,810	108	217	81	2,250
Not more than 0.5% carbon	57,700	1,210	2,280	3,600	41,700
Ferrochromium silicon	19,800	1,670	595	498	17,100
Total ferroalloy imports	433,000	32,000	16,900	46,400	460,000
Chromium metal ⁴	12,100	811	1,030	1,170	15,000
Stainless steel	1,140,000	82,300	69,400	62,500	1,130,000
Stainless steel scrap	268,000	12,500	14,700	14,100	240,000
Exports:					
Chromite ore	2,110	180	43	180	2,190
Chromium ferroalloys:					
High-carbon ferrochromium	1,690	1	36	893	3,640
Low-carbon ferrochromium	1,580	4	--	3	637
Ferrochromium silicon	134	--	--	--	40
Total ferroalloy exports	3,410	5	36	896	4,310
Chromium metal	456	17	22	83	567
Stainless steel	355,000	28,400	29,700	26,800	350,000
Stainless steel scrap	293,000	30,100	28,700	28,800	387,000
Government stockpile:					
Chromium ferroalloys ⁵	49,900	43,700	43,700	43,700	43,700
Chromium metal	3,560	3,470	3,450	3,450	3,450

^eEstimated. -- 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.

⁵Includes high- and low-carbon ferrochromium.

TABLE 2
U.S. GOVERNMENT STOCKPILE INVENTORY OF
CHROMIUM MATERIALS¹

(Metric tons)

	Chromium ferroalloys		Chromium metal
	High-carbon ferro-chromium	Low-carbon ferro-chromium	
2021, December	22,900	27,000	3,560
2022:			
January	22,000	27,000	3,560
February	22,000	27,000	3,560
March	20,700	26,800	3,520
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

¹Data 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 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)
2021:							
December	50	\$37	558	179	\$676	29	\$924
January–December ⁴	2,110	1,430	3,410	1,670	6,510	456	9,660
2022:							
January	90	88	321	124	414	63	1,030
February	170	144	252	52	259	39	1,080
March	262	206	157	44	172	66	1,360
April	255	227	245	129	282	45	867
May	96	77	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	43	36	36	22	32	22	730
December	180	151	896	432	841	83	1,530
January–December ⁴	2,190	1,620	4,310	2,170	4,420	567	12,800

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 4
U.S. IMPORTS FOR CONSUMPTION OF CHROMITE ORE, FERROCHROMIUM, AND
CHROMIUM METAL¹

(Metric tons)

	2021	2022		
	January– December	November	December	January– December ²
Chromite ore:				
Not more than 40% chromic oxide:				
Gross weight	15,800	--	1,900	5,750
Chromic oxide content	3,490	--	484	1,750
More than 40% but less than 46% chromic oxide:				
Gross weight	21,400	507	2,660	17,100
Chromic oxide content	9,270	220	1,140	7,400
46% or more chromic oxide:				
Gross weight	108,000	43	4,040	98,200
Chromic oxide content	94,300	22	1,890	83,300
Total, all grades:				
Gross weight	146,000	550	8,600	121,000
Chromic oxide content	107,000	242	3,510	92,500
Ferrochromium:				
Low-carbon: ³				
Not more than 0.5% carbon:				
Gross weight	57,700	2,280	3,600	41,700
Chromium content	40,400	1,620	2,540	29,300
More than 0.5% but not more than 3% carbon:				
Gross weight	1,810	217	81	2,250
Chromium content	1,250	153	57	1,520
Total, low-carbon:				
Gross weight	59,500	2,500	3,680	44,000
Chromium content	41,600	1,770	2,600	30,800
Medium-carbon: ⁴				
Gross weight	6,700	--	--	36
Chromium content	3,420	--	--	25
High-carbon: ⁵				
Gross weight	347,000	13,800	42,300	399,000
Chromium content	191,000	9,160	22,300	224,000
Total, all grades:				
Gross weight	413,000	16,300	45,900	443,000
Chromium content	236,000	10,900	24,900	255,000
Chromium metal:				
Unwrought powders	10,300	997	1,100	13,500
Waste and scrap	112	33	57	519
Other than waste and scrap and unwrought powders	1,710	3	16	931
Total, all grades	12,100	1,030	1,170	15,000

-- 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 5
U.S. IMPORTS FOR CONSUMPTION OF FERROCHROMIUM IN 2022, BY GRADE AND COUNTRY OR LOCALITY¹

Grade and country or locality	December			January–December 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	150	103	\$412	18,900	12,700	\$65,900
Canada	--	--	--	(5)	(5)	2
China	--	--	--	66	45	240
Finland	5,000	2,630	5,070	25,400	13,500	34,600
India	360	222	522	2,530	1,600	4,670
Kazakhstan	6,160	4,220	24,100	72,100	49,400	314,000
Oman	189	110	291	270	157	389
Russia	--	--	--	20,500	12,600	40,800
South Africa	29,800	14,600	34,300	194,000	94,600	260,000
Sweden	295	199	1,270	4,630	3,120	14,900
Switzerland	294	198	1,310	1,790	1,210	8,090
Turkey	--	--	--	24,500	15,800	84,500
Zimbabwe	--	--	--	35,100	19,800	46,400
Total	42,300	22,300	67,300	399,000	224,000	875,000
Medium-carbon ferrochromium:⁶						
India	--	--	--	20	14	129
Kazakhstan	--	--	--	16	11	90
Total	--	--	--	36	25	219
Low-carbon ferrochromium:⁷						
More than 0.5% but not more than 3% carbon						
Brazil	--	--	--	708	438	3,580
China	--	--	--	8	6	28
Kazakhstan	81	57	660	1,530	1,080	11,400
Total	81	57	660	2,250	1,520	15,000
Not more than 0.5% carbon:						
Belgium	--	--	--	98	68	402
Brazil	118	74	294	1,760	1,120	8,690
China	20	14	99	2,460	1,840	10,600
Germany	1,250	868	7,010	8,900	6,260	37,400
India	--	--	--	625	403	2,870
Japan	126	85	1,030	2,130	1,490	12,700
Kazakhstan	2,050	1,480	17,300	14,500	10,500	124,000
Russia	5	4	36	10,800	7,320	62,500
Sweden	--	--	--	14	10	59
Turkey	25	17	228	372	260	2,370
United Kingdom	--	--	--	3	2	21
Total	3,600	2,540	26,000	41,700	29,300	261,000
All grades:						
Albania	150	103	412	18,900	12,700	65,900
Belgium	--	--	--	98	68	402
Brazil	118	74	294	2,470	1,560	12,300
Canada	--	--	--	(5)	(5)	2
China	20	14	99	2,530	1,890	10,900
Finland	5,000	2,630	5,070	25,400	13,500	34,600
Germany	1,250	868	7,010	8,900	6,260	37,400
India	360	222	522	3,170	2,010	7,670
Japan	126	85	1,030	2,130	1,490	12,700
Kazakhstan	8,300	5,750	42,100	88,100	61,000	449,000
Oman	189	110	291	270	157	389
Russia	5	4	36	31,400	19,900	103,000
South Africa	29,800	14,600	34,300	194,000	94,600	260,000
Sweden	295	199	1,270	4,640	3,130	15,000
Switzerland	294	198	1,310	1,790	1,210	8,090
Turkey	25	17	228	24,800	16,100	86,900
United Kingdom	--	--	--	3	2	21
Zimbabwe	--	--	--	35,100	19,800	46,400
Total	45,900	24,900	93,900	443,000	255,000	1,150,000

-- 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.

⁵Less than ½ unit.

⁶Ferrochromium containing more than 3% carbon but not more than 4% carbon.

⁷Ferrochromium containing not more than 3% carbon.

Source: U.S. Census Bureau.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF CHROMIUM METAL IN 2022,
BY GRADE AND BY COUNTRY OR LOCALITY¹

Grade and country or locality	December		January–December ²	
	Gross weight (metric tons)	Value ³ (thousands)	Gross weight (metric tons)	Value ³ (thousands)
Unwrought powders:				
Australia	--	--	(4)	\$4
China	466	\$4,680	5,170	58,100
France	152	3,630	2,400	40,600
Germany	10	153	129	2,400
India	--	--	138	2,160
Japan	(4)	2	(4)	2
Korea, Republic of	--	--	64	988
Russia	38	427	1,960	21,100
Spain	--	--	29	138
Ukraine	--	--	1	22
United Kingdom	431	7,430	3,610	72,300
Total	1,100	16,300	13,500	198,000
Waste and scrap:				
Canada	4	23	26	143
China	--	--	131	1,100
Germany	--	--	1	10
Japan	--	--	9	129
South Africa	--	--	14	180
United Kingdom	53	412	338	3,330
Total	57	435	519	4,890
Other than waste and scrap and unwrought powders:				
Austria	--	--	(4)	3
Canada	--	--	(4)	8
China	(4)	5	9	880
France	(4)	62	(4)	88
Germany	1	125	46	1,940
India	--	--	(4)	5
Italy	--	--	(4)	82
Japan	1	50	6	336
Malaysia	--	--	(4)	23
Russia	14	253	762	8,980
South Africa	--	--	32	348
Spain	--	--	10	45
United Kingdom	--	--	65	1,090
Total	16	495	931	13,800
All grades:				
Australia	--	--	(4)	4
Austria	--	--	(4)	3
Canada	4	23	26	151
China	466	4,680	5,310	60,100
France	152	3,700	2,400	40,700
Germany	11	278	176	4,350
India	--	--	139	2,160
Italy	--	--	(4)	82
Japan	1	52	15	468
Korea, Republic of	--	--	64	988
Malaysia	--	--	(4)	23
Russia	52	680	2,720	30,100
South Africa	--	--	46	528
Spain	--	--	38	183
Ukraine	--	--	1	22
United Kingdom	484	7,850	4,020	76,700
Total	1,170	17,300	15,000	217,000

-- 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 7
U.S. STAINLESS STEEL TRADE, BY PRODUCT, IN 2022¹

Stainless steel product	December		January–December ²	
	Gross weight (metric tons)	Value ³ (thousands)	Gross weight (metric tons)	Value ³ (thousands)
Exports:				
Ingot	976	\$7,430	13,100	\$93,100
Flat-rolled (width > 600 mm)	14,700	55,400	196,000	897,000
Flat-rolled (width < 600 mm)	4,390	43,600	62,200	468,000
Bars and rods in irregular coils	338	1,720	2,740	15,700
Other bars and rods	2,830	39,800	31,200	406,000
Wire	391	11,100	7,140	151,000
Tubes, pipes, hollow profiles	3,110	34,600	37,900	411,000
Total	26,800	194,000	350,000	2,440,000
Stainless steel scrap	28,800	36,100	387,000	393,000
Grand total	55,600	230,000	737,000	2,840,000
Imports:				
Ingot	14,800	40,600	167,000	523,000
Flat-rolled (width > 600 mm)	17,800	67,200	489,000	1,780,000
Flat-rolled (width < 600 mm)	3,990	19,700	62,200	315,000
Bars and rods in irregular coils	3,200	16,200	51,100	250,000
Other bars and rods	9,860	58,600	140,000	783,000
Wire	2,830	17,200	53,100	305,000
Tubes, pipes, hollow profiles	9,930	96,700	163,000	1,230,000
Total	62,500	316,000	1,130,000	5,190,000
Stainless steel scrap	14,100	16,400	240,000	387,000
Grand total	76,600	333,000	1,360,000	5,570,000

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 incurred in bringing the merchandise into the United States.

Source: U.S. Census Bureau.