

Mineral Industry Surveys

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CHROMIUM IN MARCH 2004

On the basis of gross weight, consumption of chromium ferroalloys and metal in March 2004 increased 6% compared with consumption in February 2004, according to the U.S. Geological Survey.

Included in this Mineral Industry Surveys are U.S. salient chromium statistics, U.S. Government stockpile inventory of chromium materials in March 2004, consumption by end use and consumer stocks of chromium ferroalloys and metal at the end of March 2004, and U.S. foreign trade data for selected chromium-containing materials in February 2004.

Update

The Defense National Stockpile Center (DNSC) awarded 82,554 metric tons (t) of refractory grade chromite in April under Solicitation for Offers, DLA—Chromite, Chemical & Refractory Grade-003. The award was made to Metawise

Group Inc., of Foster City, CA, for a provisional value of \$2.5 million (Defense National Stockpile Center, 2004a). DNSC announced the sale of 9,979 t of ferrochromium in April, of which 9,072 t was high-carbon ferrochromium, and 907 t was low-carbon ferrochromium, to 5 companies for \$10.25 million or \$0.466 per pound (gross weight) (Defense National Stockpile Center, 2004b).

References Cited

- Defense National Stockpile Center, 2004a, Stockpile accepts chromite ore offer: Defense National Stockpile Center, News Release DNSC-04-2458, April 13, 1 p.
- Defense National Stockpile Center, 2004b, Stockpile announces ferrochromium sales for April 2004: Defense National Stockpile Center, News Release DNSC-04-2467, May 5, 1 p.

TABLE 1
U.S. SALIENT CHROMIUM STATISTICS¹

(Metric tons, gross weight)

	2003	2004			
	January- December	January	February	March	January- March
Production:					
Stainless steel production ²	2,210,000	177,000	184,000	223,000	584,000 ³
Components of U.S. supply:					
Stainless steel scrap receipts	757,000	65,400	63,400	80,500	209,000
Stainless steel scrap consumption	1,070,000	93,100	87,100	101,000	281,000
Imports for consumption:					
Chromite ore	173,000	25,400	394	NA	25,800 ⁴
Ferrochromium:					
More than 4% carbon	366,000	19,400	31,200	NA	50,700 ⁴
More than 0.5%, but not more than 3% carbon	5,340	22	--	NA	22 ⁴
Not more than 0.5% carbon	19,500	1,040	516	NA	1,560 ⁴
Ferrochromium silicon	38,700	304	4,570	NA	4,880 ⁴
Total ferroalloy imports	429,000	20,800	36,300	NA	57,100 ⁴
Chromium metal ⁵	8,570	525	1,070	NA	1,590 ⁴
Stainless steel	639,000	46,000	59,700	NA	106,000 ⁴
Stainless steel scrap	89,200	12,400	13,500	NA	26,000 ⁴
Distribution of U.S. supply:					
Industry consumer, chromium ferroalloys and metal	369,000	33,900 ^r	33,800 ^r	35,700	103,000
Exports:					
Chromite ore	103,000 ^r	223	2,510	NA	2,740 ⁴
Chromium ferroalloys:					
High-carbon ferrochromium	3,180	483	376	NA	859 ⁴
Low-carbon ferrochromium	1,230	68	255	NA	322 ⁴
Ferrochromium silicon	481	32	55	NA	87 ⁴
Total ferroalloy exports	4,890	583	685	NA	1,270 ⁴
Chromium metal	941	76	76	NA	153 ⁴
Stainless steel	327,000	28,500 ^r	30,100	NA	58,600 ⁴
Stainless steel scrap	505,000	31,600	33,900	NA	65,500 ⁴
Stocks at end of period:					
Industry consumer, chromium ferroalloys and metal	XX	14,400 ^r	14,100 ^r	15,400	XX
Government stockpile:					
Chromite ore	XX	82,600	82,100	82,100	XX
Chromium ferroalloys	XX	677,000	665,000	665,000	XX
Chromium metal	XX	6,660	6,660	6,660	XX

¹Revised. NA Not available. XX Not applicable.

²Data are rounded to no more than three significant digits; may not add to totals shown.

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 revised data that is not broken out by specific month.

⁵Includes January through February data; March data not available.

⁶Includes waste and scrap and other.

TABLE 2
U.S. REPORTED CONSUMPTION AND STOCKS OF CHROMIUM PRODUCTS IN 2004¹

(Metric tons, gross weight unless otherwise noted)

	February	March	January- March
Consumption by end use:			
Alloy uses:			
Iron alloys:			
Steel:			
Carbon steel	304	303	898
High-strength low-alloy steel	626 ^r	622	1,840
Stainless and heat-resisting steel	29,400 ^r	31,500	90,700
Full alloy steel	1,450	1,130	3,650
Electrical steel	W	W	W
Tool steel	491 ^r	518	1,480
Unspecified steel	W	W	W
Cast irons	W	W	W
Superalloys	603 ^r	695	1,920
Other alloys ³	65 ^r	54	187
Total	33,800 ^r	35,700	103,000
Total, chromium content	20,000 ^r	21,200	60,800
Consumption by material:			
Low-carbon ferrochromium	2,070 ^r	2,140	6,020
High-carbon ferrochromium	28,500 ^r	30,400	87,200
Ferrochromium silicon	2,630 ^r	2,600	8,420
Chromium metal	367 ^r	371	1,090
Chromite ore	W	W	W
Chromium-aluminum alloy	39 ^r	34	103
Other chromium materials	W	W	W
Total	33,800 ^r	35,700	103,000
Total, chromium content	20,000 ^r	21,200	60,800
Consumer stocks:			
Low-carbon ferrochromium	1,740 ^r	1,730	XX
High-carbon ferrochromium	11,000	11,900	XX
Ferrochromium silicon	1,020 ^r	1,420	XX
Chromium metal	276 ^r	204	XX
Chromite ore	W	W	XX
Chromium-aluminum alloy	30 ^r	29	XX
Other chromium materials	W	W	XX
Total	14,100 ^r	15,400	XX
Total, chromium content	8,500 ^r	9,130	XX

^rRevised. W Withheld to avoid disclosing company proprietary data; included in "Total." XX Not applicable.

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

²May include revised data.

³Includes 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^{1,2}

(Metric tons)

Period	Chromite ore		Chromium ferroalloys		Chromium metal
	Chemical	Refractory	High-carbon ferro-chromium	Low-carbon ferro-chromium	
2003:					
February	78,300	126,000	521,000	229,000	7,220
March	78,300	98,000	517,000	228,000	7,210
April	78,300	98,000	505,000	228,000	7,210
May	78,300	98,000	501,000	227,000	7,160
June	71,500	83,700	497,000	226,000	7,160
July	64,700	83,700	492,000	225,000	7,150
August	71,500 ³	82,100	484,000	220,000	7,150
September	70,900	82,600 ³	482,000	218,000	7,100
October	71,500 ³	82,600	477,000	218,000	7,120 ³
November	71,500	82,600	472,000	217,000	7,120
December	71,500	82,600	466,000	217,000	6,660
2004:					
January	--	82,600	462,000	215,000	6,660
February	--	82,100	453,000	212,000	6,660
March	--	82,100	453,000	212,000	6,660

-- Zero.

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

²These Government stocks are reported by the Defense National Stockpile Center in Inventory of Stockpile Materials R-1, which reports uncommitted inventory. Uncommitted inventory is that inventory for which there is no sales contract. Committed inventory is that inventory for which there is a sales contract, however, the material has not yet been shipped. For chromium materials, the R-1 report includes chromium materials that (1) meet specifications and are held in excess of goal and (2) do not meet specifications and are held in excess of goal. The R-1 report excludes chromium materials that are committed and awaiting shipment.

³The increase resulted from the reclassification of physical inventory from committed to uncommitted. It did not result from the addition of chromium materials to the stockpile.

Source: Defense National Stockpile Center.

TABLE 4
U.S. EXPORTS OF CHROMITE ORE, CHROMIUM FERROALLOYS, AND METAL¹

Period	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)
2003:							
February	442	\$159	196	111	\$230	47	\$499
March	596	166	352	217	445	89	589
April	1,900	209	390	230	439	64	877
May	444	124	317	190	276	72	912
June	1,030	204	756	443	653	46	579
July	985	202	273	150	252	95	1,030
August	22,900	949	387	232	455	119	1,320
September	17,200 ^r	626	378	211	479	47	1,160
October	1,030	214	393	208	485	72	1,350
November	634	194	462	262	502	152	2,120
December	54,600	4,090	502	285	548	65	958
January-December	103,000 ^r	7,410	4,890	2,830	5,240	941	11,900
2004:							
January	223	74	583	344	767	76	1,520
February	2,510	548	685	409	1,040	76	1,660
January-February	2,740	622	1,270	753	1,800	153	3,180

^rRevised.

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

²Includes low-, medium-, and high-carbon ferrochromium and ferrochromium silicon.

³Includes chromium metal waste and scrap and unwrought powders.

Source: U.S. Census Bureau.

TABLE 5
U.S. IMPORTS FOR CONSUMPTION OF CHROMITE ORE, FERROCHROMIUM, AND CHROMIUM METAL¹

(Metric tons)

	2003		2004		
	December	January- December ²	January	February	January- February
Chromite ore:					
Not more than 40% chromic oxide:					
Gross weight	--	77	--	--	--
Chromic oxide content	--	24	--	--	--
More than 40% but less than 46% chromic oxide:					
Gross weight	27	7,940	113	140	253
Chromic oxide content	12	3,370	50	63	113
46% or more chromic oxide:					
Gross weight	13,500	165,000	25,300	254	25,500
Chromic oxide content	6,240	77,400	11,700	125	11,800
Total, all grades:					
Gross weight	13,500	173,000	25,400	394	25,800
Chromic oxide content	6,250	80,800	11,700	188	11,900
Ferrochromium:					
Low-carbon: ³					
Not more than 0.5%:					
Gross weight	2,670	19,500	1,040	516	1,560
Chromium content	1,790	13,300	610	365	975
More than 0.5% but not more than 3%:					
Gross weight	88	5,340	22	--	22
Chromium content	61	3,420	15	--	15
Total, low-carbon:					
Gross weight	2,760	24,900	1,060	516	1,580
Chromium content	1,850	16,800	625	365	990
High-carbon: ⁴					
Gross weight	19,100	366,000	19,400	31,200	50,700
Chromium content	11,900	210,000	9,440	18,100	27,600
Total, all grades:					
Gross weight	21,900	391,000	20,500	31,800	52,200
Chromium content	13,800	227,000	10,100	18,500	28,600
Chromium metal:					
Unwrought powders	128	1,810	121	199	320
Waste and scrap	10	284	12	5	17
Other than waste and scrap and unwrought powders	647	6,480	392	862	1,260
Total, all grades	785	8,570	525	1,070	1,590

-- Zero.

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

²May include revised data.

³Ferrochromium containing not more than 3% carbon.

⁴Ferrochromium containing more than 4% carbon.

Source: U.S. Census Bureau.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF CHROMITE ORE IN 2004, BY GRADE AND BY COUNTRY¹

Grade and country	February			January-February ²		
	Gross weight (metric tons)	Cr ₂ O ₃ (metric tons)	Value ³ (thousands)	Gross weight (metric tons)	Cr ₂ O ₃ (metric tons)	Value ³ (thousands)
More than 40% but less than 46% chromic oxide, South Africa	140	63	\$21	253	113	\$38
46% or more chromic oxide:						
South Africa	254	125	42	529	258	82
Switzerland	--	--	--	25,000	11,600	809
Total	254	125	42	25,500	11,800	891
All grades:						
South Africa	394	188	64	782	371	120
Switzerland	--	--	--	25,000	11,600	809
Total	394	188	64	25,800	11,900	929

-- Zero.

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

²May include revised data.

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.

Source: U.S. Census Bureau.

TABLE 7
U.S. IMPORTS FOR CONSUMPTION OF FERROCHROMIUM IN 2004, BY GRADE AND BY COUNTRY¹

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						
Kazakhstan	12,400	8,620	\$9,870	12,500	8,710	\$10,000
Russia	--	--	--	15	10	10
South Africa	18,900	9,500	9,280	38,100	18,800	17,500
Total	31,200	18,100	19,200	50,700	27,600	27,500
Low-carbon ferrochromium:⁵						
More than 0.5% but not more than 3% carbon, Russia	--	--	--	22	15	18
Not more than 0.5% carbon:						
Germany	143	100	231	164	115	273
Japan	42	41	144	202	153	483
Kazakhstan	150	106	165	150	106	165
Russia	99	70	124	99	70	124
South Africa	83	48	76	921	518	617
Turkey	--	--	--	20	13	39
Total	516	365	739	1,560	975	1,700
All grades:						
Germany	143	100	231	164	115	273
Japan	42	41	144	202	153	483
Kazakhstan	12,500	8,730	10,000	12,700	8,810	10,200
Russia	99	70	124	135	95	151
South Africa	19,000	9,550	9,360	39,100	19,400	18,100
Turkey	--	--	--	20	13	39
Total	31,800	18,500	19,900	52,200	28,600	29,200

-- Zero.

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

²May include revised data.

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 8
U.S. IMPORTS FOR CONSUMPTION OF CHROMIUM METAL IN 2004, 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:				
Canada	--	--	1	\$8
China	80	\$269	100	338
France	1	8	1	8
Germany	1	18	1	31
Japan	--	--	4	173
Russia	116	1,030	196	1,250
Taiwan	--	--	15	21
United Kingdom	(4)	65	1	134
Total	199	1,390	320	1,960
Waste and scrap:				
Japan	1	10	10	36
Sweden	--	--	2	6
Taiwan	4	23	4	23
Total	5	33	17	64
Other than waste and scrap and unwrought powders:				
China	200	722	270	958
France	186	1,380	295	2,230
Germany	1	50	1	50
Hong Kong	6	18	6	18
Japan	1	22	1	22
Mexico	3	9	3	9
Netherlands	--	--	(4)	4
Russia	265	931	423	1,510
Switzerland	--	--	(4)	6
United Kingdom	201	1,110	256	1,440
Total	862	4,240	1,260	6,280
All grades:				
Canada	--	--	1	8
China	280	991	370	1,300
France	187	1,390	296	2,240
Germany	2	67	2	81
Hong Kong	6	18	6	18
Japan	2	32	15	231
Mexico	3	9	3	9
Netherlands	--	--	(4)	4
Russia	381	1,960	619	2,760
Sweden	--	--	2	6
Switzerland	--	--	(4)	6
Taiwan	4	23	19	44
United Kingdom	201	1,180	257	1,600
Total	1,070	5,660	1,590	8,300

-- Zero.

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

²May include revised data.

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 1/2 unit.

Source: U.S. Census Bureau.

TABLE 9
U.S. TRADE OF STAINLESS STEEL, BY PRODUCT, IN 2004¹

Stainless steel product	February		January-February	
	Gross weight (metric tons)	Value ² (thousands)	Gross weight (metric tons)	Value ² (thousands)
Exports:				
Ingot	669	\$2,650	1,240	\$5,750
Flat-rolled (width > 600 mm)	16,200	39,300	31,300	69,800
Flat-rolled (width < 600 mm)	7,560	22,200	15,200	44,200
Bars and rods in irregular coils	242	1,160	511	2,070
Other bars and rods	1,780	10,100	3,280	18,300
Wire	775	5,780	1,500	9,840
Tubes, pipes, hollow profiles	2,880	12,900	5,540	25,100
Total	30,100	94,100	58,600	175,000
Stainless steel scrap	33,900	43,500	65,500	83,300
Grand total	64,000	138,000	124,000	258,000
Imports:				
Ingot	16,800	32,500	24,800	47,000
Flat-rolled (width > 600 mm)	25,000	53,000	45,500	91,300
Flat-rolled (width < 600 mm)	2,700	8,470	5,740	17,500
Bars and rods in irregular coils	2,990	6,420	4,750	9,740
Other bars and rods	3,650	9,610	7,530	20,100
Wire	2,860	9,260	5,620	17,800
Tubes, pipes, hollow profiles	5,660	24,100	11,800	47,500
Total	59,700	143,000	106,000	251,000
Stainless steel scrap	13,500	15,800	26,000	32,100
Grand total	73,200	159,000	132,000	283,000

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

²Export value is free alongside ship (f.a.s.). 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.