

Mineral Industry Surveys

For information, contact:

John F. Papp, Chromium Commodity Specialist
U.S. Geological Survey
989 National Center
Reston, VA 20192
Telephone: (703) 648-4963, Fax: (703) 648-7757
E-mail: jpapp@usgs.gov

Joseph M. Krisanda (Data)
Telephone: (703) 649-7987
Fax: (703) 648-7975
E-mail: jkrisand@usgs.gov

Internet: <http://minerals.usgs.gov/minerals>

CHROMIUM IN JANUARY 2004

On the basis of gross weight, consumption of chromium ferroalloys and metal in January 2004 decreased slightly compared with consumption in December 2003, 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 January 2004, consumption by end use and consumer stocks of chromium ferroalloys and metal at the end of January 2004, and U.S. foreign trade data for selected chromium-containing materials in December 2003.

Update

The Defense National Stockpile Center (DNSC) sold 11,794 tons of ferrochromium in February, of which 9,071 tons was high-carbon ferrochromium and 2,722 tons was low-carbon ferrochromium. The ferrochromium was valued at \$11.6 million, or \$984 per ton (Defense National Stockpile Center, 2004).

Reference Cited

Defense National Stockpile Center, 2004, Stockpile announces ferrochromium sales for February 2004: Defense National Stockpile Center, News Release DNSC-04-2433, March 5, 1 p.

TABLE 1
U.S. SALIENT CHROMIUM STATISTICS¹

(Metric tons, gross weight)

	2002	2003				2004 January	
	January- December ²	October	November	December	Fourth quarter		January- December ²
Production:							
Stainless steel production ³	2,180,000	204,000	176,000	208,000	580,000 ⁴	2,210,000 ⁴	177,000
Components of U.S. supply:							
Stainless steel scrap receipts	815,000	68,500	63,500	63,300	195,000	757,000	65,400
Stainless steel scrap consumption	1,190,000	90,300	91,500	89,700	271,000	1,070,000	93,100
Imports for consumption:							
Chromite ore	112,000	410	10,300	13,500	24,300	173,000	NA
Ferrochromium:							
More than 4% carbon	283,000	48,800	14,600	19,100	82,600	366,000	NA
More than 0.5%, but not more than 3% carbon	8,040	407	111	88	606	5,340	NA
Not more than 0.5% carbon	25,600	258	245	2,670	3,170	19,500	NA
Ferrochromium silicon	28,900	3,090	414	5,380	8,890	38,700	NA
Total ferroalloy imports	345,000	52,600	15,400	27,300	95,200	429,000	NA
Chromium metal ⁵	7,430	502	474	785	1,760	8,570	NA
Stainless steel	752,000	57,500	43,800	53,200	154,000	639,000	NA
Stainless steel scrap	81,000	9,530	11,900	10,900	32,300	89,200	NA
Distribution of U.S. supply:							
Industry consumer, chromium ferroalloys and metal	384,000	31,500	30,500	34,300	96,300	369,000	33,800
Exports:							
Chromite ore	24,300	1,030	634	54,600	56,300	87,400	NA
Chromium ferroalloys:							
High-carbon ferrochromium	13,500	195	319	360	874	3,180	NA
Low-carbon ferrochromium	2,070	82	69	55	206	1,230	NA
Ferrochromium silicon	281	117	74	87	278	481	NA
Total ferroalloy exports	15,900	393	462	502	1,360	4,890	NA
Chromium metal	745	72	152	65	289	941	NA
Stainless steel	273,000	29,100	27,500	26,200	82,900	327,000	NA
Stainless steel scrap	342,000	43,500	21,400	42,500	107,000	505,000	NA
Stocks at end of period:							
Industry consumer, chromium ferroalloys and metal	13,900	11,600	13,300	15,200	XX	XX	14,300
Government stockpile:							
Chromite ore	204,000	154,000	154,000	154,000	XX	XX	82,600
Chromium ferroalloys	763,000	695,000	689,000	683,000	XX	XX	677,000
Chromium metal	7,220	7,120	7,120	6,660	XX	XX	6,660

NA Not available. XX Not applicable.

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

²May include revised data.

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 waste and scrap and other.

TABLE 2
U.S. REPORTED CONSUMPTION AND STOCKS OF CHROMIUM PRODUCTS¹

(Metric tons, gross weight unless otherwise noted)

	2003		2004 January
	December	January- December ²	
Consumption by end use:			
Alloy uses:			
Iron alloys:			
Steel:			
Carbon steel	288	3,620	291
High-strength low-alloy steel	590	6,560	546
Stainless and heat-resisting steel	29,900	317,000	29,400
Full alloy steel	1,370	15,600	1,430
Electrical steel	W	W	W
Tool steel	448	5,630	469
Unspecified Steel	W	W	W
Cast irons	W	W	W
Superalloys	669	7,750	690
Other alloys ³	81	1,080	88
Total	34,300	369,000	33,800
Total, chromium content	20,000	217,000	19,700
Consumption by material:			
Low-carbon ferrochromium	1,850	21,300	1,860
High-carbon ferrochromium	28,600	302,000	28,200
Ferrochromium silicon	3,350	39,200	3,200
Chromium metal	349	3,880	365
Chromite ore	W	W	W
Chromium-aluminum alloy	33	418	33
Other chromium materials	W	W	W
Total	34,300	369,000	33,800
Total, chromium content	20,000	217,000	19,700
Consumer stocks:			
Low-carbon ferrochromium	1,570	XX	1,630
High-carbon ferrochromium	12,100	XX	11,200
Ferrochromium silicon	1,250	XX	1,240
Chromium metal	186	XX	138
Chromite ore	W	XX	W
Chromium-aluminum alloy	34	XX	36
Other chromium materials	W	XX	W
Total	15,200	XX	14,300
Total, chromium content	8,990	XX	8,390

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:					
January	78,300	126,000	527,000	231,000	7,220
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

-- 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)
2002:							
December	415	\$93	296	178	\$288	71	\$597
January-December	24,300	4,070	15,900	10,100	10,100	745	7,450
2003:							
January	747	280	483	290	472	73	508
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	2,040	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	87,400	7,410	4,890	2,830	5,240	941	11,900

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)

	2002	2003		
	January-December ²	November	December	January-December ²
Chromite ore:				
Not more than 40% chromic oxide:				
Gross weight	1,080	--	--	77
Chromic oxide content	370	--	--	24
More than 40% but less than 46% chromic oxide:				
Gross weight	10,600	7,100	27	7,940
Chromic oxide content	4,470	2,980	12	3,370
46% or more chromic oxide:				
Gross weight	100,000	3,240	13,500	165,000
Chromic oxide content	46,700	2,120	6,240	77,400
Total, all grades:				
Gross weight	112,000	10,300	13,500	173,000
Chromic oxide content	51,600	5,110	6,250	80,800
Ferrochromium:				
Low-carbon: ³				
Not more than 0.5%:				
Gross weight	25,600	245	2,670	19,500
Chromium content	17,000	173	1,790	13,300
More than 0.5% but not more than 3%:				
Gross weight	8,040	111	88	5,340
Chromium content	4,960	77	61	3,420
Total, low-carbon:				
Gross weight	33,600	356	2,760	24,900
Chromium content	21,900	250	1,850	16,800
High-carbon: ⁴				
Gross weight	283,000	14,600	19,100	366,000
Chromium content	169,000	7,240	11,900	210,000
Total, all grades:				
Gross weight	316,000	15,000	21,900	391,000
Chromium content	191,000	7,490	13,800	227,000
Chromium metal:				
Unwrought powders	776	101	128	1,810
Waste and scrap	83	3	10	284
Other than waste and scrap and unwrought powders	6,570	369	647	6,480
Total, all grades	7,430	474	785	8,570

-- 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 2003, BY GRADE AND BY COUNTRY¹

Grade and country	December			January-December 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)
Not more than 40% chromic oxide, South Africa	--	--	--	77	24	\$30
More than 40% but less than 46% chromic oxide, South Africa	27	12	\$4	7,940	3,370	692
46% or more chromic oxide, South Africa	13,500	6,240	1,250	165,000	77,400	8,570
All grades, South Africa	13,500	6,250	1,250	173,000	80,800	9,290

-- 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 2003, BY GRADE AND BY COUNTRY¹

Grade and country	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						
China	--	--	--	20	14	\$25
Germany	--	--	--	340	216	185
Kazakhstan	12,500	8,750	\$8,480	126,000	86,900	75,000
Russia	--	--	--	3,610	2,390	2,380
South Africa	6,660	3,200	2,920	207,000	103,000	72,600
Sweden	--	--	--	12	7	7
Zimbabwe	--	--	--	29,000	17,500	11,800
Total	19,100	11,900	11,400	366,000	210,000	162,000
Low-carbon ferrochromium:⁵						
More than 0.5% but not more than 3% carbon:						
Kazakhstan	--	--	--	1,100	758	934
Russia	88	61	63	321	220	345
South Africa	--	--	--	3,920	2,440	1,920
Total	88	61	63	5,340	3,420	3,200
Not more than 0.5% carbon:						
China	--	--	--	95	63	117
Germany	20	--	47	3,990	2,790	7,370
Japan	160	110	334	1,790	1,240	3,750
Kazakhstan	--	--	--	1,530	1,060	1,340
Russia	2,470	1,670	2,040	11,900	8,030	11,200
South Africa	16	11	33	88	59	128
Turkey	--	--	--	160	107	241
Total	2,670	1,790	2,450	19,500	13,300	24,100
All grades:						
China	--	--	--	115	76	142
Germany	20	--	47	4,330	3,000	7,550
Japan	160	110	334	1,790	1,240	3,750
Kazakhstan	12,500	8,750	8,480	129,000	88,800	77,300
Russia	2,560	1,730	2,100	15,800	10,600	13,900
South Africa	6,680	3,210	2,950	211,000	106,000	74,600
Sweden	--	--	--	12	7	7
Turkey	--	--	--	160	107	241
Zimbabwe	--	--	--	29,000	17,500	11,800
Total	21,900	13,800	13,900	391,000	227,000	189,000

-- Zero.

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

²May included 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 2003, BY GRADE AND BY COUNTRY¹

Grade and country	December		January-December ²	
	Gross weight (metric tons)	Value ³ (thousands)	Gross weight (metric tons)	Value ³ (thousands)
Unwrought powders:⁴				
China	--	--	203	\$698
France	--	--	1	8
Germany	(5)	\$2	30	172
Japan	31	430	193	2,240
Kazakhstan	--	--	74	229
Russia	97	788	668	4,910
United Kingdom	(5)	65	639	3,350
Total	128	1,290	1,810	11,600
Waste and scrap:				
China	--	--	1	7
Germany	--	--	11	173
Japan	--	--	37	260
Korea, Republic of	--	--	4	30
Malaysia	--	--	1	3
Russia	--	--	205	827
Singapore	--	--	1	5
Sweden	9	87	9	87
Taiwan	1	7	7	51
United Kingdom	--	--	8	76
Total	10	94	284	1,520
Other than waste and scrap and unwrought powders:				
Austria	(5)	5	(5)	14
China	107	355	1,630	5,550
Finland	--	--	(5)	7
France	91	689	1,330	9,620
Germany	(5)	27	74	452
Hong Kong	--	--	(5)	10
India	--	--	(5)	2
Italy	--	--	1	14
Kazakhstan	--	--	260	843
Russia	301	985	1,460	4,970
Singapore	(5)	3	(5)	14
Spain	--	--	4	17
Switzerland	--	--	(5)	41
Taiwan	--	--	(5)	9
United Kingdom	147	899	1,710	10,500
Total	647	2,960	6,480	32,100

See footnotes at end of table.

TABLE 8--Continued
U.S. IMPORTS FOR CONSUMPTION OF CHROMIUM METAL IN 2003, BY GRADE AND BY COUNTRY¹

Grade and country	December		January-December ²	
	Gross weight (metric tons)	Value ³ (thousands)	Gross weight (metric tons)	Value ³ (thousands)
All grades:				
Austria	(5)	5	(5)	14
China	107	355	1,840	6,260
Finland	--	--	(5)	7
France	91	689	1,330	9,620
Germany	(5)	29	115	797
Hong Kong	--	--	(5)	10
India	--	--	(5)	2
Italy	--	--	1	14
Japan	31	430	231	2,500
Kazakhstan	--	--	334	1,070
Korea, Republic of	--	--	4	30
Malaysia	--	--	1	3
Russia	398	1,770	2,340	10,700
Singapore	(5)	3	1	19
Spain	--	--	4	17
Sweden	9	87	9	87
Switzerland	--	--	(5)	41
Taiwan	1	7	7	60
United Kingdom	148	964	2,360	13,900
Total	785	4,340	8,570	45,200

-- 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.

⁴Separate category reported starting May 2003.

⁵Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 9
U.S. TRADE OF STAINLESS STEEL, BY PRODUCT, IN 2003¹

Stainless steel product	December		January-December	
	Gross weight (metric tons)	Value ² (thousands)	Gross weight (metric tons)	Value ² (thousands)
Exports:				
Ingot	376	\$1,700	4,460	\$27,100
Flat-rolled (width > 600 mm)	14,600	26,400	170,000	338,000
Flat-rolled (width < 600 mm)	6,610	22,100	90,500	237,000
Bars and rods in irregular coils	246	823	2,480	9,340
Other bars and rods	1,120	5,980	16,700	84,600
Wire	559	3,800	8,320	52,400
Tubes, pipes, hollow profiles	2,730	13,500	34,800	147,000
Total	26,200	74,300	327,000	895,000
Stainless steel scrap	42,500	40,100	505,000	382,000
Grand total	68,800	114,000	832,000	1,280,000
Imports:				
Ingot	13,700	22,200	166,000	242,000
Flat-rolled (width > 600 mm)	21,000	39,200	246,000	422,000
Flat-rolled (width < 600 mm)	3,880	10,700	39,000	115,000
Bars and rods in irregular coils	1,870	3,630	32,200	54,000
Other bars and rods	3,600	9,110	56,300	129,000
Wire	2,840	8,360	31,100	96,000
Tubes, pipes, hollow profiles	6,320	25,100	68,300	266,000
Total	53,200	118,000	639,000	1,320,000
Stainless steel scrap	10,900	12,100	89,200	70,200
Grand total	64,100	130,000	728,000	1,390,000

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.