USGS
science for a changing world

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 OCTOBER 2003

On the basis of gross weight, consumption of chromium ferroalloys and metal in October 2003 increased 12% compared with consumption in September 2003, according to the U.S. Geological Survey.

Included in this Mineral Industry Surveys report are U.S. salient chromium statistics, U.S. government stockpile inventory of chromium materials in October 2003, consumption by end use, consumer stocks of chromium ferroalloys and metal at the end of October 2003, and U.S. foreign trade data for selected chromium-containing materials in September 2003.

Update

The Defense National Stockpile Center announced the sale in November of 148 metric tons of chromium metal valued at $547,909 (Defense National Stockpile Center, 2003).

Reference Cited

Defense National Stockpile Center, 2003, Stockpile accepts chromium metal bids: Defense National Stockpile Center, News Release DNSC-04-2389, November 26, 1 p.

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

(Metric tons, gross weight)

	2002	2003					
	January-December[2]	Second quarter	August	September	Third quarter	October	January-October[2]
Production:							
Stainless steel production[3]	2,180,000	570,000	184,000	174,000	520,000	204,000	1,830,000 [4]
Components of U.S. supply:							
Stainless steel scrap receipts	815,000	191,000	62,300	50,000	173,000	68,500	630,000
Stainless steel scrap consumption	1,190,000	267,000	88,100	75,300	247,000	90,300	884,000
Imports for consumption:							
Chromite ore	112,000	41,200	5,380	4,570	46,100	NA	149,000 [5]
Ferrochromium:							
More than 4% carbon	283,000	96,100	27,800	40,200	90,300	NA	283,000 [5]
More than 0.5%, but not more than 3% carbon	8,040	816	750	420	2,310	NA	4,730 [5]
Not more than 0.5% carbon	25,600	4,480	1,410	2,170	5,660	NA	16,400 [5]
Ferrochromium silicon	28,900	15,200	22	8,500	11,400	NA	29,900 [5]
Total ferroalloy imports	345,000	117,000	30,000	51,300	110,000	NA	334,000 [5]
Chromium metal[6]	7,430	2,540	556	672	2,080	NA	6,810 [5]
Stainless steel	752,000	168,000	48,200	52,500	155,000	NA	484,000 [5]
Stainless steel scrap	81,000	18,700	6,330	9,920	21,900	NA	56,800 [5]
Distribution of U.S. supply:							
Industry consumer, chromium ferroalloys and metal	384,000	95,700	28,000	26,100	81,100	29,100	300,000
Exports:							
Chromite ore	24,300	3,380	22,900	2,040	26,000	NA	31,100 [5]
Chromium ferroalloys:							
High-carbon ferrochromium	13,500	1,020	292	237	697	NA	2,300 [5]
Low-carbon ferrochromium	2,070	388	84	79	198	NA	1,030 [5]
Ferrochromium silicon	281	59	11	63	144	NA	203 [5]
Total ferroalloy exports	15,900	1,460	387	378	1,040	NA	3,530 [5]
Chromium metal	745	182	119	47	261	NA	653 [5]
Stainless steel	273,000	89,800	24,400	23,000	78,600	NA	244,000 [5]
Stainless steel scrap	342,000	101,000	40,500	31,300	119,000	NA	397,000 [5]
Stocks at end of period:							
Industry consumer, chromium ferroalloys and metal	13,900	XX	15,900	14,800	XX	16,200	XX
Government stockpile:							
Chromite ore	204,000	XX	154,000	153,000	XX	154,000	XX
Chromium ferroalloys	763,000	XX	705,000	700,000	XX	695,000	XX
Chromium metal	7,220	XX	7,150	7,100	XX	7,120	XX

NA Not available. XX Not applicable.

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

[2]May include revised data.

[3]Data 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.

[4]Includes revised data which is not broken out by specific month.

[5]Includes January through September data; October data not available.

[6]Includes waste and scrap and other.

TABLE 2

U.S. REPORTED CONSUMPTION AND STOCKS OF CHROMIUM PRODUCTS IN 2003[1]

(Metric tons, gross weight unless otherwise noted)

	September	October	January-October[2]
Consumption by end use:			
Alloy uses:			
Iron alloys:			
Steel:			
Carbon steel	303	289	3,040
High-strength low-alloy steel	545	552	5,450
Stainless and heat-resisting steel	21,800	245,000	257,000
Full alloy steel	1,310	1,310	14,000
Electrical steel	W	W	W
Tool steel	473	422	4,720
Unspecified steel	W	W	W
Cast irons	W	W	W
Superalloys	611	642	6,480
Other alloys[3]	93	74	713
Total	26,100	29,100	300,000
Total, chromium content	15,300	16,800	177,000
Consumption by material:			
Low-carbon ferrochromium	1,760	1,660	17,800
High-carbon ferrochromium	20,600	23,500	245,000
Ferrochromium silicon	3,260	3,410	32,400
Chromium metal	299	335	3,260
Chromite ore	W	W	W
Chromium-aluminum alloy	36	31	352
Other chromium materials	W	W	W
Total	26,100	29,100	300,000
Total, chromium content	15,300	16,800	177,000
Consumer stocks:			
Low-carbon ferrochromium	1,240	1,280	XX
High-carbon ferrochromium	W	W	XX
Ferrochromium silicon	1,110	1,350	XX
Chromium metal	156	192	XX
Chromite ore	W	W	XX
Chromium-aluminum alloy	33	40	XX
Other chromium materials	W	W	XX
Total	14,800	16,200	XX
Total, chromium content	8,850	9,500	XX

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

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

[2]May include revised data.

[3]Includes 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	
2002:					
October	78,300	127,000 [3]	536,000	233,000	7,220
November	78,300	127,000	535,000	232,000	7,220
December	78,300	126,000	531,000	232,000	7,220
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]

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

[2]These 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.

[3]The 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 METAL[1]

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:							
September	458	$171	664	394	$589	45	$651
October	2,490	842	9,880	6,460	4,650	72	625
November	456	122	520	307	462	69	671
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
January-September	31,100	2,920	3,530	2,080	3,700	653	7,480

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

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

[3]Includes 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 METAL[1]

(Metric tons)

	2002	2003		
	January-December[2]	August	September	January-September[2]
Chromite ore:				
Not more than 40% chromic oxide:				
Gross weight	1,080	--	26	103
Chromic oxide content	370	--	12	36
More than 40% but less than 46% chromic oxide:				
Gross weight	10,600	44	49	729
Chromic oxide content	4,470	20	22	336
46% or more chromic oxide:				
Gross weight	100,000	5,330	4,490	148,000
Chromic oxide content	46,700	2,510	2,100	68,900
Total, all grades:				
Gross weight	112,000	5,380	4,570	149,000
Chromic oxide content	51,600	2,530	2,130	69,200
Ferrochromium:				
Low-carbon:[3]				
Not more than 0.5%:				
Gross weight	25,600	1,410	2,170	16,400
Chromium content	17,000	867	1,510	11,200
More than 0.5% but not more than 3%:				
Gross weight	8,040	750	420	4,730
Chromium content	4,960	417	282	3,000
Total, low-carbon:				
Gross weight	33,600	2,160	2,590	21,100
Chromium content	21,900	1,280	1,800	14,200
High-carbon:[4]				
Gross weight	283,000	27,800	40,200	283,000
Chromium content	169,000	14,200	25,400	163,000
Total, all grades:				
Gross weight	316,000	30,000	42,800	304,000
Chromium content	191,000	15,500	27,200	177,000
Chromium metal:				
Unwrought powders	776	133	124	1,480
Waste and scrap	83	7	(5)	250
Other than waste and scrap amd unwrought powders	6,570	416	547	5,080
Total, all grades	7,430	556	672	6,810

-- Zero.

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

[2]May include revised data.

[3]Ferrochromium containing not more than 3% carbon.

[4]Ferrochromium containing more than 4% carbon.

[5]Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 6

U.S. IMPORTS FOR CONSUMPTION OF CHROMITE ORE IN 2003, BY GRADE AND BY COUNTRY[1]

Grade and country	September			January-September[2]		
	Gross weight (metric tons)	Cr_2O_3 (metric tons)	Value[3] (thousands)	Gross weight (metric tons)	Cr_2O_3 (metric tons)	Value[3] (thousands)
Not more than 40% chromic oxide, South Africa	26	12	$4	103	36	$34
More than 40% but less than 46% chromic oxide, South Africa	49	22	7	729	336	110
46% or more chromic oxide:						
Germany	--	--	--	20	13	8
South Africa	4,490	2,100	304	148,000	68,800	6,980
Total	4,490	2,100	304	148,000	68,900	6,990
All grades:						
Germany	--	--	--	20	13	8
South Africa	4,570	2,130	315	149,000	69,200	7,130
Total	4,570	2,130	315	149,000	69,200	7,130

-- Zero.

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

[2]May include revised data.

[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.

Source: U.S. Census Bureau.

TABLE 7

U.S. IMPORTS FOR CONSUMPTION OF FERROCHROMIUM IN 2003, BY GRADE AND BY COUNTRY[1]

Grade and country	September			January-September[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
Kazakhstan	26,700	18,500	$17,800	98,300	67,800	56,500
Russia	1,160	739	698	2,070	1,410	1,450
South Africa	12,300	6,150	4,670	160,000	79,800	53,700
Sweden	12	7	7	12	7	7
Zimbabwe	--	--	--	22,900	13,900	8,920
Total	40,200	25,400	23,200	283,000	163,000	121,000
Low-carbon ferrochromium:[5]						
More than 0.5% but not more than 3% carbon:						
Kazakhstan	300	207	255	800	552	673
Russia	20	15	34	31	20	46
South Africa	100	61	57	3,900	2,430	1,890
Total	420	282	346	4,730	3,000	2,610
Not more than 0.5% carbon:						
China	3	2	4	78	53	96
Germany	978	685	1,660	3,930	2,760	7,240
Japan	160	111	337	1,370	951	2,840
Kazakhstan	219	153	204	1,530	1,060	1,340
Russia	813	562	714	9,220	6,230	8,870
South Africa	--	--	--	72	48	95
Taiwan	--	--	--	17	9	20
Turkey	--	--	--	140	94	206
Total	2,170	1,510	2,920	16,400	11,200	20,700

See footnotes at end of table.

TABLE 7--Continued

U.S. IMPORTS FOR CONSUMPTION OF FERROCHROMIUM IN 2003, BY GRADE AND BY COUNTRY[1]

Grade and country	September			January-September[2]		
	Gross weight (metric tons)	Chromium content (metric tons)	Value[3] (thousands)	Gross weight (metric tons)	Chromium content (metric tons)	Value[3] (thousands)
All grades:						
China	3	2	$4	98	67	$121
Germany	978	685	1,660	3,930	2,760	7,240
Japan	160	111	337	1,370	951	2,840
Kazakhstan	27,300	18,900	18,300	101,000	69,400	58,600
Russia	1,990	1,320	1,450	11,300	7,660	10,400
South Africa	12,400	6,210	4,720	164,000	82,300	55,700
Sweden	12	7	7	12	7	7
Taiwan	--	--	--	17	9	20
Turkey	--	--	--	140	94	206
Zimbabwe	--	--	--	22,900	13,900	8,920
Total	42,800	27,200	26,500	304,000	177,000	144,000

-- Zero.

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

[2]May included revised data.

[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 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 COUNTRY[1]

Grade and country	September		January-September[2]	
	Gross weight (metric tons)	Value[3] (thousands)	Gross weight (metric tons)	Value[3] (thousands)
Unwrought powders:[4]				
China	40	$135	163	$562
France	--	--	1	8
Germany	23	87	30	168
Japan	(5)	9	136	1,450
Kazakhstan	--	--	74	229
Russia	41	139	455	3,230
United Kingdom	20	141	618	3,060
Total	124	510	1,480	8,700
Waste and scrap:				
China	--	--	1	7
Germany	--	--	11	173
Japan	--	--	22	152
Korea, Republic of	(5)	3	3	18
Malaysia	--	--	1	3
Russia	--	--	202	753
Singapore	--	--	1	5
Taiwan	--	--	3	31
United Kingdom	--	--	5	61
Total	(5)	3	250	1,200

See footnotes at end of table.

TABLE 8--Continued

U.S. IMPORTS FOR CONSUMPTION OF CHROMIUM METAL IN 2003, BY GRADE AND BY COUNTRY[1]

Grade and country	September		January-September[2]	
	Gross weight (metric tons)	Value[3] (thousands)	Gross weight (metric tons)	Value[3] (thousands)
Other than waste and scrap and unwrought powders:				
Austria	--	--	(5)	$8
China	140	$456	1,280	4,370
Finland	--	--	(5)	7
France	110	732	1,130	8,150
Germany	--	--	74	401
India	--	--	(5)	2
Italy	--	--	(5)	3
Kazakhstan	--	--	260	843
Russia	161	530	1,040	3,570
Singapore	--	--	(5)	11
Spain	--	--	4	17
Switzerland	--	--	(5)	28
Taiwan	--	--	(5)	4
United Kingdom	136	796	1,290	7,940
Total	547	2,510	5,080	25,300
All grades:				
Austria	--	--	(5)	8
China	180	591	1,440	4,930
Finland	--	--	(5)	7
France	110	732	1,130	8,150
Germany	23	87	114	742
India	--	--	(5)	2
Italy	--	--	(5)	3
Japan	(5)	9	158	1,600
Kazakhstan	--	--	334	1,070
Korea, Republic of	(5)	3	3	18
Malaysia	--	--	1	3
Russia	202	668	1,700	7,560
Singapore	--	--	1	16
Spain	--	--	4	17
Switzerland	--	--	(5)	28
Taiwan	--	--	4	35
United Kingdom	156	937	1,910	11,100
Total	672	3,030	6,810	35,300

-- Zero.

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

[2]May include revised data.

[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]Separate category reported starting May 2003.

[5]Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 9

U.S. TRADE OF STAINLESS STEEL, BY PRODUCT, IN 2003[1]

Stainless steel product	September		January-September	
	Gross weight (metric tons)	Value[2] (thousands)	Gross weight (metric tons)	Value[2] (thousands)
Exports:				
Ingot	321	$1,390	3,350	$21,800
Flat-rolled (width > 600 mm)	9,770	20,100	127,000	255,000
Flat-rolled (width < 600 mm)	7,540	19,100	68,400	171,000
Bars and rods in irregular coils	162	790	1,710	5,970
Other bars and rods	1,120	5,760	12,800	64,700
Wire	662	4,040	6,380	39,900
Tubes, pipes, hollow profiles	3,440	13,000	24,900	102,000
Total	23,000	64,200	244,000	660,000
Stainless steel scrap	31,300	29,300	397,000	282,000
Grand total	54,300	93,500	642,000	942,000
Imports:				
Ingot	13,900	20,600	131,000	185,000
Flat-rolled (width > 600 mm)	20,600	35,300	181,000	302,000
Flat-rolled (width < 600 mm)	2,950	8,510	29,400	86,500
Bars and rods in irregular coils	1,700	3,060	26,200	43,200
Other bars and rods	4,440	10,300	44,700	101,000
Wire	2,480	7,690	23,100	71,000
Tubes, pipes, hollow profiles	6,440	23,600	49,100	188,000
Total	52,500	109,000	484,000	977,000
Stainless steel scrap	9,920	7,620	56,800	38,700
Grand total	62,500	117,000	541,000	1,020,000

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

[2]Export 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.