

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) 648-7987
Fax: (703) 648-7975
E-mail: jkrisand@usgs.gov

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

CHROMIUM IN NOVEMBER 2006

On the basis of gross weight, consumption of chromium ferroalloys and metal in November 2006 increased slightly compared with consumption in October 2006, 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 November 2006, consumption by end use and consumer stocks of chromium ferroalloys and metal at the end of November 2006, and U.S. foreign trade data for selected chromium-containing materials in October 2006.

Update

The Defense National Stockpile Center (DNSC) announced the award of 33,112 metric tons (t) of ferrochromium (25,310 t of high-carbon ferrochromium and 7,802 t of low-carbon

ferrochromium) at a value of \$30 million or \$0.41 per pound gross weight. DNSC announced the sale of 5,897 t of ferrochromium (4,536 t of high-carbon ferrochromium and 1,361 t of low-carbon ferrochromium) at a value of \$8.2 million or \$0.63 per pound gross weight (Defense National Stockpile Center, 2006, 2007).

References Cited

- Defense National Stockpile Center, 2006, Stockpile accepts ferrochromium offer: Defense National Stockpile Center, News Release DNSC-07-2826, December 21, 1 p.
- Defense National Stockpile Center, 2007, Stockpile announces BOA sales for December 2006: Defense National Stockpile Center, News Release DNSC-07-2827-2, January 8, 1 p.

TABLE 1
U.S. SALIENT CHROMIUM STATISTICS¹

(Metric tons, gross weight)

	2005	2006				
	January-December	September	Third quarter ²	October	November	January-November ²
Production:						
Stainless steel production ³	2,240,000	220,000	629,000	212,000	199,000	2,310,000 ⁴
Components of U.S. supply:						
Stainless steel scrap receipts	731,000	NA	NA	NA	NA	474,000 ⁵
Stainless steel scrap consumption	1,060,000	NA	NA	NA	NA	699,000 ⁵
Imports for consumption:						
Chromite ore	165,000	389	40,100	21,700	NA	118,000 ⁶
Ferrochromium:						
More than 4% carbon	398,000	39,200	93,200	38,200	NA	334,000 ⁶
More than 0.5%, but not more than 3% carbon	3,530	--	--	--	NA	10 ⁶
Not more than 0.5% carbon	43,000	2,430	6,140	1,170	NA	23,700 ⁶
Ferrochromium silicon	33,700	3,900	14,100	1,040	NA	32,700 ⁶
Total ferroalloy imports	478,000	45,500	113,000	40,400	NA	390,000 ⁶
Chromium metal ⁷	11,000	753	2,510	1,090	NA	8,520 ⁶
Stainless steel	770,000	65,000	228,000	80,000	NA	725,000 ⁶
Stainless steel scrap	111,000	15,300	57,400	14,100	NA	155,000 ⁶
Distribution of U.S. supply:						
Consumption, industry, chromium ferroalloys and metal	439,000 ^r	35,200	108,000	34,400	34,500	390,000
Exports:						
Chromite ore	42,600	2,280	18,000	445	NA	30,900 ⁶
Chromium ferroalloys:						
High-carbon ferrochromium	30,700	273	7,700	614	NA	16,300 ⁶
Low-carbon ferrochromium	5,460	1,170	4,680	1,440	NA	9,170 ⁶
Ferrochromium silicon	147	--	21	--	NA	224 ⁶
Total ferroalloy exports	36,300	1,440	12,400	2,050	NA	25,700 ⁶
Chromium metal	1,020	109	313	95	NA	869 ⁶
Stainless steel	371,000	35,100	95,800	32,000	NA	349,000 ⁶
Stainless steel scrap	585,000	901,000	984,000	35,100	NA	1,270,000 ⁶
Stocks at end of period:						
Consumer, industry, chromium ferroalloys and metal	XX	12,300	XX	11,700	12,500	XX
Government stockpile:						
Chromium ferroalloys	XX	399,000	XX	395,000	387,000	XX
Chromium metal	XX	5,280	XX	5,280	5,280	XX

^rRevised. NA Not available. XX Not applicable. -- Zero.

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 are not broken out by specific month.

⁵Includes January to August data; September to November data not available.

⁶Includes January to October data; November data not available.

⁷Includes waste and scrap and other.

TABLE 2
U.S. REPORTED CONSUMPTION AND STOCKS OF CHROMIUM PRODUCTS IN
2006^{1,2}

(Metric tons, gross weight unless otherwise noted)

	October	November	January- November ³
Consumption by end use:			
Alloy uses:			
Iron alloys:			
Steel:			
Carbon steel	289	298	3,330
High-strength low-alloy steel	514	515	5,890
Stainless and heat-resisting steel	29,800	29,800	338,000
Full alloy steel	1,640 ^r	1,640	17,700
Electrical steel	W	W	W
Tool steel	414	424	4,500
Unspecified steel	W	W	W
Cast irons	W	W	W
Superalloys	825	826	9,470
Other alloys ⁴	52	57	585
Total	34,400	34,500	390,000
Total, chromium content	20,400	20,300 ⁵	229,000
Consumption by material:			
Low-carbon ferrochromium	1,910 ^r	1,920	21,100
High-carbon ferrochromium	29,000	29,200	330,000
Ferrochromium silicon	3,040	2,990	33,400
Chromium metal	415	411	4,660
Chromite ore	W	W	W
Chromium-aluminum alloy	25	W	253
Other chromium materials	W	W	W
Total	34,400	34,500	390,000
Total, chromium content	20,400	20,300 ⁵	229,000
Consumer stocks:			
Low-carbon ferrochromium	1,940 ^r	1,990	XX
High-carbon ferrochromium	8,470	9,180	XX
Ferrochromium silicon	1,060	1,100	XX
Chromium metal	188	197	XX
Chromite ore	W	W	XX
Chromium-aluminum alloy	26	28	XX
Other chromium materials	W	W	XX
Total	11,700	12,500	XX
Total, chromium content	7,050 ^r	7,440 ⁵	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.

²Includes estimates.

³May include revised data.

⁴Includes welding and alloy hard-facing rods and materials; wear- and corrosion-resistant alloys; and aluminum, copper, magnetic, nickel, and other alloys.

⁵Currently under investigation by the U.S. Geological Survey.

TABLE 3
U.S. GOVERNMENT STOCKPILE INVENTORY OF
CHROMIUM MATERIALS^{1,2}

(Metric tons)

Period	Chromium ferroalloys		Chromium metal
	High-carbon ferro-chromium	Low-carbon ferro-chromium	
2005:			
November	320,000	174,000	6,190
December	318,000	171,000	6,190
2006:			
January	312,000	169,000	6,190
February	308,000	166,000	5,590
March	276,000	145,000	5,590
April	275,000	145,000	5,590
May	271,000	139,000	5,280
June	270,000	139,000	5,280
July	270,000	137,000	5,280
August	267,000	137,000	5,280
September	265,000	135,000	5,280
October	263,000	133,000	5,280
November	255,000	132,000	5,280

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.

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)
2005:							
October	1,320	\$600	577	355	\$828	39	\$1,410
November	835	435	1,310	877	1,490	120	2,120
December	515	203	671	408	923	125	1,930
January-December	42,600	9,940	36,300	23,700	38,900	1,020	16,900
2006:							
January	462	199	1,100	676	1,300	69	1,600
February	1,830	344	739	447	893	85	2,100
March	618	285	733	447	936	140	2,350
April	331	163	708	403	982	43	1,370
May	1,080	277	1,710	937	1,670	58	1,440
June	8,160	825	6,300	3,750	5,660	66	1,380
July	8,780	725	8,570	5,170	7,060	95	1,800
August	6,940	5,550	2,380	1,410	3,000	109	2,270
September	2,280	309	1,440	801	2,060	109	1,910
October	445	157	2,050	1,240	2,360	95	1,830
January-October	30,900	8,830	25,700	15,300	25,900	869	18,000

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)

	2005	2006			January- October ²
	January- December ²	August	September	October	
Chromite ore:					
Not more than 40%:					
Gross weight	36	--	--	46	54
Chromic oxide content	11	--	--	18	20
More than 40% but less than 46% chromic oxide:					
Gross weight	29,700	3,000	27	24	3,690
Chromic oxide content	13,700	1,380	12	11	1,690
46% or more chromic oxide:					
Gross weight	135,000	12,400	362	21,700	115,000
Chromic oxide content	63,600	6,110	178	10,500	61,600
Total, all grades:					
Gross weight	165,000	15,400	389	21,700	118,000
Chromic oxide content	77,300	7,490	190	10,600	63,400
Ferrochromium:					
Low-carbon: ³					
Not more than 0.5%:					
Gross weight	43,000	823	2,430	1,170	23,700
Chromium content	29,300	577	1,710	816	16,400
More than 0.5% but not more than 3%:					
Gross weight	3,530	--	--	--	10
Chromium content	2,300	--	--	--	7
Total, low-carbon:					
Gross weight	46,600	823	2,430	1,170	23,800
Chromium content	31,600	577	1,710	816	16,400
High-carbon: ⁴					
Gross weight	398,000	31,400	39,200	38,200	334,000
Chromium content	232,000	16,800	23,500	20,300	196,000
Total, all grades:					
Gross weight	444,000	32,200	41,600	39,300	358,000
Chromium content	264,000	17,400	25,200	21,100	212,000
Chromium metal:					
Unwrought powders	1,050 ^r	67	230	163	1,030
Waste and scrap	57 ^r	6	--	--	63
Other than waste and scrap and unwrought powders	9,850 ^r	864	523	927	7,430
Total, all grades	11,000	937	753	1,090	8,520

^rRevised. -- 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 FERROCHROMIUM IN 2006, BY GRADE AND BY COUNTRY¹

Grade and country	October			January-October 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						
India	--	--	--	42	34	\$34
Kazakhstan	38	26	\$58	83,300	58,000	71,600
Russia	4,740	3,000	3,350	39,700	25,600	26,600
South Africa	24,100	11,700	14,300	162,000	83,200	96,900
Sweden	--	--	--	557	374	633
Tajikistan	22	15	33	101	69	140
Zimbabwe	9,270	5,510	7,070	48,300	28,300	34,600
Total	38,200	20,300	24,800	334,000	196,000	231,000
Low-carbon ferrochromium:⁵						
More than 0.5% but not more than 3%, China	--	--	--	10	7	16
Not more than 0.5% carbon:						
Brazil	--	--	--	19	14	47
China	52	35	96	590	393	976
Germany	400	281	852	5,200	3,640	11,200
Japan	120	84	414	2,360	1,640	7,490
Kazakhstan	--	--	--	2,580	1,790	3,560
Mexico	--	--	--	20	13	65
Russia	554	391	803	11,000	7,720	15,300
South Africa	--	--	--	1,800	1,060	1,410
Sweden	--	--	--	35	25	121
Turkey	40	26	108	100	63	269
Total	1,170	816	2,270	23,700	16,400	40,400
All grades:						
Brazil	--	--	--	19	14	47
China	52	35	96	600	400	992
Germany	400	281	852	5,200	3,640	11,200
India	--	--	--	42	34	34
Japan	120	84	414	2,360	1,640	7,490
Kazakhstan	38	26	58	85,900	59,800	75,100
Mexico	--	--	--	20	13	65
Russia	5,290	3,390	4,160	50,700	33,300	41,900
South Africa	24,100	11,700	14,300	164,000	84,300	98,300
Sweden	--	--	--	592	399	754
Tajikistan	22	15	33	101	69	140
Turkey	40	26	108	100	63	269
Zimbabwe	9,270	5,510	7,070	48,300	28,300	34,600
Total	39,300	21,100	27,100	358,000	212,000	271,000

-- 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 7
U.S. IMPORTS FOR CONSUMPTION OF CHROMIUM METAL IN 2006,
BY GRADE AND BY COUNTRY¹

Grade and country	October		January-October ²	
	Gross weight (metric tons)	Value ³ (thousands)	Gross weight (metric tons)	Value ³ (thousands)
Unwrought powders:				
Canada	3	\$22	3	\$22
China	12	245	189	2,560
France	--	--	4	30
Germany	--	--	29	350
Japan	19	514	132	5,240
Netherlands	--	--	6	31
Russia	100	669	557	5,390
Spain	--	--	19	96
Sweden	--	--	1	4
United Kingdom	29	304	93	1,140
Total	163	1,750	1,030	14,900
Waste and scrap:				
Germany	--	--	6	223
Japan	--	--	12	217
Singapore	--	--	43	315
Taiwan	--	--	1	29
Total	--	--	62	783
Other than waste and scrap and unwrought powders:				
China	331	1,920	1,910	12,400
France	305	2,640	2,090	18,400
Germany	3	56	36	550
Japan	(4)	9	24	100
Malaysia	--	--	6	24
Netherlands	--	--	24	131
Russia	178	1,240	1,820	12,100
Singapore	--	--	(4)	7
Spain	--	--	236	1,290
Taiwan	1	5	1	5
United Kingdom	109	957	1,280	9,940
Total	927	6,830	7,430	54,900
All grades:				
Canada	3	22	3	22
China	343	2,170	2,100	14,900
France	305	2,640	2,100	18,400
Germany	3	56	70	1,120
Japan	19	523	168	5,560
Malaysia	--	--	6	24
Netherlands	--	--	30	162
Russia	278	1,910	2,380	17,500
Singapore	--	--	43	322
Spain	--	--	255	1,390
Sweden	--	--	1	4
Taiwan	1	5	2	34
United Kingdom	138	1,260	1,370	11,100
Total	1,090	8,580	8,520	70,500

-- 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 ½ unit.

Source: U.S. Census Bureau.

TABLE 8
U.S. STAINLESS STEEL TRADE, BY PRODUCT, IN 2006¹

Stainless steel product	October		January-October	
	Gross weight (metric tons)	Value ² (thousands)	Gross weight (metric tons)	Value ² (thousands)
Exports:				
Ingot	1,050	\$5,340	9,520	\$45,300
Flat-rolled (width > 600 mm)	16,400	52,300	148,000	415,000
Flat-rolled (width < 600 mm)	7,470	33,200	81,300	329,000
Bars and rods in irregular coils	989	3,970	9,590	40,800
Other bars and rods	2,830	20,600	27,600	179,000
Wire	634	4,840	6,000	43,100
Tubes, pipes, hollow profiles	2,580	20,600	66,600	234,000
Total	32,000	141,000	349,000	1,290,000
Stainless steel scrap	35,100	71,400	1,270,000 ³	579,000
Grand total	67,000	212,000	1,620,000	1,860,000
Imports:				
Ingot	10,900	38,100	110,000	328,000
Flat-rolled (width > 600 mm)	37,200	136,000	343,000	950,000
Flat-rolled (width < 600 mm)	3,860	17,800	37,400	147,000
Bars and rods in irregular coils	2,620	10,200	22,300	68,400
Other bars and rods	10,500	47,100	81,300	339,000
Wire	4,170	21,200	36,700	168,000
Tubes, pipes, hollow profiles	10,700	63,400	93,900	563,000
Total	80,000	334,000	725,000	2,560,000
Stainless steel scrap	14,100	19,900	155,000	181,000
Grand total	94,200	354,000	880,000	2,740,000

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.

³Submitted to the U.S. Census Bureau for investigation.

Source: U.S. Census Bureau.