

Mineral Industry Surveys

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CHROMIUM IN SEPTEMBER 2006

On the basis of gross weight, consumption of chromium ferroalloys and metal in September 2006 decreased 4% compared with consumption in August 2006; consumption in the third quarter 2006 increased slightly compared with consumption in the second quarter 2006 and increased 4% compared with consumption in the third quarter 2005, 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 September 2006, consumption by end use and consumer stocks of chromium ferroalloys and metal at the end of September 2006, and U.S. foreign trade data for selected chromium-containing materials in August 2006.

Update

The Defense National Stockpile Center (DNSC) announced that 3,266 metric tons (t) of ferrochromium (2,359 t of high-carbon ferrochromium and 907 t of low-carbon ferrochromium) was sold in October at a value of \$3.4 million or \$0.472 per pound gross weight (Defense National Stockpile Center, 2006).

Reference Cited

Defense National Stockpile Center, 2006, Stockpile announces ferrochromium BOA sales for October 2006: Defense National Stockpile Center, News Release DNSC-07-2811, November 6, 1 p.

TABLE 1
U.S. SALIENT CHROMIUM STATISTICS¹

(Metric tons, gross weight)

	2005	2006				January- September ²
	January- December	Second quarter ²	July	August	September	
Production:						
Stainless steel production ³	2,240,000	668,000	190,000	219,000	220,000	1,890,000 ⁴
Components of U.S. supply:						
Stainless steel scrap receipts	731,000	180,000	NA	NA	NA	346,000 ⁵
Stainless steel scrap consumption	1,060,000	265,000	NA	NA	NA	508,000 ⁵
Imports for consumption:						
Chromite ore	165,000	31,100	24,400	15,400	NA	96,400 ⁶
Ferrochromium:						
More than 4% carbon	398,000	128,000	22,700	31,400	NA	257,000 ⁶
More than 0.5%, but not more than 3% carbon	3,530	10	--	--	NA	10 ⁶
Not more than 0.5% carbon	43,000	10,300	2,890	823	NA	20,100 ⁶
Ferrochromium silicon	33,700	9,550	3,520	6,660	NA	27,700 ⁶
Total ferroalloy imports	478,000	148,000	29,100	38,900	NA	305,000 ⁶
Chromium metal ⁷	11,000	2,400	817	937	NA	6,470 ⁶
Stainless steel	770,000	219,000	80,500	82,200	NA	579,000 ⁶
Stainless steel scrap	111,000	51,800	20,500	21,600	NA	125,000 ⁶
Distribution of U.S. supply:						
Consumption, industry, chromium ferroalloys and metal	431,000 [†]	107,000	35,400	36,800	35,400	321,000
Exports:						
Chromite ore	42,600	9,560	8,780	6,940	NA	28,200 ⁶
Chromium ferroalloys:						
High-carbon ferrochromium	30,700	6,300	6,800	625	NA	15,500 ⁶
Low-carbon ferrochromium	5,460	2,220	1,750	1,760	NA	6,560 ⁶
Ferrochromium silicon	147	195	21	--	NA	224 ⁶
Total ferroalloy exports	36,300	8,720	8,570	2,380	NA	22,200 ⁶
Chromium metal	1,020	167	95	109	NA	665 ⁶
Stainless steel	371,000	103,000	27,200	33,500	NA	282,000 ⁶
Stainless steel scrap	585,000	118,000	41,200	41,700	NA	331,000 ⁶
Stocks at end of period:						
Consumer, industry, chromium ferroalloys and metal	XX	XX	11,200	12,400	12,300	XX
Government stockpile:						
Chromium ferroalloys	XX	XX	406,000	404,000	399,000	XX
Chromium metal	XX	XX	5,280	5,280	5,280	XX

[†]Revised. 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 June data; July to September data not available.

⁶Includes January to August data; September 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)

	August	September	January- September ³
Consumption by end use:			
Alloy uses:			
Iron alloys:			
Steel:			
Carbon steel	325	286	2,750
High-strength low-alloy steel	526	513	4,800
Stainless and heat-resisting steel	32,000	30,700	279,000
Full alloy steel	1,700 ^r	1,710	14,500
Electrical steel	W	W	W
Tool steel	408	399	3,660
Unspecified steel	W	W	W
Cast irons	W	W	W
Superalloys	851	826	7,810
Other alloys ⁴	54	55	476
Total	36,800	35,400	321,000
Total, chromium content	21,700	20,800	188,000
Consumption by material:			
Low-carbon ferrochromium	2,010 ^r	1,930	17,200
High-carbon ferrochromium	31,300	29,900	272,000
Ferrochromium silicon	3,060	3,120	27,400
Chromium metal	418	415	3,840
Chromite ore	W	W	W
Chromium-aluminum alloy	24	24	205
Other chromium materials	W	W	W
Total	36,800	35,400	321,000
Total, chromium content	21,700	20,800	188,000
Consumer stocks:			
Low-carbon ferrochromium	1,980	1,970	XX
High-carbon ferrochromium	9,070 ^r	9,020	XX
Ferrochromium silicon	1,120	1,080	XX
Chromium metal	183	181	XX
Chromite ore	W	W	XX
Chromium-aluminum alloy	27	28	XX
Other chromium materials	W	W	XX
Total	12,400	12,300	XX
Total, chromium content	7,410	7,350	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.

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:			
September	327,000	176,000	6,210
October	323,000	175,000	6,190
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

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:							
August	6,060	\$1,420	584	356	\$789	130	\$1,560
September	7,760	1,320	577	356	680	115	1,940
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
January-August	28,200	8,360	22,200	13,200	21,500	665	14,300

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- August ²
	January- December ²	June	July	August	
Chromite ore:					
Not more than 40%:					
Gross weight	36	--	8	--	8
Chromic oxide content	11	--	2	--	2
More than 40% but less than 46% chromic oxide:					
Gross weight	29,700	48	48	3,000	3,640
Chromic oxide content	13,700	22	22	1,380	1,670
46% or more chromic oxide:					
Gross weight	135,000	1,960	24,300	12,400	92,700
Chromic oxide content	63,600	929	11,300	6,110	50,900
Total, all grades:					
Gross weight	165,000	2,000	24,400	15,400	96,400
Chromic oxide content	77,300	951	11,300	7,490	52,600
Ferrochromium:					
Low-carbon: ³					
Not more than 0.5%:					
Gross weight	43,000	3,250	2,890	823	20,100
Chromium content	29,300	2,190	2,010	577	13,800
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	3,250	2,890	823	20,200
Chromium content	31,600	2,190	2,010	577	13,800
High-carbon: ⁴					
Gross weight	398,000	56,200	22,700	31,400	257,000
Chromium content	232,000	31,500	15,600	16,800	152,000
Total, all grades:					
Gross weight	444,000	59,500	25,500	32,200	277,000
Chromium content	264,000	33,700	17,600	17,400	166,000
Chromium metal:					
Unwrought powders	1,060	65	30	67	639
Waste and scrap	63	11	2	6	63
Other than waste and scrap and unwrought powders	9,830	840	785	864	5,760
Total, all grades	11,000	916	817	937	6,470

-- 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	August			January-August 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	2,420	1,670	\$2,240	66,500	46,300	55,800
Russia	768	496	546	30,600	19,800	20,000
South Africa	19,700	9,720	11,700	121,000	63,300	72,600
Sweden	38	27	58	538	361	603
Tajikistan	38	26	52	81	56	111
Zimbabwe	8,410	4,900	6,220	37,500	22,000	26,600
Total	31,400	16,800	20,800	257,000	152,000	176,000
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	82	55	157	538	358	880
Germany	520	366	1,120	4,300	3,010	9,470
Japan	100	69	342	2,120	1,470	6,670
Kazakhstan	5	4	6	2,080	1,450	2,820
Mexico	--	--	--	20	13	65
Russia	80	59	191	9,180	6,400	12,500
South Africa	--	--	--	1,800	1,060	1,410
Sweden	16	12	53	35	25	121
Turkey	20	13	54	60	38	161
Total	823	577	1,920	20,100	13,800	34,200
All grades:						
Brazil	--	--	--	19	14	47
China	82	55	157	548	365	895
Germany	520	366	1,120	4,300	3,010	9,470
India	--	--	--	42	34	34
Japan	100	69	342	2,120	1,470	6,670
Kazakhstan	2,420	1,670	2,250	68,600	47,700	58,600
Mexico	--	--	--	20	13	65
Russia	848	554	738	39,800	26,200	32,500
South Africa	19,700	9,720	11,700	123,000	64,300	74,000
Sweden	54	38	111	573	386	723
Tajikistan	38	26	52	81	56	111
Turkey	20	13	54	60	38	161
Zimbabwe	8,410	4,900	6,220	37,500	22,000	26,600
Total	32,200	17,400	22,700	277,000	166,000	210,000

-- 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	August		January-August ²	
	Gross weight (metric tons)	Value ³ (thousands)	Gross weight (metric tons)	Value ³ (thousands)
Unwrought powders:				
China	12	\$245	165	\$2,070
France	--	--	4	30
Germany	--	--	26	332
Japan	14	539	113	4,730
Netherlands	--	--	6	31
Russia	41	333	305	3,190
Spain	--	--	19	96
Sweden	--	--	1	4
United Kingdom	(4)	33	1	321
Total	67	1,150	639	10,800
Waste and scrap:				
Germany	2	95	6	223
Japan	(4)	7	12	217
Mexico	--	--	1	6
Singapore	4	25	43	315
Taiwan	--	--	1	29
Total	6	127	63	789
Other than waste and scrap and unwrought powders:				
China	337	2,130	1,530	10,100
France	296	2,660	1,710	15,100
Germany	2	31	24	330
Japan	17	23	21	67
Malaysia	6	24	6	24
Netherlands	12	63	24	131
Russia	118	767	1,400	9,320
Spain	--	--	23	111
United Kingdom	77	614	1,020	7,780
Total	864	6,310	5,760	43,000
All grades:				
China	349	2,380	1,690	12,200
France	296	2,660	1,720	15,200
Germany	4	126	55	885
Japan	31	569	146	5,010
Malaysia	6	24	6	24
Mexico	--	--	1	6
Netherlands	12	63	30	162
Russia	159	1,100	1,710	12,500
Singapore	4	25	43	315
Spain	--	--	41	207
Sweden	--	--	1	4
Taiwan	--	--	1	29
United Kingdom	77	646	1,020	8,100
Total	937	7,590	6,470	54,600

-- 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	August		January-August	
	Gross weight (metric tons)	Value ² (thousands)	Gross weight (metric tons)	Value ² (thousands)
Exports:				
Ingot	1,140	\$4,660	7,420	\$34,300
Flat-rolled (width > 600 mm)	16,500	49,300	113,000	307,000
Flat-rolled (width < 600 mm)	8,560	35,900	66,200	264,000
Bars and rods in irregular coils	761	4,120	7,220	31,200
Other bars and rods	2,630	18,600	21,600	136,000
Wire	712	5,200	4,880	34,800
Tubes, pipes, hollow profiles	3,260	21,400	61,200	191,000
Total	33,500	139,000	282,000	1,000,000
Stainless steel scrap	41,700	53,500	331,000	438,000
Grand total	75,200	193,000	613,000	1,440,000
Imports:				
Ingot	10,700	39,100	90,300	260,000
Flat-rolled (width > 600 mm)	41,100	121,000	274,000	709,000
Flat-rolled (width < 600 mm)	4,850	18,600	29,900	116,000
Bars and rods in irregular coils	1,890	5,690	17,900	51,400
Other bars and rods	8,680	39,500	64,000	263,000
Wire	3,800	18,000	29,100	130,000
Tubes, pipes, hollow profiles	11,200	73,700	74,200	450,000
Total	82,200	316,000	579,000	1,980,000
Stainless steel scrap	21,600	26,700	125,000	141,000
Grand total	104,000	342,000	704,000	2,120,000

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.