

Mineral Industry Surveys

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CHROMIUM IN MARCH 2007

On the basis of gross weight, consumption of chromium ferroalloys and metal in March 2007 increased 6% compared with consumption in February 2007; consumption in the first quarter 2007 increased 13% compared with consumption in the fourth quarter 2006 and increased 7% compared with consumption in the first quarter 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 March 2007, consumption by end use and consumer stocks of chromium ferroalloys and metal at the end of March 2007, and U.S. foreign trade data for selected chromium-containing materials in February 2007.

Update

The Defense National Stockpile Center (DNSC) announced that 56,270 metric tons (t) of ferrochromium (34,499 t high-carbon ferrochromium and 21,771 t low-carbon ferrochromium) was sold in March through June at a value of \$84.5 million or

\$0.681 per pound (\$1.50 per kilogram) gross weight (Defense National Stockpile Center, 2007a, b, c, d). The DNSC announced that 96 t of chromium metal was sold in June at a value of \$769,000 or \$3.63 per pound (\$8.00 per kilogram) gross weight (Defense National Stockpile Center, 2007b).

References Cited

- Defense National Stockpile Center, 2007a, Stockpile announces ferrochromium sales for April 2007: Ft. Belvoir, VA, Defense National Stockpile Center, News Release DNSC-07-2844, May 7, 1 p.
- Defense National Stockpile Center, 2007b, Stockpile announces ferrochromium sales for June 2007: Ft. Belvoir, VA, Defense National Stockpile Center, News Release DNSC-07-2853, July 5, 1 p.
- Defense National Stockpile Center, 2007c, Stockpile announces ferrochromium sales for March 2007: Ft. Belvoir, VA, Defense National Stockpile Center, News Release DNSC-07-2839, April 5, 1 p.
- Defense National Stockpile Center, 2007d, Stockpile announces ferrochromium sales for May 2007: Ft. Belvoir, VA, Defense National Stockpile Center, News Release DNSC-07-2849-A, July 7, 1 p.

TABLE 1
U.S. SALIENT CHROMIUM STATISTICS¹

(Metric tons, gross weight)

	2006	2007			
	January-December ²	January	February	March	January-March
Production:					
Stainless steel production ³	2,460,000 ⁴	219,000	185,000	216,000	619,000 ⁴
Components of U.S. supply:					
Stainless steel scrap receipts	NA	NA	NA	NA	NA
Stainless steel scrap consumption	NA	NA	NA	NA	NA
Imports for consumption:					
Chromite ore	150,000	36,400	1,840	NA	38,300 ⁵
Ferrochromium:					
More than 4% carbon	393,000	30,100	49,100	NA	79,200 ⁵
More than 0.5%, but not more than 3% carbon	29	1,300	1,300	NA	2,600 ⁵
Not more than 0.5% carbon	28,100	2,270	1,910	NA	4,180 ⁵
Ferrochromium silicon	38,300	763 ^r	1,900	NA	2,660 ⁵
Total ferroalloy imports	459,000	34,400 ^r	54,200	NA	88,600 ⁵
Chromium metal ⁵	10,900	654	644	NA	1,300 ⁵
Stainless steel	872,000	75,800	66,400	NA	142,000 ⁵
Stainless steel scrap	180,000	9,710	8,990	NA	18,700 ⁵
Distribution of U.S. supply:					
Consumption, industry, chromium ferroalloys and metal	422,000	37,600 ^r	35,300 ^r	37,300	110,000
Exports:					
Chromite ore	53,900	455	821	NA	1,280 ⁵
Chromium ferroalloys:					
High-carbon ferrochromium	18,800	2,130	11,400	NA	13,600 ⁵
Low-carbon ferrochromium	16,600	3,270	4,900	NA	8,170 ⁵
Ferrochromium silicon	248	--	--	NA	-- ⁵
Total ferroalloy exports	35,700	5,410	16,300	NA	21,700 ⁵
Chromium metal	1,020	107	115	NA	222 ⁵
Stainless steel	410,000	35,000	38,500	NA	73,500 ⁵
Stainless steel scrap	1,350,000	59,200	79,200	NA	138,000 ⁵
Stocks at end of period:					
Consumer, industry, chromium ferroalloys and metal	XX	11,300 ^r	12,200 ^r	11,900	XX
Government stockpile:					
Chromium ferroalloys	XX	334,000	323,000	303,000	XX
Chromium metal	XX	5,280	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 and February data; March data not available.

⁶Includes waste and scrap and other.

TABLE 2
U.S. REPORTED CONSUMPTION AND STOCKS OF CHROMIUM PRODUCTS IN
2007^{1,2}

(Metric tons, gross weight unless otherwise noted)

	February	March	January- March ³
Consumption by end use:			
Alloy uses:			
Iron alloys:			
Steel:			
Carbon steel	268	347	915
High-strength low-alloy steel	474	483	1,420
Stainless and heat-resisting steel	30,700 ^r	33,200	97,600
Full alloy steel	1,750	1,250	3,980
Electrical steel	W	W	W
Tool steel	423	450	1,330
Unspecified steel	W	W	W
Cast irons	W	W	W
Superalloys	762 ^r	621	2,110
Other alloys ⁴	26 ^r	33	101
Total	35,300 ^r	37,300	110,000
Total, chromium content	20,700 ^r	22,000	64,900
Consumption by material:			
Low-carbon ferrochromium	1,880 ^r	2,020	5,960
High-carbon ferrochromium	30,100 ^r	31,800	93,700
Ferrochromium silicon	2,910	3,110	9,290
Chromium metal	377 ^r	335	1,100
Chromite ore	W	W	W
Chromium-aluminum alloy	17	24	66
Other chromium materials	W	W	39
Total	35,300 ^r	37,300	110,000
Total, chromium content	20,700 ^r	22,000	64,900
Consumer stocks:			
Low-carbon ferrochromium	2,000 ^r	1,910	XX
High-carbon ferrochromium	8,740 ^r	8,460	XX
Ferrochromium silicon	1,280	1,340	XX
Chromium metal	133 ^r	194	XX
Chromite ore	W	W	XX
Chromium-aluminum alloy	25	24	XX
Other chromium materials	24 ^r	18	XX
Total	12,200 ^r	11,900	XX
Total, chromium content	7,240 ^r	7,010	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	
2006:			
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
December	229,000	118,000	5,280
2007:			
January	223,000	111,000	5,280
February	215,000	108,000	5,280
March	204,000	98,900	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)
2006:							
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
November	22,700	1,240	2,560	1,610	3,650	85	1,720
December	286	116	7,380	4,410	8,550	62	1,490
January-December	53,900	10,200	35,700	21,300	38,100	1,020	21,300
2007:							
January	455	185	5,410	3,330	6,050	107	1,990
February	821	361	16,300	11,100	15,500	115	1,600
January-February	1,280	546	21,700	14,400	21,500	222	3,590

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)

	2006		2007		
	December	January- December ²	January	February	January- February
Chromite ore:					
Not more than 40%:					
Gross weight	63	117	--	--	--
Chromic oxide content	25	45	--	--	--
More than 40% but less than 46% chromic oxide:					
Gross weight	72	3,810	24,100	1,620	25,700
Chromic oxide content	33	1,750	11,100	744	11,800
46% or more chromic oxide:					
Gross weight	26,400	146,000	12,300	224	12,500
Chromic oxide content	12,400	76,300	5,700	106	5,800
Total, all grades:					
Gross weight	26,500	150,000	36,400	1,840	38,300
Chromic oxide content	12,400	78,100	16,800	850	17,600
Ferrochromium:					
Low-carbon: ³					
Not more than 0.5%:					
Gross weight	2,340	28,100	2,270	1,910	4,180
Chromium content	1,600	19,300	1,520	1,300	2,820
More than 0.5% but not more than 3%:					
Gross weight	19	29	1,300	1,300	2,600
Chromium content	16	23	687	714	1,400
Total, low-carbon:					
Gross weight	2,360	28,100	3,570	3,210	6,780
Chromium content	1,610	19,300	2,200	2,010	4,220
High-carbon: ⁴					
Gross weight	28,100	393,000	30,100	49,100	79,200
Chromium content	15,400	230,000	20,000	25,400	45,400
Total, all grades:					
Gross weight	30,500	421,000	33,700	52,300	86,000
Chromium content	17,000	249,000	22,200	27,400	49,600
Chromium metal:					
Unwrought powders	106	1,250	160	73	232
Waste and scrap	23	90	2	--	2
Other than waste and scrap and unwrought powders	1,370	9,540	492	571	1,060
Total, all grades	1,500	10,900	654	644	1,300

-- 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 2007, 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						
India	55	36	\$27	55	36	\$27
Kazakhstan	19	13	30	22,600	16,100	21,400
Russia	3,730	2,380	3,150	4,480	2,850	3,600
South Africa	35,700	17,700	21,100	42,500	21,100	25,200
Switzerland	3,500	1,680	2,130	3,500	1,680	2,130
Zimbabwe	6,050	3,630	5,580	6,050	3,630	5,580
Total	49,100	25,400	32,000	79,200	45,400	57,900
Low-carbon ferrochromium:⁵						
More than 0.5% but not more than 3%, South Africa	1,300	714	1,340	2,600	1,400	2,520
Not more than 0.5% carbon:						
Brazil	2	1	6	2	1	6
China	60	39	124	120	79	249
Germany	541	376	1,130	781	544	1,660
Japan	171	116	485	403	273	980
Kazakhstan	--	--	--	800	559	1,250
Russia	1,120	753	1,860	1,790	1,200	2,750
South Africa	--	--	--	262	146	231
Sweden	19	14	69	19	14	69
Total	1,910	1,300	3,670	4,180	2,820	7,200
All grades:						
Brazil	2	1	6	2	1	6
China	60	39	124	120	79	249
Germany	541	376	1,130	781	544	1,660
India	55	36	27	55	36	27
Japan	171	116	485	403	273	980
Kazakhstan	19	13	30	23,400	16,600	22,600
Russia	4,850	3,130	5,010	6,280	4,050	6,360
South Africa	37,000	18,400	22,400	45,400	22,700	28,000
Sweden	19	14	69	19	14	69
Switzerland	3,500	1,680	2,130	3,500	1,680	2,130
Zimbabwe	6,050	3,630	5,580	6,050	3,630	5,580
Total	52,300	27,400	37,000	86,000	49,600	67,600

-- 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.

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 2007, 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:				
China	(4)	\$131	20	\$251
France	3	20	12	20
Germany	--	--	12	71
Japan	3	120	7	251
Russia	5	180	110	1,090
United Kingdom	61	441	81	652
Total	73	892	232	2,340
Waste and scrap, Taiwan	--	--	2	28
Other than waste and scrap and unwrought powders:				
China	231	1,540	371	3,280
France	210	1,810	305	2,640
Germany	2	92	4	179
Japan	--	--	(4)	12
Russia	17	99	257	2,070
United Kingdom	112	923	126	1,020
Total	571	4,470	1,060	9,190
All grades:				
China	231	1,680	391	3,530
France	212	1,830	308	2,660
Germany	2	92	17	250
Japan	3	120	7	263
Russia	22	279	366	3,160
Taiwan	--	--	2	28
United Kingdom	174	1,360	207	1,670
Total	644	5,360	1,300	11,600

-- 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 2007¹

Stainless steel product	February		January-February	
	Gross weight (metric tons)	Value ² (thousands)	Gross weight (metric tons)	Value ² (thousands)
Exports:				
Ingot	1,130	\$6,850	2,130	\$13,500
Flat-rolled (width > 600 mm)	20,200	63,900	37,900	120,000
Flat-rolled (width < 600 mm)	9,350	46,800	17,900	91,900
Bars and rods in irregular coils	703	4,360	1,410	7,130
Other bars and rods	2,810	19,500	5,560	38,600
Wire	592	4,160	1,260	8,420
Tubes, pipes, hollow profiles	3,700	27,200	7,370	54,100
Total	38,500	173,000	73,500	334,000
Stainless steel scrap	79,200	176,000	138,000	304,000
Grand total	118,000	349,000	212,000	638,000
Imports:				
Ingot	11,200	45,900	20,300	87,100
Flat-rolled (width > 600 mm)	28,100	110,000	60,800	229,000
Flat-rolled (width < 600 mm)	2,910	15,500	7,780	39,900
Bars and rods in irregular coils	2,460	11,300	5,150	22,800
Other bars and rods	8,530	42,600	18,200	89,500
Wire	2,770	17,300	7,020	39,200
Tubes, pipes, hollow profiles	10,500	73,300	23,100	157,000
Total	66,400	316,000	142,000	665,000
Stainless steel scrap	8,990	10,900	18,700	24,500
Grand total	75,400	327,000	161,000	689,000

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.