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Mineral Industry Surveys

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CHROMIUM IN FEBRUARY 2008

On the basis of gross weight, consumption of chromium ferroalloys and metal in February 2008 increased 5% compared with revised consumption in January 2008, 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 February 2008, consumption by end use and consumer stocks of chromium ferroalloys and metal at the end of February 2008, and U.S. foreign trade data for selected chromium-containing materials in January 2008.

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

(Metric tons, gross weight)

	2007			2008		
	December	Fourth quarter	January-December[2]	January	February	January-February[2]
Production:						
Stainless steel production[3]	160,000	517,000	2,170,000	203,000	206,000	409,000
Components of U.S. supply:						
Stainless steel scrap receipts	70,600	223,000	953,000	81,600	81,700	163,000
Stainless steel scrap consumption	110,000	347,000	1,430,000	119,000	119,000	238,000
Imports for consumption:						
Chromite ore	12,200	49,000	145,000	2,110	(4)	2,110
Ferrochromium:						
More than 4% carbon	31,900	105,000	384,000	42,200	(4)	42,200
More than 3% carbon but not more than 4% carbon	136	267	267	160	(4)	160
More than 0.5%, but not more than 3% carbon	870	1,900	7,110	1,040	(4)	1,040
Not more than 0.5% carbon	3,360	8,220	31,700	2,090	(4)	2,090
Ferrochromium silicon	5,400	12,200	37,300	--	(4)	--
Total ferroalloy imports	41,700	127,000	460,000	45,500	(4)	45,500
Chromium metal[5]	771	2,370	11,700	802	(4)	802
Stainless steel	57,700	176,000	809,000	68,500	(4)	68,500
Stainless steel scrap	12,800	32,400	118,000	14,000	(4)	14,000
Distribution of U.S. supply:						
Consumption, industry, chromium ferroalloys and metal	32,800	105,000	447,000	37,900 r	39,800	77,700
Exports:						
Chromite ore	534	7,400	37,600	482	(4)	482
Chromium ferroalloys:						
High-carbon ferrochromium	693	1,870	24,700	904	(4)	904
Low-carbon ferrochromium	725	2,050	16,200	1,050	(4)	1,050
Ferrochromium silicon	20	31	328	92	(4)	92
Total ferroalloy exports	1,440	3,950	41,100	2,040	(4)	2,040
Chromium metal	67	266	1,210	96	(4)	96
Stainless steel	37,300	110,000	476,000	36,900	(4)	36,900
Stainless steel scrap	82,800	245,000	882,000	74,800	(4)	74,800
Stocks at end of period:						
Consumer, industry, chromium ferroalloys and metal	13,500	XX	XX	12,300 r	12,400	XX
Government stockpile:						
Chromium ferroalloys	155,000	XX	XX	153,000	146,000	XX
Chromium metal	4,970	XX	XX	4,970	4,940	XX

rRevised. XX Not applicable. -- Zero.

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

[2]May include revised data that are not broken out by specific month.

[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]Data to be published in a subsequent issue.

[5]Includes waste and scrap and other.

TABLE 2

U.S. REPORTED CONSUMPTION AND STOCKS OF CHROMIUM PRODUCTS IN 2008[1, 2]

(Metric tons, gross weight unless otherwise noted)

	2007	2008		
	January-December	January[r]	February	January-February
Consumption by end use:				
Alloy uses:				
Steel:				
Carbon steel	4,160	326	337	663
High-strength low-alloy steel	3,020	277	279	556
Stainless and heat-resisting steel	376,000	31,100	33,600	64,700
Full alloy steel	17,500	2,000	1,510	3,510
Tool steel	5,090	459	459	918
Steel end use, not reported by grade	25,700	2,380	2,380	4,760
Superalloys	7,300	511	513	1,020
Other alloys and uses[3]	8,710	768	775	1,540
Total	447,000	37,900	39,800	77,700
Total, chromium content	262,000	22,000	23,000	45,100
Consumption by material:				
Low-carbon ferrochromium	29,300	2,740	2,850	5,590
High-carbon ferrochromium	380,000	31,800	33,400	65,200
Ferrochromium silicon	W	W	W	W
Chromium metal[4]	3,840	268	267	535
Chromite ore	W	W	W	W
Chromium-aluminum alloy	W	W	W	W
Other chromium materials	W	W	W	W
Total	447,000	37,900	39,800	77,700
Total, chromium content	262,000	22,000	23,000	45,100
Consumer stocks:				
Low-carbon ferrochromium	XX	1,970	1,980	XX
High-carbon ferrochromium	XX	8,980	8,890	XX
Ferrochromium silicon	XX	1,070	1,300	XX
Chromium metal	XX	212	220	XX
Chromium-aluminum alloy	XX	W	W	XX
Other chromium materials	XX	W	W	XX
Total	XX	12,300 [r]	12,400	XX
Total, chromium content	XX	7,160	7,200	XX

[r]Revised. 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]Includes estimates.

[3]Includes cast irons, welding and alloy hard-facing rods and materials, wear- and corrosion-resistant alloys, and aluminum, copper, magnetic, nickel, and other alloys.

[4]Includes waste and scrap and other.

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	
2007:			
February	215,000	108,000	5,280
March	204,000	98,900	5,280
April	191,000	94,900	5,280
May	177,000	91,300	5,280
June	177,000	86,700	5,280
July	177,000	86,700	5,150
August	170,000	92,200	5,150
September	113,000	61,000	5,150
October	108,000	60,500	5,090
November	104,000	57,800	5,030
December	99,400	55,400	4,970
2008:			
January	98,200	54,700	4,970
February	95,000	50,800	4,940

[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 D-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 D-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 D-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 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)
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
March	899	368	1,320	745	1,620	80	1,600
April	12,000	748	1,820	1,070	2,310	140	2,490
May	13,100	1,150	4,060	2,540	5,740	105	1,440
June	790	308	1,830	1,040	2,680	75	1,520
July	844	350	1,130	657	1,760	102	1,760
August	874	364	1,270	747	1,960	123	2,690
September	406	231	4,030	2,470	6,760	95	1,670
October	6,340	812	933	568	1,620	74	1,390
November	525	400	1,580	831	2,600	125	3,850
December	534	284	1,440	737	2,680	67	1,170
January-December	37,600	5,560	41,100	25,800	51,200	1,210	23,200
2008, January	482	255	2,040	957	4,470	96	1,600

[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)

	2007			2008
	November	December	January-December[2]	January
Chromite ore:				
Not more than 40%:				
Gross weight	--	17	52	--
Chromic oxide content	--	6	19	--
More than 40% but less than 46% chromic oxide:				
Gross weight	134	24	26,400	46
Chromic oxide content	61	11	12,100	21
46% or more chromic oxide:				
Gross weight	33,100	12,200	119,000	2,060
Chromic oxide content	15,300	6,260	55,600	956
Total, all grades:				
Gross weight	33,200	12,200	145,000	2,110
Chromic oxide content	15,300	6,270	67,800	977
Ferrochromium:				
Low-carbon:[3]				
Not more than 0.5%:				
Gross weight	2,290	3,360	31,700	2,090
Chromium content	1,570	2,300	21,000	1,440
More than 0.5% but not more than 3%:				
Gross weight	830	870	7,110	1,040
Chromium content	448	469	4,020	702
Total, low-carbon:				
Gross weight	3,120	4,230	38,800	3,130
Chromium content	2,020	2,770	25,100	2,140
Medium-carbon:[4]				
Gross weight	131	136	267	160
Chromium content	71	73	144	90
High-carbon:[5]				
Gross weight	36,100	31,900	384,000	42,200
Chromium content	21,900	18,600	217,000	23,100
Total, all grades:				
Gross weight	39,300	36,300	423,000	45,500
Chromium content	23,900	21,400	242,000	25,400
Chromium metal:				
Unwrought powders	59	63	822	52
Waste and scrap	66	17	357	57
Other than waste and scrap and unwrought powders	422	691	10,500	694
Total, all grades	547	771	11,700	802

-- 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 3% carbon, but not more than 4% carbon.

[5]Ferrrochromium containing more than 4% carbon.

Source: U.S. Census Bureau.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF FERROCHROMIUM IN 2008,
BY GRADE AND BY COUNTRY[1]

Grade and country	January		
	Gross weight (metric tons)	Chromium content (metric tons)	Value[2] (thousands)
High-carbon ferrochromium:[3]			
China	20	13	$67
India	16,500	10,300	23,400
Kazakhstan	236	146	145
Russia	1,420	903	3,390
South Africa	24,000	11,800	25,800
Sweden	19	13	46
Total	42,200	23,100	52,800
Medium-carbon ferrochromium,[4] Russia	160	90	152
Low-carbon ferrochromium:[5]			
More than 0.5% but not more than 3%, Russia	1,040	702	3,490
Not more than 0.5% carbon:			
Germany	400	279	661
Japan	357	236	508
Russia	1,310	911	5,300
Sweden	19	14	88
Total	2,090	1,440	6,560
Total	3,130	2,140	10,100
All grades:			
China	20	13	67
Germany	400	279	661
India	16,500	10,300	23,400
Japan	357	236	508
Kazakhstan	236	146	145
Russia	3,930	2,610	12,300
South Africa	24,000	11,800	25,800
Sweden	38	27	134
Total	45,500	25,400	63,000

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

[2]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.

[3]Ferrochromium containing more than 4% carbon.

[4]Ferrochromium containing more than 3% carbon, but not more than 4% carbon.

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

Source: U.S. Census Bureau.

TABLE 7
U.S. IMPORTS FOR CONSUMPTION OF CHROMIUM METAL IN 2008,
BY GRADE AND BY COUNTRY[1]

Grade and country	January	
	Gross weight (metric tons)	Value[2] (thousands)
Unwrought powders:		
China	17	$23
Russia	34	190
United Kingdom	(3)	66
Total	52	280
Waste and scrap:		
Mexico	47	221
Singapore	10	100
Total	57	321
Other than waste and scrap and unwrought powders:		
China	92	778
France	229	2,270
Germany	1	87
Japan	1	19
Russia	306	2,500
United Kingdom	65	622
Total	694	6,280
All grades:		
China	109	801
France	229	2,270
Germany	1	87
Japan	1	19
Mexico	47	221
Russia	341	2,690
Singapore	10	100
United Kingdom	65	688
Total	802	6,880

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

[2]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.

[3]Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 8

U.S. STAINLESS STEEL TRADE, BY PRODUCT, IN 2008[1]

Stainless steel product	January	
	Gross weight (metric tons)	Value[2] (thousands)
Exports:		
Ingot	1,280	$11,200
Flat-rolled (width > 600 mm)	21,100	75,000
Flat-rolled (width < 600 mm)	6,780	68,100
Bars and rods in irregular coils	237	1,770
Other bars and rods	2,790	19,800
Wire	660	4,880
Tubes, pipes, hollow profiles	4,040	30,600
Total	36,900	211,000
Stainless steel scrap	74,800	102,000
Grand total	112,000	313,000
Imports:		
Ingot	10,800	49,900
Flat-rolled (width > 600 mm)	32,000	117,000
Flat-rolled (width < 600 mm)	4,020	24,500
Bars and rods in irregular coils	2,100	9,790
Other bars and rods	7,440	40,800
Wire	3,050	19,300
Tubes, pipes, hollow profiles	9,050	78,600
Total	68,500	340,000
Stainless steel scrap	14,000	21,900
Grand total	82,500	362,000

[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.

TABLE 9
CHROMITE ORE AVERAGE MONTHLY PRICES

(Dollars per metric ton, gross weight unless otherwise noted)

	Turkey[1]			South Africa[2]						
Month	1	2	3	1	2	3	4	5	6	7
2007:										
January	244	239	NA - NA	150 - 160	149 - 160	165 - 173	185 - 210	225 - 245	100 - 145	NA - NA
February	260	280	NA - NA	181 - 191	178 - 188	165 - 173	185 - 210	225 - 245	100 - 145	NA - NA
March	300	320	NA - NA	250 - 262	250 - 262	165 - 173	185 - 210	225 - 245	100 - 145	NA - NA
April	365	385	NA - NA	260 - 270	260 - 270	150 - 165	180 - 200	245 - 265	110 - 125	NA - NA
May	393	413	NA - NA	263 - 273	263 - 273	185 - 195	200 - 220	255 - 275	110 - 125	NA - NA
June	420	440	NA - NA	270 - 280	270 - 280	210 - 220	240 - 260	255 - 275	110 - 125	NA - NA
July	405	425	NA - NA	245 - 260	245 - 260	240 - 260	280 - 295	255 - 275	220 - 240	NA - NA
August	364	392	NA - NA	218 - 232	222 - 238	240 - 260	280 - 295	255 - 275	220 - 240	NA - NA
September	363	393	NA - NA	225 - 240	235 - 250	265 - 270	285 - 295	345 - 345	220 - 240	NA - NA
October	390	420	NA - NA	258 - 269	258 - 269	300 - 300	320 - 320	410 - 410	220 - 240	NA - NA
November	403	435	NA - NA	263 - 275	263 - 275	330 - 340	340 - 340	430 - 430	210 - 230	NA - NA
December	425	450	NA - NA	268 - 278	268 - 278	270 - 350	300 - 350	455 - 455	240 - 290	NA - NA
2008:										
January	420 - 420	440 - 440	200 - 300	268 - 278	268 - 278	340 - 340	350 - 370	450 - 480	270 - 290	NA - NA
February	450 - 450	470 - 470	200 - 300	298 - 308	298 - 308	360 - 370	380 - 400	460 - 480	270 - 290	NA - NA
March	509 - 509	529 - 529	200 - 300	393 - 403	393 - 403	360 - 370	380 - 400	460 - 480	270 - 290	NA - NA

	South Africa				
Month	8	9	Kazakhstan[3]	Philippines[4]	Sand[5]
2007:					
January	NA - NA	NA - NA	NA - NA	125 - 140	170 - 170
February	NA - NA	NA - NA	NA - NA	125 - 140	170 - 170
March	NA - NA	NA - NA	NA - NA	125 - 140	170 - 170
April	NA - NA	NA - NA	NA - NA	125 - 140	170 - 170
May	NA - NA	NA - NA	NA - NA	125 - 140	170 - 175
June	NA - NA	NA - NA	NA - NA	125 - 140	170 - 175
July	NA - NA	NA - NA	NA - NA	125 - 140	170 - 175
August	NA - NA	NA - NA	NA - NA	125 - 140	170 - 175
September	NA - NA	NA - NA	NA - NA	125 - 140	170 - 175
October	NA - NA	NA - NA	NA - NA	125 - 140	170 - 175
November	NA - NA	NA - NA	NA - NA	125 - 140	170 - 175
December	NA - NA	NA - NA	NA - NA	125 - 140	170 - 175
2008:					
January	NA - NA	NA - NA	200 - 300	125 - 140	170 - 175
February	NA - NA	NA - NA	200 - 300	125 - 140	170 - 175
March	NA - NA	NA - NA	200 - 300	125 - 140	170 - 175

NA Not available.

[1]Source for Turkey 1 price is Ryan's Notes. Turkey 1 is called 38-40% Cr2O3 before 07/07/06 and 40-42% cfr China on and after 07/07/06 by Ryan's Notes. Source for Turkey 2 price is Ryan's Notes. Turkey 2 is called 44% Cr2O3 cfr China by Ryan's Notes. Source for Turkey 3 price is Industrial Minerals. Turkey 3 is called 40-42% 2.5:1 (scale pro rata) by Industrial Minerals.

[2]Source for South Africa 1 price is Ryan's Notes. South Africa 1 is called 39% Cr_2O_3 free on board (f.o.b.). South Africa by Ryan's Notes. Source for South Africa 2 price is Ryan's Notes. South Africa 2 is called 44% chrome concentrate f.o.b. South Africa by Ryan's Notes. Source for South Africa 3 price is Industrial Minerals. South Africa 3 is called chemical grade, 46% Cr_2O_3, wet bulk, f.o.b. by Industrial Minerals. Source for South Africa 4 price is Industrial Minerals. South Africa 4 is called foundry grade, 46% Cr_2O_3, wet bulk, f.o.b. by Industrial Minerals. Source for South Africa 5 price is Industrial Minerals. South Africa 5 is called refractory grade, 46% Cr_2O_3, wet bulk, f.o.b. by Industrial Minerals. Source for South Africa 6 price is Industrial Minerals. South Africa 6 is called Northwest, metallurgical grade, friable lumpy, basis 40% Cr_2O_3, f.o.b. by Industrial Minerals. Source for South Africa 7 price is Metal Bulletin. South Africa 7 is called friable lumpy basis 35-40% chrome ore; cost, insurance and freight (c.i.f.) main Chinese ports by Metal Bulletin. Source for South Africa 8 price is Metal Bulletin. South Africa 8 is called LG6 metallurgical grade basis 42% chrome ore; cost, c.i.f. main Chinese ports by Metal Bulletin. Source for South Africa 9 price is Metal Bulletin. South Africa 9 is called UG2 metallurgical grade basis 40% chrome ore; cost, c.i.f. main Chinese ports by Metal Bulletin.

[3]Source for Kazakhstan price is Industrial Minerals. Kazakhstan is called 40-41% min. by Industrial Minerals.

[4]Source for Philippines price is Industrial Minerals. Philippines is called refractory grade, f.o.b., sand, molding grade, 98% < 30 mesh, del UK by Industrial Minerals.

[5]Source for Sand price is Industrial Minerals. Sand is called molding grade, 98% < 30 mesh, del. UK reported in British pounds by Industrial Minerals.

TABLE 10
HIGH-CARBON FERROCHROMIUM AVERAGE MONTHLY PRICES

(Cents per pound, contained chromium)

Month	United States[1]									
	1		2		3		4		5	
2007:										
January	71.00	76.00	67.50	70.00	65.00	66.25	67.25	69.00	63	65
February	71.00	76.00	72.75	75.00	68.00	70.00	72.00	74.00	67	70
March	71.00	76.00	80.60	82.80	75.20	77.20	80.00	82.60	70	74
April	80.50	83.00	96.00	99.50	86.00	92.50	93.50	100.25	80	85
May	81.00	83.00	101.50	105.88	88.50	97.50	98.25	105.25	91	97
June	114.40	123.20	126.00	130.00	101.60	114.40	124.00	129.40	110	120
July	124.00	130.75	132.75	138.00	100.00	112.50	127.00	133.25	120	130
August	107.00	115.00	125.00	130.70	102.00	115.00	120.20	125.60	120	130
September	101.25	107.50	130.25	135.25	107.50	116.25	126.75	131.00	120	130
October	116.25	125.00	142.25	146.25	113.75	120.00	137.00	142.75	130	140
November	137.90	142.50	162.00	166.10	121.25	132.50	155.00	163.75	137	143
December	143.00	148.00	168.25	174.13	140.00	155.00	162.75	170.50	150	165
2008:										
January	147.18	149.19	172.50	175.75	145.00	157.50	165.00	170.50	150	165
February	161.60	166.56	192.40	196.80	173.00	184.00	188.80	195.60	174	183
March	192.50	198.75	223.75	232.50	201.25	207.50	207.50	215.00	215	221

See footnotes at end of table.

TABLE 10--Continued
HIGH-CARBON FERROCHROMIUM AVERAGE MONTHLY PRICES

(Cents per pound, contained chromium)

Month	Europe[2]				Japan[3]		Hong Kong[4]	China[5]
	1	2	3	4	1	2		
2007:								
January	67 - 71	57 - 60	77 - 79	67 - 71	68.25 - 69.75	83	68 - 70	6,900 - 7,060
February	75 - 77	72 - 74	NA - 78	71 - 77	72.00 - 73.00	83	68 - 70	7,330 - 7,440
March	75 - 77	78 - 81	NA - 75	83 - 91	78.80 - 80.60	83	68 - 70	7,600 - 7,770
April	80 - 82	91 - 95	NA - 79	93 - 103	82.00 - 84.75	87	68 - 70	8,290 - 8,450
May	84 - 86	100 - 105	81 - 83	98 - 108	85.00 - 90.00	90	77 - 83	8,550 - 8,950
June	84 - 86	132 - 137	85 - 87	120 - 130	105.00 - 112.00	90	94 - 104	8,640 - 9,020
July	102 - 104	140 - 145	99 - 101	128 - 138	120.00 - 125.00	90	100 - 110	8,440 - 8,600
August	102 - 104	136 - 141	99 - 101	130 - 145	101.00 - 107.00	108	100 - 110	8,300 - 8,580
September	102 - 104	135 - 140	99 - 101	131 - 146	93.75 - 98.75	108	100 - 110	8,500 - 8,800
October	102 - 104	135 - 140	99 - 101	140 - 150	95.00 - 100.00	108	100 - 110	8,825 - 9,200
November	102 - 104	135 - 140	100 - 106	156 - 165	112.00 - 118.00	108	100 - 110	9,120 - 9,420
December	102 - 104	150 - 160	107 - 114	170 - 191	120.00 - 130.00	108	100 - 110	9,250 - 9,738
2008:								
January	106 - 108	156 - 166	120 - 122	178 - 200	122.50 - 132.50	113	100 - 110	58 - 62
February	140 - 150	200 - 220	120 - 122	218 - 240	130.00 - 140.00	129	100 - 110	60 - 63
March	178 - 188	233 - 258	120 - 122	233 - 289	185.00 - 200.00	129	100 - 110	71 - 75

NA Not available.

[1]Source for United States 1 price is Platts Metals Week; United States 1 is called United States charge 50%-55% chromium, imported, by Platts Metals Week. Source for United States 2 price is Platts Metals Week; United States 2 is called United States 60%-65% chromium, imported, by Platts Metals Week. Source for United States 3 price is Ryan's Notes; United States 3 is called 50%-52% chromium, imported, North American transaction by Ryan's Notes. Source for United States 4 price is Ryan's Notes; United States 4 is called 60%-65% chromium, imported, North American transaction by Ryan's Notes. Source for United States 5 price is Metal Bulletin; United States 5 is called 6%-8% carbon, basis 60%-65% chromium, max. 2% silicon, by Metal Bulletin.

[2]Source for Europe 1 price is Platts Metals Week; Europe 1 is called high-carbon 52% chromium, by Platts Metals Week. Source for Europe 2 price is Platts Metals Week; Europe 2 is called high-carbon 62% chromium, by Platts Metals Week. Source for Europe 3 price is Metal Bulletin; Europe 3 is called lumpy chromium charge, basis 52% chromium, quarterly by Metal Bulletin. Source for Europe 4 price is Metal Bulletin; Europe 4 is called 6%-8% carbon, basis 60% chromium, max. 1.5% silicon, by Metal Bulletin.

[3]Source for Japan 1 price is Platts Metals Week; Japan 1 is called 50%-55% chromium, spot, cost insurance freight (c.i.f.), by Platts Metals Week. Source for Japan 2 price is Platts Metals Week; Japan 2 is called 50%-55% chromium, regular, c.i.f., by Platts Metals Week.

[4]Source for Hong Kong price is Platts Metals Week; Hong Kong is called high-carbon 60% chromium, by Platts Metals Week.

[5]Source for China price is Metal Bulletin; China is called 6%-8% carbon, basis 60% chromium, delivered duty paid China RMB/tonne (metric ton), by Metal Bulletin. As a result of conversion of price reported in Yuan to U.S. dollars, variations result from changes in price and exchange rate. The University of British Columbia, Sauter School of Business, Pacific Exchange Rate Service at URL http://fx.sauder.ubc.ca/data.html is the source of Yuan/U.S. dollar exchange rates.

TABLE 11
LOW-CARBON FERROCHROMIUM AVERAGE MONTHLY PRICES

(Dollars per pound, contained chromium, unless otherwise noted)

Month	United States[1]				
	1	2	3	4	5
2007:					
January	1.19 - 1.24	1.13 - 1.16	1.12 - 1.15	1.19 - 1.22	1.13 - 1.15
February	1.32 - 1.34	1.20 - 1.25	1.19 - 1.23	1.27 - 1.30	1.19 - 1.21
March	1.41 - 1.46	1.22 - 1.26	1.21 - 1.24	1.40 - 1.45	1.21 - 1.24
April	1.50 - 1.55	1.29 - 1.32	1.27 - 1.30	1.46 - 1.51	1.27 - 1.30
May	1.60 - 1.64	1.31 - 1.33	1.30 - 1.32	1.50 - 1.55	1.30 - 1.32
June	1.68 - 1.74	1.47 - 1.52	1.46 - 1.51	1.65 - 1.72	1.50 - 1.55
July	1.70 - 1.81	1.55 - 1.60	1.54 - 1.59	1.69 - 1.80	1.53 - 1.57
August	1.70 - 1.78	1.52 - 1.58	1.51 - 1.57	1.69 - 1.78	1.49 - 1.55
September	1.76 - 1.83	1.57 - 1.62	1.55 - 1.61	1.71 - 1.78	1.55 - 1.61
October	1.93 - 1.98	1.78 - 1.82	1.74 - 1.80	1.89 - 1.94	1.81 - 1.87
November	2.18 - 2.23	2.06 - 2.10	2.05 - 2.09	2.22 - 2.29	2.07 - 2.13
December	2.65 - 2.80	2.37 - 2.48	2.36 - 2.47	2.68 - 2.75	2.32 - 2.37
2008:					
January	3.15 - 3.38	2.68 - 2.75	2.67 - 2.74	2.65 - 2.80	3.03 - 3.11
February	3.23 - 3.64	3.25 - 3.38	3.14 - 3.26	3.16 - 3.26	3.54 - 3.67
March	3.34 - 4.59	4.26 - 4.41	4.16 - 4.25	4.44 - 4.61	4.30 - 4.40

See footnotes at end of table.

TABLE 11--Continued
LOW-CARBON FERROCHROMIUM AVERAGE MONTHLY PRICES

(Dollars per pound, contained chromium, unless otherwise noted)

Month	United States[1]				Europe[2]		
	6	7	8	9	1	2	3
2007:							
January	1.10 - 1.13	1.16 - 1.18	1.05 - 1.08	1.02 - 1.06	1.03 - 1.13	1.16 - 1.20	1.20 - 1.24
February	1.18 - 1.20	1.21 - 1.27	1.13 - 1.17	1.07 - 1.10	1.03 - 1.13	1.17 - 1.21	1.22 - 1.26
March	1.20 - 1.22	1.25 - 1.35	1.20 - 1.25	1.12 - 1.14	1.03 - 1.13	1.22 - 1.28	1.25 - 1.30
April	1.24 - 1.26	1.35 - 1.40	1.24 - 1.28	1.13 - 1.15	1.14 - 1.22	1.22 - 1.27	1.25 - 1.30
May	1.24 - 1.26	1.45 - 1.53	1.28 - 1.32	1.16 - 1.20	1.25 - 1.30	1.37 - 1.42	1.42 - 1.47
June	1.46 - 1.51	1.62 - 1.70	1.37 - 1.44	1.26 - 1.32	1.49 - 1.57	1.55 - 1.64	1.59 - 1.69
July	1.50 - 1.55	1.70 - 1.90	1.45 - 1.60	1.30 - 1.40	1.65 - 1.75	1.63 - 1.73	1.62 - 1.75
August	1.47 - 1.52	1.70 - 1.90	1.45 - 1.60	1.30 - 1.40	1.62 - 1.72	1.66 - 1.76	1.63 - 1.76
September	1.50 - 1.56	1.70 - 1.90	1.45 - 1.60	1.30 - 1.40	1.60 - 1.70	1.71 - 1.81	1.68 - 1.78
October	1.68 - 1.75	1.85 - 1.95	1.60 - 1.70	1.60 - 1.65	1.68 - 1.80	1.80 - 1.88	1.78 - 1.85
November	1.91 - 1.98	1.86 - 1.95	1.61 - 1.70	1.61 - 1.66	1.98 - 2.10	2.09 - 2.27	2.12 - 2.26
December	2.01 - 2.08	1.94 - 2.04	1.72 - 1.82	1.64 - 1.71	2.10 - 2.22	2.18 - 2.38	2.22 - 2.42
2008:							
January	3.15 - 3.38	2.25 - 2.41	2.15 - 2.30	1.75 - 1.90	3.03 - 3.11	2.63 - 2.89	2.66 - 2.90
February	3.23 - 3.41	2.86 - 2.96	2.61 - 2.72	2.34 - 2.45	3.16 - 3.29	3.05 - 3.40	3.10 - 3.45
March	3.34 - 3.46	4.31 - 4.39	4.12 - 4.19	4.04 - 4.12	3.25 - 3.40	3.89 - 4.55	3.94 - 4.61

[1]Source for United States 1 price is Platts Metals Week; United States 1 is called United States low-carbon, 0.05% carbon, imported, by Platts Metals Week. Source for United States 2 price is Platts Metals Week; United States 2 is called United States low-carbon, 0.10% carbon, imported, by Platts Metals Week. Source for United States 3 price is Platts Metals Week; United States 3 is called United States low-carbon, 0.15% carbon, imported, by Platts Metals Week. Source for United States 4 price is Ryan's Notes; United States 4 is called 0.05% carbon, imported, North American transaction by Ryan's Notes. Source for United States 5 price is Ryan's Notes; United States 5 is called 0.1% carbon, imported, North American transaction by Ryan's Notes. Source for United States 6 price is Ryan's Notes; United States 6 is called 0.15% carbon, imported, North American transaction by Ryan's Notes. Source for United States 7 price is Metal Bulletin; United States 7 is called United States free market, low carbon, duty paid free on board (f.o.b.) Pittsburgh, 0.05% carbon, 65% min. chromium by Metal Bulletin. Source for United States 8 price is Metal Bulletin; United States 8 is called United States free market, low-carbon, duty paid f.o.b. Pittsburgh, 0.10% carbon, 62% min. chromium by Metal Bulletin. Source for United States 9 price is Metal Bulletin; United States 9 is called United States free market, low-carbon, duty paid f.o.b. Pittsburgh, 0.15% carbon, 60% min. chromium by Metal Bulletin.

[2]Source for Europe 1 price is Platts Metals Week; Europe 1 is called 0.1% carbon, by Platts Metals Week. Source for Europe 2 price is Metal Bulletin; Europe 2 is called 0.1% carbon, average 68%-70% chromium, by Metal Bulletin. Source for Europe 3 price is Metal Bulletin; Europe 3 is called European low-carbon, in warehouse, 0.06% carbon max., 65% chromium, by Metal Bulletin.

TABLE 12
FERROCHROMIUM SILICON AND CHROMIUM METAL AVERAGE MONTHLY PRICES

(Dollars per pound, gross weight, unless otherwise noted)

Month	Ferrochromium silicon[2]	Chromium metal		
		United States Aluminothermic[3]	Europe Aluminothermic[1]	
			1	2
2007:				
January	0.5063	3.00 - 3.05	2.81 - 2.95	4.65 - 4.83
February	0.5245	3.14 - 3.19	2.86 - 2.95	4.65 - 4.83
March	0.5591	3.40 - 3.48	3.11 - 3.20	4.65 - 4.83
April	0.6195	3.64 - 3.73	3.38 - 3.52	3.49 - 4.83
May	0.6455	3.65 - 3.75	3.46 - 3.56	4.65 - 4.83
June	0.7810	3.65 - 3.75	3.47 - 3.61	4.65 - 4.83
July	0.7955	3.65 - 3.75	3.45 - 3.63	4.65 - 4.83
August	0.7584	3.65 - 3.74	3.45 - 3.63	4.65 - 4.83
September	0.7810	3.65 - 3.70	3.44 - 3.61	4.65 - 4.83
October	0.8213	3.65 - 3.70	3.45 - 3.59	4.65 - 4.83
November	0.9120	3.83 - 3.94	3.49 - 3.61	4.65 - 4.83
December	0.9473	4.59 - 4.71	3.86 - 4.02	4.65 - 4.83
2008:				
January	0.9703	4.65 - 4.75	4.38 - 2.95	4.65 - 4.83
February	1.0720	4.68 - 4.75	4.52 - 2.95	4.65 - 4.83
March	1.2020	4.86 - 4.95	4.50 - 3.20	4.65 - 4.83

[1]Source for Europe Aluminothermic 1 price is Metal Bulletin; Europe Aluminothermic 1 is called alumino-thermic, min. 99% metal by Metal Bulletin; price converted from dollars per metric ton to dollars per pound. Source for Europe Aluminothermic 2 price is Metal Bulletin; Europe Aluminothermic 2 is called western un-degassed AT, min. 99.4% metal by Metal Bulletin; price converted from dollars per kilogram to dollars per pound.

[2]Source for ferrochromium silicon price is Ryan's Notes; ferrochromium silicon is called North American transaction by Ryan's Notes.

[3]Source for United States Aluminothermic price is Ryan's Notes; United States Aluminothermic is called aluminothermic imported chrome metal by Ryan's Notes.