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Mineral Industry Surveys

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CHROMIUM IN AUGUST 2008

On the basis of gross weight, consumption of chromium ferroalloys and metal in August 2008 increased slightly compared with consumption in July 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 August 2008, consumption by end use and consumer stocks of chromium ferroalloys and metal at the end of August 2008, U.S. foreign trade data for selected chromium-containing materials in July 2008, and chromium ferroalloys and metal prices.

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

(Metric tons, gross weight)

	2007	2008			
	January-December	June	July	August	January-August[2]
Production:					
Stainless steel production[3]	2,170,000	164,000	173,000	153,000	1,510,000
Components of U.S. supply:					
Stainless steel scrap receipts	953,000	71,600	69,900	73,100	605,000
Stainless steel scrap consumption	1,430,000	111,000	108,000	114,000	923,000
Imports for consumption:					
Chromite ore	145,000	11,600	2,220	(4)	87,600 [5]
Ferrochromium:					
More than 4% carbon	384,000	58,800	58,900	(4)	331,000 [5]
More than 3% carbon but not more than 4% carbon	267	--	--	(4)	160 [5]
More than 0.5%, but not more than 3% carbon	7,110	--	20	(4)	1,840 [5]
Not more than 0.5% carbon	31,700	3,960	3,090	(4)	23,000 [5]
Ferrochromium silicon	37,300	3,430	3,900	(4)	19,200 [5]
Total ferroalloy imports	460,000	66,200	65,900	(4)	375,000 [5]
Chromium metal[6]	11,700	1,390	1,270	(4)	8,410 [5]
Stainless steel	809,000	69,000	76,400	(4)	507,000 [5]
Stainless steel scrap	118,000	15,800	10,200	(4)	97,300 [5]
Distribution of U.S. supply:					
Consumption, industry, chromium ferroalloys and metal	447,000	36,500	37,600	37,700	291,000
Exports:					
Chromite ore	37,600	325	818	(4)	4,010 [5]
Chromium ferroalloys:					
High-carbon ferrochromium	24,700	635	302	(4)	7,930 [5]
Low-carbon ferrochromium	16,200	2,100	590	(4)	11,200 [5]
Ferrochromium silicon	328	--	6	(4)	110 [5]
Total ferroalloy exports	41,100	2,740	899	(4)	19,200 [5]
Chromium metal	1,210	128	110	(4)	705 [5]
Stainless steel	476,000	57,600	54,500	(4)	307,000 [5]
Stainless steel scrap	882,000	109,000	97,300	(4)	613,000 [5]
Stocks at end of period:					
Consumer, industry, chromium ferroalloys and metal	XX	11,800	11,900	11,300	XX
Government stockpile:					
Chromium ferroalloys	XX	139,000	206,000	206,000	XX
Chromium metal	XX	4,930	4,890	4,850	XX

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]January through July data only.

[6]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)

	July	August	January-August[3]
Consumption by end use:			
Alloy uses:			
Steel:			
Carbon steel	325	411	2,580
High-strength low-alloy steel	286	329	2,310
Stainless and heat-resisting steel	30,700	31,500	242,000
Full alloy steel	W	1,790	11,800
Tool steel	416	416	3,330
Steel end use, not reported by grade	4,600	2,140	19,700
Superalloys	468	467	3,770
Other alloys and uses[4]	710	701	5,640
Total	37,600	37,700	291,000
Total, chromium content	21,900	21,800	170,000
Consumption by material:			
Low-carbon ferrochromium	3,240	2,650	21,000
High-carbon ferrochromium	31,100	31,700	244,000
Ferrochromium silicon	W	W	W
Chromium metal[5]	245	252	2,040
Chromite ore	W	W	W
Chromium-aluminum alloy	W	W	W
Other chromium materials	W	W	W
Total	37,600	37,700	291,000
Total, chromium content	21,900	21,800	170,000
Consumer stocks:			
Low-carbon ferrochromium	1,800	1,880	XX
High-carbon ferrochromium	8,860	8,080	XX
Ferrochromium silicon	1,040	1,140	XX
Chromium metal	115	113	XX
Chromium-aluminum alloy	W	W	XX
Other chromium materials	W	W	XX
Total	11,900	11,300	XX
Total, chromium content	6,930	6,490	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]Includes estimates.

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

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

[5]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:			
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
March	93,600	48,100	4,940
April	93,600	46,900	4,940
May	93,500	45,800	4,930
June	93,600	45,100	4,930
July	140,000	66,700	4,890
August	140,000	66,700	4,850

[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:							
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[4]	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
February	657	424	2,210	905	3,650	30	845
March	582	282	2,260	946	3,600	131	1,940
April	778	411	4,680	1,810	6,500	80	1,610
May	369	242	4,370	2,040	10,800	129	2,040
June	325	197	2,740	1,180	6,020	128	2,540
July	818	472	899	323	1,130	110	2,210
January-July	4,010	2,280	19,200	8,170	36,200	705	12,800

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

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

[3]Includes chromium metal, waste and scrap, and unwrought powders.

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

Source: U.S. Census Bureau.

TABLE 5

U.S. IMPORTS FOR CONSUMPTION OF CHROMITE ORE, FERROCHROMIUM, AND CHROMIUM METAL[1]

(Metric tons)

	2007	2008		
	January-December	June	July	January-July[2]
Chromite ore:				
Not more than 40%:				
Gross weight	52	--	--	--
Chromic oxide content	19	--	--	--
More than 40% but less than 46% chromic oxide:				
Gross weight	26,400	4,310	462	7,850
Chromic oxide content	12,100	1,950	210	3,730
46% or more chromic oxide:				
Gross weight	119,000	7,290	1,760	79,800
Chromic oxide content	55,600	3,410	811	38,600
Total, all grades:				
Gross weight	145,000	11,600	2,220	87,600
Chromic oxide content	67,800	5,360	1,020	42,400
Ferrochromium:				
Low-carbon:[3]				
Not more than 0.5%:				
Gross weight	31,700	3,960	3,090	23,000
Chromium content	21,000	2,720	2,180	15,800
More than 0.5% but not more than 3%:				
Gross weight	7,110	--	20	1,840
Chromium content	4,020	--	11	1,160
Total, low-carbon:				
Gross weight	38,800	3,960	3,110	24,900
Chromium content	25,100	2,720	2,190	16,900
Medium-carbon:[4]				
Gross weight	267	--	--	160
Chromium content	144	--	--	90
High-carbon:[5]				
Gross weight	384,000	58,800	58,900	331,000
Chromium content	217,000	33,100	34,300	189,000
Total, all grades:				
Gross weight	423,000	62,800	62,000	356,000
Chromium content	242,000	35,800	36,500	206,000
Chromium metal:				
Unwrought powders	822	132	121	580
Waste and scrap	357	38	28	382
Other than waste and scrap and unwrought powders	10,500	1,220	1,120	7,440
Total, all grades:	11,700	1,390	1,270	8,410

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

[4]Ferrrochromium 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	July			January-July[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]						
Brazil	--	--	--	2,000	1,040	$3,820
China	--	--	--	632	400	1,730
India	1,760	1,080	$4,150	45,000	27,800	74,900
Italy	--	--	--	159	100	260
Kazakhstan	19,300	13,400	61,200	73,900	51,100	226,000
Mexico	--	--	--	19	14	60
Russia	7,890	5,190	24,600	25,500	16,500	66,900
South Africa	29,900	14,700	48,400	161,000	78,800	213,000
Sweden	--	--	--	529	326	882
Zimbabwe	--	--	--	21,900	12,800	55,100
Total	58,900	34,300	138,000	331,000	189,000	643,000
Medium-carbon ferrochromium,[5] Russia	--	--	--	160	90	152
Low-carbon ferrochromium:[6]						
More than 0.5% but not more than 3%:						
China	--	--	--	340	212	1,200
Russia	--	--	--	1,080	726	3,690
South Africa	20	11	47	420	227	666
Total	20	11	47	1,840	1,160	5,560
Not more than 0.5% carbon:						
Brazil	--	--	--	37	25	116
China	1,020	644	5,650	2,650	1,700	12,500
Germany	380	266	2,450	3,190	2,200	14,800
Japan	520	235	1,510	2,460	1,520	6,300
Kazakhstan	44	29	162	375	249	801
Russia	1,070	967	7,850	13,800	9,720	74,000
South Africa	--	--	--	283	174	437
Sweden	57	37	207	241	165	1,080
Total	3,090	2,180	17,800	23,000	15,800	110,000
All grades:						
Brazil	--	--	--	2,030	1,070	3,940
China	1,020	644	5,650	3,620	2,310	15,500
Germany	380	266	2,450	3,190	2,200	14,800
India	1,760	1,080	4,150	45,000	27,800	74,900
Italy	--	--	--	159	100	260
Japan	520	235	1,510	2,460	1,520	6,300
Kazakhstan	19,300	13,400	61,400	74,300	51,400	227,000
Mexico	--	--	--	19	14	60
Russia	8,960	6,150	32,500	40,500	27,100	145,000
South Africa	29,900	14,700	48,400	162,000	79,200	214,000
Sweden	57	37	207	770	491	1,960
Zimbabwe	--	--	--	21,900	12,800	55,100
Total	62,000	36,500	156,000	356,000	206,000	759,000

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

[6]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	July		January-July[2]	
	Gross weight (metric tons)	Value[3] (thousands)	Gross weight (metric tons)	Value[3] (thousands)
Unwrought powders:				
China	19	$223	161	$1,080
France	3	30	30	90
Germany	3	26	5	77
Japan	3	132	19	800
Netherlands	--	--	20	173
Russia	34	189	234	1,600
United Kingdom	58	644	111	1,560
Total	121	1,240	580	5,370
Waste and scrap:				
China	--	--	59	542
Germany	--	--	(4)	10
Japan	17	289	19	321
Malaysia	--	--	23	190
Mexico	10	33	270	1,030
Singapore	1	22	11	122
Total	28	343	382	2,210
Other than waste and scrap and unwrought powders:				
China	239	2,330	1,360	11,900
France	305	3,640	1,870	21,100
Germany	25	247	119	2,660
India	--	--	126	170
Italy	--	--	1	20
Japan	1	48	15	200
Russia	210	2,470	2,150	21,400
United Kingdom	338	4,140	1,810	19,500
Total	1,120	12,900	7,440	76,900
All grades:				
China	258	2,560	1,580	13,500
France	308	3,670	1,900	21,200
Germany	28	273	123	2,750
India	--	--	126	170
Italy	--	--	1	20
Japan	21	468	53	1,320
Malaysia	--	--	23	190
Mexico	10	33	270	1,030
Netherlands	--	--	20	173
Russia	244	2,660	2,380	23,000
Singapore	1	22	11	122
United Kingdom	396	4,780	1,920	21,000
Total	1,270	14,500	8,410	84,500

-- 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]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]Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 8
U.S. STAINLESS STEEL TRADE, BY PRODUCT, IN 2008[1]

Stainless steel product	July		January-July	
	Gross weight (metric tons)	Value[2] (thousands)	Gross weight (metric tons)	Value[2] (thousands)
Exports:				
Ingot	7,200	$13,900	17,200	$82,500
Flat-rolled (width > 600 mm)	30,200	97,800	173,000	604,000
Flat-rolled (width < 600 mm)	8,490	42,700	56,600	342,000
Bars and rods in irregular coils	464	2,690	5,140	28,700
Other bars and rods	3,460	25,300	24,400	173,000
Wire	748	5,740	4,920	39,200
Tubes, pipes, hollow profiles	3,910	36,100	26,300	223,000
Total	54,500	224,000	307,000	1,490,000
Stainless steel scrap	97,300	112,000	613,000	756,000
Grand total	152,000	336,000	920,000	2,250,000
Imports:				
Ingot	12,400	59,600	76,200	345,000
Flat-rolled (width > 600 mm)	33,400	138,000	237,000	935,000
Flat-rolled (width < 600 mm)	4,940	24,400	28,700	147,000
Bars and rods in irregular coils	3,340	16,400	17,400	83,900
Other bars and rods	10,200	66,200	61,700	368,000
Wire	3,200	21,400	23,500	150,000
Tubes, pipes, hollow profiles	8,890	83,100	62,300	559,000
Total	76,400	409,000	507,000	2,590,000
Stainless steel scrap	10,200	14,200	97,300	174,000
Grand total	86,600	423,000	604,000	2,760,000

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

[2]Export value is free alongside ship. 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 PRICES AVERAGE MONTHLY AND ANNUAL 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:										
August	364 - 364	392 - 392	NA - NA	218 - 232	222 - 238	240 - 260	280 - 295	255 - 275	220 - 240	NA - NA
September	363 - 363	393 - 393	NA - NA	225 - 240	235 - 250	265 - 270	285 - 295	345 - 345	220 - 240	NA - NA
October	390 - 390	420 - 420	NA - NA	258 - 269	258 - 269	300 - 300	320 - 320	410 - 410	220 - 240	NA - NA
November	403 - 403	435 - 435	NA - NA	263 - 275	263 - 275	330 - 340	340 - 340	430 - 430	210 - 230	NA - NA
December	425 - 425	450 - 450	NA - NA	268 - 278	268 - 278	270 - 350	300 - 350	455 - 455	240 - 290	NA - NA
Yearly avg.	360 - 360	382 - 382	NA - NA	238 - 249	238 - 250	224 - 240	248 - 267	292 - 306	163 - 191	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
April	588 - 588	618 - 618	200 - 300	440 - 450	440 - 450	360 - 370	380 - 400	460 - 480	270 - 290	NA - NA
May	600 - 600	635 - 635	200 - 300	450 - 460	450 - 460	390 - 415	420 - 435	550 - 580	300 - 350	NA - NA
June	600 - 600	635 - 635	200 - 300	393 - 413	410 - 430	450 - 480	480 - 510	550 - 580	420 - 420	NA - NA
July	575 - 600	610 - 635	500 - 500	330 - 340	370 - 400	550 - 580	580 - 570	650 - 680	520 - 520	NA - NA
August	550 - 600	585 - 635	500 - 500	330 - 340	370 - 400	510 - 540	540 - 570	710 - 740	500 - 500	330 - 370

	South Africa				
Month	8	9	Kazakhstan[3]	Philippines[4]	Sand[5]
2007:					
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
Yearly avg.	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
April	NA - NA	NA - NA	200 - 300	125 - 140	170 - 175
May	NA - NA	NA - NA	200 - 300	125 - 140	170 - 175
June	NA - NA	NA - NA	200 - 300	125 - 140	170 - 175
July	NA - NA	NA - NA	500 - 500	125 - 140	400 - 400
August	360 - 390	330 - 350	500 - 500	125 - 140	400 - 400

NA Not available.

[1]Source for Turkey 1 price is Ryan's Notes. Turkey 1 is called 38-40% Cr_2O_3 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% Cr_2O_3 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 AND ANNUAL PRICES

(Cents per pound, contained chromium)

Month	United States[1]									
	1		2		3		4		5	
2007:										
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
Yearly avg.	101.99	107.70	117.56	121.62	97.14	105.55	113.31	118.57	104	112
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
April	204.00	208.25	240.00	245.00	205.00	215.00	225.00	236.25	241	246
May	204.80	209.95	241.00	247.00	205.00	215.00	224.60	240.00	246	251
June	205.00	211.44	240.75	248.25	205.00	215.00	211.25	225.00	245	250
July	202.00	207.00	238.00	243.00	205.00	210.00	196.25	216.25	237	243
August	195.05	197.63	222.50	226.75	190.00	205.00	185.00	205.00	228	235

See footnotes at end of table.

TABLE 10—Continued
HIGH-CARBON FERROCHROMIUM AVERAGE MONTHLY AND ANNUAL PRICES

(Cents per pound, contained chromium)

Month	Europe[2]								Japan[3]					
	1		2		3		4		1		2	Hong Kong[4]	China[5]	
2007:														
August	102	104	136	141	99	101	130	145	101.00	107.00	108	100 - 145	8,300	8,580
September	102	104	135	140	99	101	131	146	93.75	98.75	108	100 - 146	8,500	8,800
October	102	104	135	140	99	101	140	150	95.00	100.00	108	100 - 150	8,825	9,200
November	102	104	135	140	100	106	156	165	112.00	118.00	108	100 - 165	9,120	9,420
December	102	104	150	160	107	114	170	191	120.00	130.00	108	100 - 191	9,250	9,738
Yearly avg.	90	92	114	119	92	92	116	126	94.77	99.48	96	87 - 94	8,304	8,578
2008:														
January	102	104	150	160	192	210	245	325	230.00	240.00	200	100 - 110	58	62
February	137	145	196	214	192	210	243	310	230.00	240.00	200	100 - 110	60	63
March	178	188	233	258	205	220	230	275	190.00	210.00	210	100 - 110	71	75
April	190	200	250	280	205	220	220	260	184.00	204.00	213	100 - 110	94	102
May	190	200	250	280	205	220	220	254	172.50	185.00	213	100 - 110	103	107
June	190	200	250	280	189	206	199	230	145.00	150.00	197	100 - 110	94	101
July	195	205	250	280	205	220	230	275	190.00	210.00	210	100 - 110	86	93
August	195	205	246	274	205	220	220	260	184.00	204.00	213	100 - 110	87	93

[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 AND ANNUAL PRICES

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

Month	United States[1]				
	1	2	3	4	5
2007:					
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
Yearly avg.	1.72 - 1.78	1.54 - 1.59	1.53 - 1.58	1.69 - 1.75	1.52 - 1.56
2008:					
January	3.15 - 3.38	2.68 - 2.75	2.67 - 2.74	3.03 - 3.11	2.69 - 2.79
February	3.54 - 3.64	3.25 - 3.38	3.14 - 3.26	3.54 - 3.67	3.34 - 3.44
March	4.45 - 4.59	4.26 - 4.41	4.16 - 4.25	4.16 - 4.40	4.26 - 4.39
April	5.00 - 5.18	4.89 - 4.96	4.88 - 4.95	5.16 - 5.29	4.95 - 5.06
May	5.45 - 5.56	5.16 - 5.26	5.09 - 5.19	5.40 - 5.45	5.18 - 5.27
June	5.54 - 5.59	5.13 - 5.28	5.12 - 5.27	5.40 - 5.45	4.99 - 5.18
July	5.45 - 5.50	4.99 - 5.06	4.98 - 5.05	5.21 - 5.30	4.85 - 5.00
August	5.27 - 5.32	4.89 - 4.94	4.90 - 4.96	5.15 - 5.25	4.63 - 4.80

See footnotes at end of table.

TABLE 11—Continued
LOW-CARBON FERROCHROMIUM AVERAGE MONTHLY AND ANNUAL PRICES

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

Month	United States[1]				Europe[2]		
	6	7	8	9	1	2	3
2007:							
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
Yearly avg.	1.47 - 1.51	1.58 - 1.69	1.40 - 1.49	1.29 - 1.36	1.50 - 1.61	1.57 - 1.66	1.59 - 1.68
2008:							
January	2.54 - 2.64	2.25 - 2.41	2.15 - 2.30	1.75 - 1.90	2.65 - 2.80	2.63 - 2.89	2.66 - 2.90
February	3.18 - 3.28	3.07 - 3.17	2.77 - 2.87	2.53 - 2.63	3.16 - 3.26	3.17 - 3.49	3.22 - 3.55
March	4.08 - 4.18	4.42 - 4.49	4.31 - 4.36	4.23 - 4.30	4.44 - 4.61	3.95 - 4.73	4.00 - 4.78
April	4.66 - 4.79	4.90 - 5.00	4.80 - 4.90	4.73 - 4.83	4.85 - 5.05	3.95 - 5.50	4.00 - 5.55
May	5.03 - 5.13	5.05 - 5.15	5.00 - 5.10	4.93 - 5.03	4.85 - 5.05	3.85 - 4.10	4.75 - 5.55
June	5.00 - 5.08	5.52 - 5.61	5.16 - 5.23	5.10 - 5.16	4.85 - 5.05	4.15 - 4.40	5.30 - 5.43
July	4.78 - 4.84	5.44 - 5.52	5.01 - 5.10	4.98 - 5.07	5.00 - 5.20	5.05 - 5.20	5.10 - 5.32
August	4.70 - 4.75	5.28 - 5.36	4.91 - 5.00	4.89 - 4.97	5.00 - 5.20	4.85 - 5.12	4.85 - 5.15

[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 AND ANNUAL PRICES

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

Month	Ferro-chromium silicon[2]	Chromium metal		
		United States	Europe	
		Aluminothermic[3]	Aluminothermic[1]	
			1	2
2007:				
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
Yearly avg.	0.7197	3.62 - 3.70	3.34 - 3.48	4.56 - 4.83
2008:				
January	0.9703	4.65 - 4.75	4.38 - 4.54	4.65 - 4.83
February	1.0896	4.68 - 4.75	4.51 - 4.68	4.65 - 4.83
March	1.2125	4.90 - 5.00	4.51 - 4.65	4.65 - 4.83
April	1.3075	5.05 - 5.13	4.74 - 5.03	4.65 - 4.83
May	1.4040	5.17 - 5.25	4.97 - 5.21	4.65 - 4.83
June	1.4518	5.53 - 5.71	5.36 - 5.53	4.65 - 4.83
July	1.3813	5.75 - 5.90	5.95 - 6.13	4.65 - 4.83
August	1.2912	5.75 - 5.90	6.11 - 6.32	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.