

Mineral Industry Surveys

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CHROMIUM IN DECEMBER 2008

On the basis of gross weight, consumption of chromium ferroalloys and metal in December 2008 decreased 13% compared with consumption in November 2008; consumption in the fourth quarter 2008 decreased 12% compared with consumption in the third quarter 2008 and decreased 11% compared with consumption in the fourth quarter 2007, 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 at the end of December 2008, consumption by end use, and consumer stocks of chromium ferroalloys and metal at the end of December 2008, U.S. foreign trade data for selected chromium-containing materials in November 2008, and chromium ferroalloys and metal prices.

TABLE 1
U.S. SALIENT CHROMIUM STATISTICS¹

(Metric tons, gross weight)

	2007	2008			
	January- December	October	November	December	January- December ²
Production:					
Stainless steel production ³	2,170,000	129,000	95,000	68,300	1,930,000
Components of U.S. supply:					
Stainless steel scrap receipts	953,000	56,500	61,300	64,200	858,000
Stainless steel scrap consumption	1,430,000	102,000	103,000	92,300	1,330,000
Imports for consumption:					
Chromite ore	145,000	10,600	22,400	(4)	173,000 ⁵
Ferrochromium:					
More than 4% carbon	384,000	4,370	12,100	(4)	431,000 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	--	--	(4)	1,840 ⁵
Not more than 0.5% carbon	31,700	1,900	2,640	(4)	33,900 ⁵
Ferrochromium silicon	37,300	--	--	(4)	22,500 ⁵
Total ferroalloy imports	460,000	6,270	14,800	(4)	489,000 ⁵
Chromium metal ⁶	11,700	1,330	579	(4)	12,700 ⁵
Stainless steel	809,000	61,800	52,300	(4)	742,000 ⁵
Stainless steel scrap	118,000	9,630	7,320	(4)	136,000 ⁵
Distribution of U.S. supply:					
Consumption, industry, chromium ferroalloys and metal	447,000	33,400	32,500	28,200	417,000
Exports:					
Chromite ore	37,600	958	413	(4)	6,530 ⁵
Chromium ferroalloys:					
High-carbon ferrochromium	24,700	882	559	(4)	10,700 ⁵
Low-carbon ferrochromium	16,200	1,290	134	(4)	13,300 ⁵
Ferrochromium silicon	328	--	5	(4)	216 ⁵
Total ferroalloy exports	41,100	2,180	699	(4)	24,300 ⁵
Chromium metal	1,210	65	45	(4)	970 ⁵
Stainless steel	476,000	32,700	28,100	(4)	446,000 ⁵
Stainless steel scrap	882,000	92,300	59,800	(4)	940,000 ⁵
Stocks at end of period:					
Consumer, industry, chromium ferroalloys and metal	XX	10,700	9,100	8,920	XX
Government stockpile:					
Chromium ferroalloys	XX	206,000	206,000	206,000	XX
Chromium metal	XX	4,820	4,820	4,820	XX

XX Not applicable. -- Zero.

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

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

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.

⁴Data to be published in a subsequent issue.

⁵January through November data only.

⁶Includes 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)

	November	December	January- December ³
Consumption by end use:			
Alloy uses:			
Steel:			
Carbon steel	411	278	3,960
High-strength low-alloy steel	153	148	3,130
Stainless and heat-resisting steel	26,800	22,400	344,000
Full alloy steel	1,430	1,690	18,300
Tool steel	416	416	4,990
Steel end use, not reported by grade	2,140	2,100	28,200
Superalloys	456	437	5,580
Other alloys and uses ⁴	710	700	8,460
Total	32,500	28,200	417,000
Total, chromium content	18,900	16,700	243,000
Consumption by material:			
Low-carbon ferrochromium	2,560	2,200	30,800
High-carbon ferrochromium	26,800	23,200	348,000
Ferrochromium silicon	W	W	W
Chromium metal ⁵	247	229	3,010
Chromite ore	W	W	W
Chromium-aluminum alloy	W	W	W
Other chromium materials	W	W	W
Total	32,500	28,200	417,000
Total, chromium content	18,900	16,700	243,000
Consumer stocks:			
Low-carbon ferrochromium	1,690	1,730	XX
High-carbon ferrochromium	6,240	5,840	XX
Ferrochromium silicon	979	1,160	XX
Chromium metal	134	117	XX
Chromium-aluminum alloy	W	W	XX
Other chromium materials	W	W	XX
Total	9,100	8,920	XX
Total, chromium content	5,290	5,280	XX

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 that are not broken out by specific month.

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

⁵Includes 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:			
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
September	139,000	66,700	4,820
October	139,000	66,700	4,820
November	139,000	66,700	4,820
December	139,000	66,700	4,820

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 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 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)
2007:							
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
August	678	372	1,470	544	2,060	123	2,490
September	468	446	713	291	896	33	1,460
October	958	637	2,180	927	2,830	65	1,600
November	413	371	699	254	784	45	1,120
January-November	6,530	4,110	24,300	10,200	42,800	970	19,400

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

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

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

⁴May 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 METAL¹

(Metric tons)

	2007	2008		
	January- December	October	November	January- November 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	321	1,470	14,400
Chromic oxide content	12,100	147	646	6,520
46% or more chromic oxide:				
Gross weight	119,000	10,300	20,900	159,000
Chromic oxide content	55,600	4,770	10,800	76,300
Total, all grades:				
Gross weight	145,000	10,600	22,400	173,000
Chromic oxide content	67,800	4,920	11,400	82,900
Ferrochromium:				
Low-carbon: ³				
Not more than 0.5%:				
Gross weight	31,700	1,900	2,640	33,900
Chromium content	21,000	1,260	1,820	23,100
More than 0.5% but not more than 3%:				
Gross weight	7,110	--	--	1,840
Chromium content	4,020	--	--	1,160
Total, low-carbon:				
Gross weight	38,800	1,900	2,640	35,700
Chromium content	25,100	1,260	1,820	24,300
Medium-carbon: ⁴				
Gross weight	267	--	--	160
Chromium content	144	--	--	90
High-carbon: ⁵				
Gross weight	384,000	4,370	12,100	431,000
Chromium content	217,000	2,080	6,400	245,000
Total, all grades:				
Gross weight	423,000	6,270	14,800	467,000
Chromium content	242,000	3,350	8,220	269,000
Chromium metal:				
Unwrought powders	822	143	51	997
Waste and scrap	357	41	(6)	517
Other than waste and scrap and unwrought powders	10,500	1,150	527	11,200
Total, all grades:	11,700	1,330	579	12,700

-- Zero.

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

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

³Ferrochromium containing not more than 3% carbon.

⁴Ferrochromium containing more than 3% carbon but not more than 4% carbon.

⁵Ferrochromium containing more than 4% carbon.

⁶Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF FERROCHROMIUM IN 2008,
BY GRADE AND BY COUNTRY¹

Grade and country	November			January-November 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	3,570	2,210	\$7,480	57,500	35,500	104,000
Italy	--	--	--	159	100	260
Kazakhstan	35	24	129	94,000	65,100	282,000
Mexico	--	--	--	38	28	123
Russia	--	--	--	25,500	16,500	66,900
South Africa	8,500	4,160	13,100	217,000	106,000	305,000
Sweden	19	13	74	642	400	1,200
Zimbabwe	--	--	--	33,200	19,400	87,200
Total	12,100	6,400	20,800	431,000	245,000	852,000
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	--	--	--	420	227	666
Total	--	--	--	1,840	1,160	5,560
Not more than 0.5% carbon:						
Brazil	--	--	--	37	25	116
China	380	238	1,940	4,550	2,920	23,000
Germany	890	617	6,340	5,190	3,580	29,400
Japan	404	289	2,240	4,090	2,660	14,300
Kazakhstan	458	316	1,850	1,080	728	3,550
Russia	507	361	2,950	18,300	12,800	104,000
South Africa	--	--	--	283	174	437
Sweden	--	--	--	308	209	1,360
Total	2,640	1,820	15,300	33,900	23,100	176,000
All grades:						
Brazil	--	--	--	2,030	1,070	3,940
China	380	238	1,940	5,520	3,530	25,900
Germany	890	617	6,340	5,190	3,580	29,400
India	3,570	2,210	7,480	57,500	35,500	104,000
Italy	--	--	--	159	100	260
Japan	404	289	2,240	4,090	2,660	14,300
Kazakhstan	493	340	1,980	95,100	65,800	286,000
Mexico	--	--	--	38	28	123
Russia	507	361	2,950	45,000	30,200	175,000
South Africa	8,500	4,160	13,100	218,000	107,000	307,000
Sweden	19	13	74	951	609	2,560
Zimbabwe	--	--	--	33,200	19,400	87,200
Total	14,800	8,220	36,100	467,000	269,000	1,030,000

-- Zero.

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

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

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

⁶Ferrochromium 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 COUNTRY¹

Grade and country	November		January-November ²	
	Gross weight (metric tons)	Value ³ (thousands)	Gross weight (metric tons)	Value ³ (thousands)
Unwrought powders:				
China	39	\$483	356	\$3,180
France	--	--	30	90
Germany	(4)	7	38	681
Japan	--	--	36	1,610
Netherlands	--	--	20	173
Russia	--	--	322	2,240
United Kingdom	12	236	194	2,860
Total	51	726	997	10,800
Waste and scrap:				
Canada	--	--	9	49
China	--	--	66	582
Germany	--	--	(4)	10
Japan	--	--	25	397
Malaysia	--	--	25	201
Mexico	--	--	370	1,370
Singapore	(4)	14	19	323
Taiwan	--	--	2	39
Total	(4)	14	517	2,970
Other than waste and scrap and unwrought powders:				
China	120	1,360	2,140	20,300
France	38	590	2,860	35,600
Germany	25	345	237	4,200
India	--	--	126	170
Italy	--	--	1	20
Japan	1	18	17	255
Russia	244	3,170	3,340	35,400
United Kingdom	100	1,340	2,470	29,300
Total	527	6,820	11,200	125,000
All grades:				
Canada	--	--	9	49
China	159	1,850	2,560	24,000
France	38	590	2,890	35,700
Germany	25	352	275	4,890
India	--	--	126	170
Italy	--	--	1	20
Japan	1	18	78	2,260
Malaysia	--	--	25	201
Mexico	--	--	370	1,370
Netherlands	--	--	20	173
Russia	244	3,170	3,660	37,700
Singapore	(4)	14	19	323
Taiwan	--	--	2	39
United Kingdom	112	1,570	2,670	32,100
Total	579	7,560	12,700	139,000

-- Zero.

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

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

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 2008¹

Stainless steel product	November		January-November	
	Gross weight (metric tons)	Value ² (thousands)	Gross weight (metric tons)	Value ² (thousands)
Exports:				
Ingot	1,870	\$11,100	25,300	\$130,000
Flat-rolled (width > 600 mm)	12,900	42,200	241,000	831,000
Flat-rolled (width < 600 mm)	4,590	23,000	82,500	470,000
Bars and rods in irregular coils	509	2,630	7,640	41,800
Other bars and rods	3,460	25,500	39,800	279,000
Wire	961	7,100	8,460	66,700
Tubes, pipes, hollow profiles	3,790	35,900	41,500	357,000
Total	28,100	147,000	446,000	2,180,000
Stainless steel scrap	59,800	45,700	940,000	1,150,000
Grand total	87,900	193,000	1,390,000	3,320,000
Imports:				
Ingot	9,630	36,800	115,000	511,000
Flat-rolled (width > 600 mm)	17,800	61,100	330,000	1,290,000
Flat-rolled (width < 600 mm)	3,140	17,900	42,800	221,000
Bars and rods in irregular coils	2,320	8,880	26,100	122,000
Other bars and rods	7,410	44,500	93,200	554,000
Wire	3,050	18,000	36,700	232,000
Tubes, pipes, hollow profiles	8,920	86,600	97,700	899,000
Total	52,300	274,000	742,000	3,830,000
Stainless steel scrap	7,320	5,610	136,000	215,000
Grand total	59,600	279,000	877,000	4,040,000

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

²Export 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.