

# Mineral Industry Surveys

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## CHROMIUM IN NOVEMBER 2011

On the basis of gross weight, consumption of chromium ferroalloys and metal in November 2011 increased slightly compared with consumption in October 2011. Consumption in November 2011 increased by 10% compared with consumption in the November 2010, 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 November 2011, consumption by end use and consumer stocks of chromium ferroalloys and metal at the end of November 2011, and U.S. foreign trade data for selected chromium-containing materials in October 2011.

TABLE 1  
U.S. SALIENT CHROMIUM STATISTICS<sup>1</sup>

(Metric tons, gross weight)

	2010	2011			
	January– December <sup>2</sup>	September	October	November	January– November <sup>2</sup>
Production:					
Stainless steel production <sup>3</sup>	2,200,000	134,000	140,000	154,000	2,060,000
Components of U.S. supply:					
Stainless steel scrap receipts	846,000	70,700	74,500	63,800	787,000
Stainless steel scrap consumption	1,280,000	105,000	107,000	95,500	1,180,000
Imports for consumption:					
Chromite ore	139,000	37,100	5,500	(4)	143,000 <sup>5</sup>
Ferrochromium:					
More than 4% carbon	454,000	13,800	50,300	(4)	423,000 <sup>5</sup>
More than 3% but not more than 4% carbon	1,170	--	--	(4)	1,490 <sup>5</sup>
More than 0.5% but not more than 3% carbon	2,370	--	--	(4)	293 <sup>5</sup>
Not more than 0.5% carbon	49,900	1,750	4,720	(4)	47,300 <sup>5</sup>
Ferrochromium silicon	17,000	--	3,300	(4)	16,400 <sup>5</sup>
Total ferroalloy imports	524,000	15,600	58,300	(4)	489,000 <sup>5</sup>
Chromium metal <sup>6</sup>	13,000	972	1,170	(4)	11,500 <sup>5</sup>
Stainless steel	585,000	40,900	47,700	(4)	521,000 <sup>5</sup>
Stainless steel scrap	195,000	11,400	9,390	(4)	145,000 <sup>5</sup>
Distribution of U.S. supply:					
Consumption, industry, chromium ferroalloys and metal	411,000	33,300	34,200	34,500	391,000
Exports:					
Chromite ore	4,420	739	370	(4)	4,160 <sup>5</sup>
Chromium ferroalloys:					
High-carbon ferrochromium	6,530	457	111	(4)	3,750 <sup>5</sup>
Low-carbon ferrochromium	2,490	97	32	(4)	884 <sup>5</sup>
Ferrochromium silicon	106	--	--	(4)	4 <sup>5</sup>
Total ferroalloy exports	9,130	554	143	(4)	4,640 <sup>5</sup>
Chromium metal	597	66	73	(4)	481 <sup>5</sup>
Stainless steel	508,000	37,900	40,200	(4)	481,000 <sup>5</sup>
Stainless steel scrap	937,000	68,700	46,300	(4)	548,000 <sup>5</sup>
Stocks at end of period:					
Consumer, industry, chromium ferroalloys and metal	8,110	9,410	10,600	10,400	10,400
Government stockpile:					
Chromium ferroalloys	154,000	150,000	150,000	150,000	150,000
Chromium metal	4,430	4,240	4,240	4,230	4,230

<sup>1</sup>Revised. -- Zero.

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

<sup>2</sup>May include revised data that are not broken out by specific month(s).

<sup>3</sup>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.

<sup>4</sup>Data to be published in a subsequent issue.

<sup>5</sup>January through October data only.

<sup>6</sup>Includes waste and scrap and other.

TABLE 2  
U.S. REPORTED CONSUMPTION AND STOCKS OF CHROMIUM PRODUCTS<sup>1,2</sup>

(Metric tons, gross weight unless otherwise noted)

	2011		
	October	November	January– November <sup>3</sup>
Consumption by end use:			
Alloy uses:			
Steel:			
Carbon steel	324	318	3,470
High-strength low-alloy steel	218	238	2,490
Stainless and heat-resisting steel	29,300	29,700	337,000
Unspecified steel <sup>4</sup>	3,730 <sup>r</sup>	3,730	41,500
Superalloys	483	478	4,760
Other alloys and uses <sup>5</sup>	105	109	1,210
Total	34,200 <sup>r</sup>	34,500	391,000
Total, chromium content	19,900 <sup>r</sup>	20,100	228,000
Consumption by material:			
Low-carbon ferrochromium	2,390 <sup>r</sup>	2,400	26,500
High-carbon ferrochromium	29,300 <sup>r</sup>	29,600	337,000
Ferrochromium silicon	W	W	W
Chromium metal <sup>6</sup>	233	229	2,630
Chromite ore	W	W	W
Chromium-aluminum alloy	W	W	W
Other chromium materials	W	W	W
Total	34,200 <sup>r</sup>	34,500	391,000
Total, chromium content	19,900 <sup>r</sup>	20,100	228,000
Consumer stocks:			
Low-carbon ferrochromium	1,650	1,670	1,670
High-carbon ferrochromium	8,060 <sup>r</sup>	7,870	7,870
Ferrochromium silicon	W	W	W
Chromium metal	157	158	158
Chromium-aluminum alloy	W	W	W
Other chromium materials	W	W	W
Total	10,600	10,400	10,400
Total, chromium content	6,300	6,190	6,190

<sup>r</sup>Revised. W Withheld to avoid disclosing company proprietary data; included in "Total."

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

<sup>2</sup>Includes estimates.

<sup>3</sup>May include revised data that are not broken out by specific month(s).

<sup>4</sup>Includes electrical, full alloy, tool, and unspecified steel end uses.

<sup>5</sup>Includes cast irons, welding and alloy hard-facing rods and materials, wear- and corrosion-resistant alloys, and aluminum, copper, magnetic, nickel, and other alloys.

<sup>6</sup>Includes waste and scrap and other.

TABLE 3  
U.S. GOVERNMENT STOCKPILE INVENTORY OF  
CHROMIUM MATERIALS<sup>1,2</sup>

(Metric tons)

Period	Chromium ferroalloys		Chromium metal
	High-carbon ferro-chromium	Low-carbon ferro-chromium	
2010:			
November	95,400	59,000	4,430
December	95,400	59,000	4,430
2011:			
January	95,400	59,000	4,430
February	95,400	59,000	4,430
March	95,400	57,400	4,430
April	95,400	57,400	4,390
May	94,100	56,200	4,290
June	94,100	56,200	4,290
July	94,100	55,700	4,270
August	94,100	55,600	4,270
September	95,200	55,100	4,240
October	95,200	54,900	4,240
November	95,200	54,600	4,230

<sup>1</sup>Data are rounded to no more than three significant digits.

<sup>2</sup>These Government stocks are reported by the Defense Logistics Agency, DLA Strategic Materials 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 Logistics Agency, DLA Strategic Materials.

TABLE 4  
U.S. EXPORTS OF CHROMITE ORE, CHROMIUM FERROALLOYS, AND METAL<sup>1</sup>

Period	Chromite ore		Chromium ferroalloys <sup>2</sup>			Chromium metal <sup>3</sup>	
	Gross weight (metric tons)	Value (thousands)	Gross weight (metric tons)	Chromium content (metric tons)	Value (thousands)	Gross weight (metric tons)	Value (thousands)
2010:							
September	448	\$247	638	342	\$1,090	67	\$1,840
October	213	126	779	443	1,070	54	1,850
November	611	349	859	304	1,240	51	1,390
December	837	457	532	287	783	51	1,580
January–October	2,970	1,820	7,740	3,660	10,800	495	15,500
January–December <sup>4</sup>	4,420	2,620	9,130	4,250	12,900	597	18,400
2011:							
January	137	154	730	331	1,040	17	614
February	160	111	384	175	584	27	851
March	381	250	282	158	533	61	1,680
April	618	411	444	236	733	80	1,560
May	318	182	831	363	1,050	49	1,050
June	216	161	693	297	803	38	978
July	375	250	294	112	517	38	1,120
August	846	513	287	159	396	31	937
September	739	491	554	281	793	66	1,150
October	370	273	143	72	212	73	1,820
January–October	4,160	2,800	4,640	2,180	6,660	481	11,800

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

<sup>2</sup>Includes low- and high-carbon ferrochromium and ferrochromium silicon.

<sup>3</sup>Includes chromium metal, waste and scrap, and unwrought powders.

<sup>4</sup>May include revised data that are not broken out by specific month(s).

Source: U.S. Census Bureau.

TABLE 5  
U.S. IMPORTS FOR CONSUMPTION OF CHROMITE ORE, FERROCHROMIUM, AND CHROMIUM METAL<sup>1</sup>

(Metric tons)

	2010	2011		
	January– December <sup>2</sup>	September	October	January– October
<b>Chromite ore:</b>				
Not more than 40%:				
Gross weight	--	6	--	151
Chromic oxide content	--	2	--	78
More than 40% but less than 46% chromic oxide:				
Gross weight	65,400	--	3,000	27,900
Chromic oxide content	29,900	--	1,330	12,600
46% or more chromic oxide:				
Gross weight	73,700	37,100	2,500	115,000
Chromic oxide content	34,300	17,100	1,170	67,200
Total, all grades:				
Gross weight	139,000	37,100	5,500	143,000
Chromic oxide content	64,100	17,100	2,500	79,900
<b>Ferrochromium:</b>				
<b>Low-carbon:<sup>3</sup></b>				
Not more than 0.5%:				
Gross weight	49,900	1,750	4,720	47,300
Chromium content	34,300	1,240	3,260	32,700
More than 0.5% but not more than 3%:				
Gross weight	2,370	--	--	293
Chromium content	1,450	--	--	168
Total, low-carbon:				
Gross weight	52,300	1,750	4,720	47,600
Chromium content	35,700	1,240	3,260	32,900
<b>Medium-carbon:<sup>4</sup></b>				
Gross weight	1,170	--	--	1,490
Chromium content	697	--	--	840
<b>High-carbon:<sup>5</sup></b>				
Gross weight	454,000	13,800	50,300	423,000
Chromium content	261,000	7,200	29,500	242,000
Total, all grades:				
Gross weight	507,000	15,600	55,000	472,000
Chromium content	297,000	8,440	32,800	275,000
<b>Chromium metal:</b>				
Unwrought powders	1,860	273	132	2,350
Waste and scrap	544	75	43	497
Other than waste and scrap and unwrought powders	10,600	624	997	8,660
Total, all grades:	13,000	972	1,170	11,500

-- Zero.

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

<sup>2</sup>May include revised data that are not broken out by specific month(s).

<sup>3</sup>Ferrochromium containing not more than 3% carbon.

<sup>4</sup>Ferrochromium containing more than 3% carbon but not more than 4% carbon.

<sup>5</sup>Ferrochromium containing more than 4% carbon.

Source: U.S. Census Bureau.

TABLE 6  
U.S. IMPORTS FOR CONSUMPTION OF FERROCHROMIUM IN 2011, BY GRADE AND COUNTRY<sup>1</sup>

Grade and country	October			January–October <sup>2</sup>		
	Gross weight (metric tons)	Chromium content (metric tons)	Value <sup>3</sup> (thousands)	Gross weight (metric tons)	Chromium content (metric tons)	Value <sup>3</sup> (thousands)
High-carbon ferrochromium: <sup>4</sup>						
Albania	908	563	\$1,280	7,030	4,500	\$10,500
China	--	--	--	3	2	9
Finland	--	--	--	214	111	212
India	2,470	1,430	3,270	12,600	7,600	18,300
Kazakhstan	17,900	12,400	25,100	105,000	72,900	171,000
Portugal	--	--	--	501	323	719
Russia	4,110	2,750	7,640	30,000	19,800	52,200
South Africa	24,700	12,200	23,800	229,000	112,000	234,000
Sweden	250	155	425	8,930	5,940	17,900
Turkey	--	--	--	6,440	4,180	12,400
Zimbabwe	--	--	--	23,800	13,900	37,000
Total	50,300	29,500	61,500	423,000	242,000	554,000
Medium-carbon ferrochromium: <sup>5</sup>						
Belgium	--	--	--	(6)	(6)	4
India	--	--	--	95	54	105
Russia	--	--	--	1,390	786	1,020
Total	--	--	--	1,490	840	1,130
Low-carbon ferrochromium: <sup>7</sup>						
More than 0.5% but not more than 3% carbon:						
Russia	--	--	--	40	31	150
South Africa	--	--	--	253	137	541
Total	--	--	--	293	168	691
Not more than 0.5% carbon:						
Albania	--	--	--	284	197	593
Belgium	--	--	--	61	41	266
Brazil	135	81	370	1,220	729	3,170
China	20	13	107	708	466	2,460
Germany	660	461	3,250	6,030	4,220	29,100
Japan	334	232	1,680	2,300	1,610	11,700
Kazakhstan	967	681	2,730	6,700	4,700	19,600
Netherlands	--	--	--	17	11	61
Russia	2,550	1,750	8,420	27,300	18,800	88,800
South Africa	--	--	--	20	11	61
Sweden	--	--	--	20	14	103
Turkey	52	41	200	2,650	1,890	9,000
Total	4,720	3,260	16,700	47,300	32,700	165,000
All grades:						
Albania	908	563	1,280	7,310	4,700	11,100
Belgium	--	--	--	61	41	269
Brazil	135	81	370	1,220	729	3,170
China	20	13	107	711	468	2,470
Finland	--	--	--	214	111	212
Germany	660	461	3,250	6,030	4,220	29,100
India	2,470	1,430	3,270	12,700	7,650	18,400
Japan	334	232	1,680	2,300	1,610	11,700
Kazakhstan	18,900	13,100	27,800	112,000	77,600	190,000
Netherlands	--	--	--	17	11	61
Portugal	--	--	--	501	323	719
Russia	6,660	4,510	16,100	58,800	39,500	142,000
South Africa	24,700	12,200	23,800	229,000	113,000	235,000
Sweden	250	155	425	8,950	5,950	18,000
Turkey	52	41	200	9,100	6,070	21,400
Zimbabwe	--	--	--	23,800	13,900	37,000
Total	55,000	32,800	78,300	472,000	275,000	720,000

-- Zero.

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

<sup>2</sup>May include revised data that are not broken out by specific month(s).

TABLE 6—Continued  
U.S. IMPORTS FOR CONSUMPTION OF FERROCHROMIUM IN 2011, BY GRADE AND COUNTRY <sup>1</sup>

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<sup>3</sup>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.

<sup>4</sup>Ferrochromium containing more than 4% carbon.

<sup>5</sup>Ferrochromium containing more than 3% but not more than 4% carbon.

<sup>6</sup>Less than ½ unit.

<sup>7</sup>Ferrochromium containing not more than 3% carbon.

Source: U.S. Census Bureau.



TABLE 7  
U.S. IMPORTS FOR CONSUMPTION OF CHROMIUM METAL IN 2011, BY GRADE AND BY COUNTRY<sup>1</sup>

Grade and country	October		January–October <sup>2</sup>	
	Gross weight (metric tons)	Value <sup>3</sup> (thousands)	Gross weight (metric tons)	Value <sup>3</sup> (thousands)
<b>Unwrought powders:</b>				
China	51	\$840	1,470	\$20,900
France	39	747	190	3,510
Germany	1	55	12	524
India	--	--	4	55
Japan	--	--	5	205
Russia	20	256	415	5,250
United Kingdom	21	370	261	3,980
Total	132	2,270	2,350	34,400
<b>Waste and scrap:</b>				
Germany	--	--	12	200
Japan	1	100	1	100
Mexico	43	102	481	1,390
Singapore	--	--	3	54
Total	43	202	497	1,740
<b>Other than waste and scrap and unwrought powders:</b>				
China	78	1,060	1,410	19,200
France	208	3,220	1,720	27,700
Germany	(4)	45	97	1,840
Italy	(4)	10	(4)	10
Japan	1	55	14	319
Liechtenstein	--	--	(4)	11
Netherlands	--	--	57	784
Russia	410	5,430	2,910	39,700
United Kingdom	299	4,330	2,440	35,400
Total	997	14,100	8,660	125,000
<b>All grades:</b>				
China	129	1,900	2,880	40,100
France	247	3,970	1,910	31,200
Germany	2	100	121	2,570
India	--	--	4	55
Italy	(4)	10	(4)	10
Japan	2	155	19	624
Liechtenstein	--	--	(4)	11
Mexico	43	102	481	1,390
Netherlands	--	--	57	784
Russia	430	5,680	3,330	45,000
Singapore	--	--	3	54
United Kingdom	320	4,700	2,700	39,400
Total	1,170	16,600	11,500	161,000

-- Zero.

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

<sup>2</sup>May include revised data that are not broken out by specific month(s).

<sup>3</sup>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.

<sup>4</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 8  
U.S. STAINLESS STEEL TRADE, BY PRODUCT, IN 2011<sup>1</sup>

Stainless steel product	October		January–October	
	Gross weight (metric tons)	Value <sup>2</sup> (thousands)	Gross weight (metric tons)	Value <sup>2</sup> (thousands)
Exports:				
Ingot	1,680	\$11,200	65,500	\$136,000
Flat-rolled (width > 600 mm)	23,500	84,500	255,000	970,000
Flat-rolled (width < 600 mm)	6,110	27,300	65,700	290,000
Bars and rods in irregular coils	255	1,660	14,600	87,700
Other bars and rods	3,840	29,200	33,600	265,000
Wire	1,150	9,200	12,200	92,200
Tubes, pipes, hollow profiles	3,700	33,700	35,000	321,000
Total	40,200	197,000	481,000	2,160,000
Stainless steel scrap	46,300	70,300	548,000	798,000
Grand total	86,500	267,000	1,030,000	2,960,000
Imports:				
Ingot	11,300	38,800	114,000	438,000
Flat-rolled (width > 600 mm)	22,000	73,600	259,000	893,000
Flat-rolled (width < 600 mm)	3,810	16,900	38,800	175,000
Bars and rods in irregular coils	1,680	8,670	20,700	97,700
Other bars and rods	534	2,830	3,470	21,600
Wire	273	2,040	3,780	28,700
Tubes, pipes, hollow profiles	8,070	67,300	81,100	625,000
Total	47,700	210,000	521,000	2,280,000
Stainless steel scrap	9,390	12,200	145,000	262,000
Grand total	57,100	222,000	666,000	2,540,000

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

<sup>2</sup>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.