



# Mineral Industry Surveys

---

**For information, contact:**

John F. Papp, Chromium Commodity Specialist  
National Minerals Information Center  
U.S. Geological Survey  
989 National Center  
Reston, VA 20192  
Telephone: (703) 648-4963, Fax: (703) 648-7757  
Email: jpapp@usgs.gov

Benjamin N. Bryden (Data)  
Telephone: (703) 648-7953  
Fax: (703) 648-7975  
Email: bbryden@usgs.gov

**Internet:** <http://minerals.usgs.gov/minerals/>

## CHROMIUM IN DECEMBER 2016

Reported consumption of chromium in December 2016 was slightly more than that of the previous month and was 5% more than that of December 2015.

According to CRU Group, the U.S. high-carbon (60%–70% chromium) ferrochromium (FeCr) price was 125.944 cents per pound of contained chromium in December 2016, compared with 99.722 cents per pound of contained chromium in November 2016. The U.S. charge-grade FeCr (47%–55% chromium) price was 113.944 cents per pound of contained chromium in December 2016, compared with 96.111 in November 2016 (CRU Group, 2016).

### Reference Cited

CRU Group, 2016, CRU prices\_chrome\_historical data\_30 Dec 2016 (Dec. avg.): CRU Group, December 31. (Accessed January 12, 2017, via <http://www.crugroup.com/>.)

*List services and Web feed subscribers are the first to receive notification of USGS minerals information publications and data releases. For information on how to subscribe, go to <http://minerals.usgs.gov/minerals/>.*

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

(Metric tons, gross weight)

	2015	2016			
	January– December <sup>p</sup>	October	November	December	January– December <sup>2</sup>
Production, stainless steel <sup>3</sup>	2,350,000	234,000	213,000	204,000	2,480,000
Components of U.S. supply:					
Stainless steel scrap receipts	907,000	74,000	72,800	72,700	891,000
Stainless steel scrap consumption	1,330,000	113,000	110,000	107,000	1,340,000
Imports for consumption:					
Chromite ore	131,000	118	126	31,000	133,000
Ferrochromium:					
More than 4% carbon	348,000	23,500	32,400	41,500	414,000
More than 3% but not more than 4% carbon	2,590	236	--	--	11,400
More than 0.5% but not more than 3% carbon	3,960	--	31	594	7,530
Not more than 0.5% carbon	48,300	1,120	6,450	8,060	39,900
Ferrochromium silicon	5,810	--	--	--	7,300
Total ferroalloy imports	408,000	24,900	38,800	50,100	480,000
Chromium metal <sup>4</sup>	12,800	1,380	1,380	1,490	13,900
Stainless steel	1,030,000	78,800	86,100	87,700	918,000
Stainless steel scrap	192,000	20,100	20,600	17,800	263,000
Distribution of U.S. supply:					
Consumption, industry, chromium ferroalloys and metal	417,000	35,200	33,600	33,900	408,000
Exports:					
Chromite ore	7,210	252	201	486	2,760
Chromium ferroalloys:					
High-carbon ferrochromium	723	22	58	118	675
Low-carbon ferrochromium	279	98	1	37	800
Ferrochromium silicon	73	--	4	36	61
Total ferroalloy exports	1,080	120	64	191	1,540
Chromium metal	801	45	35	37	508
Stainless steel	828,000	74,800	82,000	80,700	1,020,000
Stainless steel scrap	514,000	39,400	41,900	49,200	654,000
Stocks at end of period:					
Consumer, industry, chromium ferroalloys and metal	10,100	9,630	10,400	10,200	10,200
Government stockpile:					
Chromium ferroalloys	95,700	88,100	88,100	88,100	88,100
Chromium metal	3,960	3,910	3,910	3,910	3,910

<sup>p</sup>Preliminary. -- 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>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)

	2016		
	November	December	January– December <sup>3</sup>
<b>Consumption by end use:</b>			
<b>Steel:</b>			
Carbon steel	151	148	2,000
High-strength low-alloy steel	130	131	1,580
Stainless and heat-resisting steel	30,000	30,400	365,000
Unspecified steel <sup>4</sup>	2,720	2,720	32,600
Superalloys	435 <sup>r</sup>	438	5,150
Other alloys and uses <sup>5</sup>	97	102	1,210
<b>Total</b>	<b>33,600</b>	<b>33,900</b>	<b>408,000</b>
<b>Total, chromium content</b>	<b>19,300</b>	<b>19,500</b>	<b>234,000</b>
<b>Consumption by material:</b>			
Low-carbon ferrochromium	1,800	1,760	21,300
High-carbon ferrochromium	29,200	29,600	355,000
Ferrochromium silicon	W	W	W
Chromium metal	160 <sup>r</sup>	163	1,910
Chromite ore	8	20	169
Chromium-aluminum alloy	W	W	W
Other chromium materials	W	W	W
<b>Total</b>	<b>33,600</b>	<b>33,900</b>	<b>408,000</b>
<b>Total, chromium content</b>	<b>19,300</b>	<b>19,500</b>	<b>234,000</b>
<b>Consumer stocks:</b>			
Low-carbon ferrochromium	1,460	1,530	1,530
High-carbon ferrochromium	8,050	7,800	7,800
Ferrochromium silicon	782 <sup>r</sup>	739	739
Chromium metal	W	W	W
Chromium-aluminum alloy	W	W	W
Other chromium materials	W	W	W
<b>Total</b>	<b>10,400</b>	<b>10,200</b>	<b>10,200</b>
<b>Total, chromium content</b>	<b>6,080</b>	<b>5,960</b>	<b>5,960</b>

<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.

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

(metric tons)

	Chromium ferroalloys		Chromium metal
	High-carbon ferro-chromium	Low-carbon ferro-chromium	
2015, December	63,000	32,600	3,960
2016:			
January	62,100	32,500	3,930
February	62,100	32,300	3,930
March	61,600	32,300	3,910
April	61,200	32,200	3,910
May	60,700	32,200	3,910
June	60,300	31,000	3,910
July	57,900	30,900	3,910
August	57,700	30,900	3,910
September	57,400	30,700	3,910
October	57,400	30,700	3,910
November	57,400	30,700	3,910
December	57,400	30,700	3,910

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

Source: Defense Logistics Agency, DLA Strategic Materials.

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

	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)
2015:							
December	316	\$621	83	41	\$144	25	\$973
January–December <sup>4</sup>	7,210	5,680	1,080	533	1,820	801	15,700
2016:							
January	186	121	83	50	114	25	1,100
February	227	124	73	35	108	32	1,000
March	257	173	261	160	409	31	970
April	390	269	44	27	91	39	1,330
May	101	39	265	121	427	52	1,580
June	208	157	145	80	226	98	2,040
July	159	84	58	35	98	42	1,060
August	113	57	205	99	225	42	1,150
September	176	93	27	13	36	30	996
October	252	194	120	72	253	45	1,090
November	201	86	64	37	94	35	942
December	486	252	191	87	320	37	1,080
January–December <sup>4</sup>	2,760	1,650	1,540	816	2,400	508	14,300

<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)

	2015	2016		January– December <sup>2</sup>
	January– December	November	December	
<b>Chromite ore:</b>				
More than 40% but less than 46% chromic oxide:				
Gross weight	34,600	--	1,630	22,700
Chromic oxide content	15,100	--	717	10,300
46% or more chromic oxide:				
Gross weight	96,100	126	29,300	111,000
Chromic oxide content	66,700	68	13,800	54,300
<b>Total, all grades:</b>				
Gross weight	131,000	126	31,000	133,000
Chromic oxide content	81,800	68	14,500	64,600
<b>Ferrochromium:</b>				
Low-carbon: <sup>3</sup>				
Not more than 0.5% carbon:				
Gross weight	48,300	6,450	8,060	39,900
Chromium content	32,800	4,440	5,570	26,800
More than 0.5% but not more than 3% carbon:				
Gross weight	3,960	31	594	7,530
Chromium content	2,660	20	401	4,790
<b>Total, low-carbon:</b>				
Gross weight	52,300	6,480	8,660	47,400
Chromium content	35,400	4,460	5,970	31,600
Medium-carbon: <sup>4</sup>				
Gross weight	2,590	--	--	11,400
Chromium content	1,320	--	--	5,740
High-carbon: <sup>5</sup>				
Gross weight	348,000	32,400	41,500	414,000
Chromium content	189,000	15,900	22,700	224,000
<b>Total, all grades:</b>				
Gross weight	402,000	38,800	50,100	473,000
Chromium content	226,000	20,400	28,700	261,000
<b>Chromium metal:</b>				
Unwrought powders	4,820	490	420	5,430
Waste and scrap	153	10	41	215
Other than waste and scrap and unwrought powders	7,870	877	1,030	8,240
<b>Total, all grades</b>	<b>12,800</b>	<b>1,380</b>	<b>1,490</b>	<b>13,900</b>

-- 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 2016, BY GRADE AND COUNTRY<sup>1</sup>

Grade and country	December			January–December <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)
<b>High-carbon ferrochromium:<sup>4</sup></b>						
Albania	103	70	\$127	1,640	1,110	\$1,940
Austria	74	46	71	74	46	71
Brazil	--	--	--	1,040	554	687
India	80	49	74	7,740	4,710	7,220
Kazakhstan	3,740	2,600	3,860	38,100	29,800	39,600
Oman	--	--	--	2,900	1,730	2,660
Russia	646	450	893	3,930	2,600	5,370
South Africa	25,700	12,300	19,200	320,000	158,000	224,000
Sweden	713	477	1,150	2,550	1,710	3,460
Switzerland	--	--	--	41	25	30
Turkey	10,400	6,750	14,900	29,800	19,700	36,400
Zimbabwe	--	--	--	6,120	3,460	5,920
Total	41,500	22,700	40,300	414,000	224,000	328,000
<b>Medium-carbon ferrochromium:<sup>5</sup></b>						
China	--	--	--	12	6	6
Russia	--	--	--	450	242	241
South Africa	--	--	--	11,000	5,490	8,160
Total	--	--	--	11,400	5,740	8,410
<b>Low-carbon ferrochromium:<sup>6</sup></b>						
<b>More than 0.5% but not more than 3% carbon:</b>						
Brazil	189	115	336	4,750	2,920	9,200
China	--	--	--	1,160	742	2,380
Hong Kong	--	--	--	25	15	47
Kazakhstan	--	--	--	1,160	806	2,850
South Africa	--	--	--	31	20	44
Turkey	405	287	1,010	405	287	1,010
Total	594	401	1,350	7,530	4,790	15,500
<b>Not more than 0.5% carbon:</b>						
Brazil	--	--	--	4,840	2,750	9,080
China	24	15	79	2,930	1,840	6,160
Germany	840	585	3,570	5,080	3,540	19,800
India	--	--	--	81	52	361
Japan	220	155	913	1,970	1,390	8,120
Kazakhstan	1,580	1,130	3,680	5,430	3,880	13,400
Mexico	46	31	343	136	89	883
Netherlands	--	--	--	1,510	999	3,640
Russia	4,900	3,340	12,200	14,800	10,200	36,600
South Africa	--	--	--	266	98	386
Turkey	454	318	1,160	2,800	1,950	7,350
United Kingdom	--	--	--	2	1	10
Total	8,060	5,570	21,900	39,900	26,800	106,000
<b>All grades:</b>						
Albania	103	70	127	1,640	1,110	1,940
Austria	74	46	71	74	46	71
Brazil	189	115	336	10,600	6,220	19,000
China	24	15	79	4,100	2,580	8,540
Germany	840	585	3,570	5,080	3,540	19,800
Hong Kong	--	--	--	25	15	47
India	80	49	74	7,820	4,760	7,590
Japan	220	155	913	1,970	1,390	8,120
Kazakhstan	5,320	3,730	7,540	44,700	34,500	55,800
Mexico	46	31	343	136	89	883
Netherlands	--	--	--	1,510	999	3,640
Oman	--	--	--	2,900	1,730	2,660
Russia	5,540	3,790	13,100	19,200	13,100	42,200
South Africa	25,700	12,300	19,200	331,000	164,000	233,000
Sweden	713	477	1,150	2,550	1,710	3,460

(See footnotes at end of table)

TABLE 6—continued  
U.S. IMPORTS FOR CONSUMPTION OF FERROCHROMIUM IN 2016, BY GRADE AND COUNTRY<sup>1</sup>

Grade and country	December			January–December <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)
Switzerland	--	--	--	41	25	\$30
Turkey	11,200	7,350	\$17,100	33,000	21,900	44,800
United Kingdom	--	--	--	2	1	10
Zimbabwe	--	--	--	6,120	3,460	5,920
Total	50,100	28,700	63,600	473,000	261,000	457,000

-- 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>Ferrochromium containing more than 4% carbon.

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

<sup>6</sup>Ferrochromium containing not more than 3% carbon.

Source: U.S. Census Bureau.

TABLE 7  
U.S. IMPORTS FOR CONSUMPTION OF CHROMIUM METAL IN 2016, BY GRADE AND BY COUNTRY<sup>1</sup>

Grade and country	December		January–December <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	77	\$711	1,210	\$13,400
France	--	--	632	7,300
Germany	2	68	16	479
Japan	--	--	43	466
Korea, Republic of	--	--	(4)	3
Malaysia	--	--	(4)	4
Russia	102	672	709	4,850
Taiwan	--	--	2	59
United Kingdom	239	2,580	2,830	28,900
Total	420	4,030	5,430	55,500
<b>Waste and scrap:</b>				
Canada	20	18	110	230
China	--	--	3	33
France	--	--	19	271
Germany	--	--	1	15
India	--	--	(4)	4
Japan	--	--	23	469
Russia	--	--	1	31
United Kingdom	20	102	58	419
Total	41	120	215	1,470
<b>Other than waste and scrap and unwrought powders:</b>				
Austria	--	--	11	52
Brazil	--	--	(4)	4
Canada	5	427	233	16,500
China	36	417	419	3,330
France	350	3,410	2,550	26,300
Germany	23	244	625	3,910
Hong Kong	--	--	(4)	2
Japan	--	--	7	308
Malaysia	--	--	(4)	13
Netherlands	--	--	(4)	40
New Zealand	1	21	2	61
Romania	--	--	(4)	88
Russia	563	3,810	3,950	26,900
South Africa	--	--	134	86
Spain	--	--	143	987
Switzerland	--	--	(4)	21
Taiwan	1	11	7	127
United Kingdom	45	352	160	1,670
Total	1,030	8,690	8,240	80,400
<b>All grades:</b>				
Austria	--	--	11	52
Brazil	--	--	(4)	4
Canada	25	445	343	16,700
China	113	1,130	1,630	16,700
France	350	3,410	3,200	33,900
Germany	26	311	642	4,400
Hong Kong	--	--	(4)	2
India	--	--	(4)	4
Japan	--	--	73	1,240
Korea, Republic of	--	--	(4)	3
Malaysia	--	--	(4)	17
Netherlands	--	--	(4)	40
New Zealand	1	21	2	61
Romania	--	--	(4)	88
Russia	665	4,490	4,660	31,800
South Africa	--	--	134	86

(See footnotes at end of table)



TABLE 7—continued

U.S. IMPORTS FOR CONSUMPTION OF CHROMIUM METAL IN 2016, BY GRADE AND BY COUNTRY<sup>1</sup>

Grade and country	December		January–December <sup>2</sup>	
	Gross weight (metric tons)	Value <sup>3</sup> (thousands)	Gross weight (metric tons)	Value <sup>3</sup> (thousands)
Spain	--	--	143	\$987
Switzerland	--	--	(4)	21
Taiwan	1	\$11	9	186
United Kingdom	304	3,040	3,040	31,000
Total	1,490	12,800	13,900	137,000

-- 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 2016<sup>1</sup>

Stainless steel product	December		January–December <sup>2</sup>	
	Gross weight (metric tons)	Value <sup>3</sup> (thousands)	Gross weight (metric tons)	Value <sup>3</sup> (thousands)
<b>Exports:</b>				
Ingot	2,890	\$8,330	28,300	\$117,000
Flat-rolled (width > 600 mm)	49,600	92,700	592,000	1,020,000
Flat-rolled (width < 600 mm)	7,100	25,500	91,200	345,000
Bars and rods in irregular coils	1,510	4,070	16,200	46,600
Other bars and rods	2,610	21,400	34,900	273,000
Wire	776	10,800	9,530	119,000
Tubes, pipes, hollow profiles	16,200	148,000	246,000	2,150,000
Total	80,700	310,000	1,020,000	4,070,000
Stainless steel scrap	49,200	46,900	654,000	442,000
Grand total	130,000	357,000	1,670,000	4,520,000
<b>Imports:</b>				
Ingot	15,400	46,000	110,000	463,000
Flat-rolled (width > 600 mm)	38,500	81,300	400,000	858,000
Flat-rolled (width < 600 mm)	6,140	19,600	69,100	224,000
Bars and rods in irregular coils	1,940	5,570	30,400	79,500
Other bars and rods	11,500	41,700	130,000	459,000
Wire	3,430	15,000	44,500	185,000
Tubes, pipes, hollow profiles	10,800	59,300	134,000	797,000
Total	87,700	269,000	918,000	3,070,000
Stainless steel scrap	17,800	15,100	263,000	182,000
Grand total	105,000	284,000	1,180,000	3,250,000

<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>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.