

# Mineral Industry Surveys

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## CHROMIUM IN OCTOBER 2016

Reported consumption of chromium in October 2016 was about 8% more than that of the previous month and was slightly more than that of October 2015.

According to CRU Group, U.S. high-carbon (60%–70% chromium) ferrochromium (FeCr) price was 87.00 cents per pound of contained chromium in October 2016, compared with 87.50 cents per pound of contained chromium in September 2016. The U.S. charge-grade FeCr (47%–55% chromium) price was 91.00 cents per pound of contained chromium in October 2016, compared with 89.00 in September 2016 (CRU Group, 2016).

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### Reference Cited

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

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

(Metric tons, gross weight)

	2015	2016			
	January– December <sup>p</sup>	August	September	October	January– October <sup>2</sup>
Production, stainless steel <sup>3</sup>	2,350,000	234,000	241,000	234,000	2,060,000
Components of U.S. supply:					
Stainless steel scrap receipts	907,000	73,300	73,300	74,000	746,000
Stainless steel scrap consumption	1,330,000	114,000	108,000	113,000	1,120,000
Imports for consumption:					
Chromite ore	131,000	2,430	9,600	118	102,000
Ferrochromium:					
More than 4% carbon	348,000	25,900	28,100	23,500	340,000
More than 3% but not more than 4% carbon	2,590	4,540	6,020	236	11,400
More than 0.5% but not more than 3% carbon	3,960	1,080	621	--	6,910
Not more than 0.5% carbon	48,300	3,420	1,850	1,120	25,300
Ferrochromium silicon	5,810	986	--	--	7,300
Total ferroalloy imports	408,000	35,900	36,600	24,900	391,000
Chromium metal <sup>4</sup>	12,800	985	1,060	1,380	11,000
Stainless steel	1,030,000	76,500	67,500	78,800	744,000
Stainless steel scrap	192,000	27,900	23,100	20,100	225,000
Distribution of U.S. supply:					
Consumption, industry, chromium ferroalloys and metal	417,000	34,600	32,700	35,200	340,000
Exports:					
Chromite ore	7,210	113	176	252	2,070
Chromium ferroalloys:					
High-carbon ferrochromium	723	119	--	22	498
Low-carbon ferrochromium	279	65	27	98	762
Ferrochromium silicon	73	20	--	--	20
Total ferroalloy exports	1,080	205	27	120	1,280
Chromium metal	801	42	30	45	436
Stainless steel	828,000	66,900	69,700	74,800	685,000
Stainless steel scrap	514,000	65,300	38,400	39,400	563,000
Stocks at end of period:					
Consumer, industry, chromium ferroalloys and metal	10,100	9,860	10,000	9,630	9,630
Government stockpile:					
Chromium ferroalloys	95,700	88,500	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		
	September	October	January– October <sup>3</sup>
<b>Consumption by end use:</b>			
<b>Steel:</b>			
Carbon steel	144	151	1,700
High-strength low-alloy steel	130	130	1,320
Stainless and heat-resisting steel	29,200	31,600	305,000
Unspecified steel <sup>4</sup>	2,720	2,720	27,100
Superalloys	419	430	4,270
Other alloys and uses <sup>5</sup>	101	95	1,010
<b>Total</b>	<b>32,700</b>	<b>35,200</b>	<b>340,000</b>
<b>Total, chromium content</b>	<b>18,800</b>	<b>20,100</b>	<b>195,000</b>
<b>Consumption by material:</b>			
Low-carbon ferrochromium	1,740	1,780	17,800
High-carbon ferrochromium	28,400	30,800	297,000
Ferrochromium silicon	W	W	W
Chromium metal	157	159	1,590
Chromite ore	19	8	141
Chromium-aluminum alloy	W	W	W
Other chromium materials	W	W	W
<b>Total</b>	<b>32,700</b>	<b>35,200</b>	<b>340,000</b>
<b>Total, chromium content</b>	<b>18,800</b>	<b>20,100</b>	<b>195,000</b>
<b>Consumer stocks:</b>			
Low-carbon ferrochromium	1,480	1,450	1,450
High-carbon ferrochromium	7,730	7,300	7,300
Ferrochromium silicon	716	767	767
Chromium metal	W	W	W
Chromium-aluminum alloy	W	W	W
Other chromium materials	W	W	W
<b>Total</b>	<b>10,000</b>	<b>9,630</b>	<b>9,630</b>
<b>Total, chromium content</b>	<b>5,870</b>	<b>5,590</b>	<b>5,590</b>

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 <sup>2</sup>		Chromium metal
	High-carbon ferro-chromium	Low-carbon ferro-chromium	
2015:			
October	63,000	32,900	3,960
November	63,000	32,600	3,960
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

<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:							
October	74	\$42	91	35	\$160	38	\$1,320
November	185	169	67	32	141	50	1,490
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
January–October <sup>4</sup>	2,070	1,310	1,280	692	1,990	436	12,300

<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	September	October	January– October <sup>2</sup>
<b>Chromite ore:</b>				
More than 40% but less than 46% chromic oxide:				
Gross weight	34,600	325	100	21,100
Chromic oxide content	15,100	136	45	9,550
46% or more chromic oxide:				
Gross weight	96,100	9,280	18	81,100
Chromic oxide content	66,700	5,860	18	40,500
Total, all grades:				
Gross weight	131,000	9,600	118	102,000
Chromic oxide content	81,800	6,000	63	50,000
<b>Ferrochromium:</b>				
Low-carbon: <sup>3</sup>				
Not more than 0.5% carbon:				
Gross weight	48,300	1,850	1,120	25,300
Chromium content	32,800	1,290	756	16,800
More than 0.5% but not more than 3% carbon:				
Gross weight	3,960	621	--	6,910
Chromium content	2,660	381	--	4,370
Total, low-carbon:				
Gross weight	52,300	2,470	1,120	32,300
Chromium content	35,400	1,670	756	21,200
Medium-carbon: <sup>4</sup>				
Gross weight	2,590	6,020	236	11,400
Chromium content	1,320	2,960	127	5,740
High-carbon: <sup>5</sup>				
Gross weight	348,000	28,100	23,500	340,000
Chromium content	189,000	15,100	12,100	185,000
Total, all grades:				
Gross weight	402,000	36,600	24,900	384,000
Chromium content	226,000	19,700	13,000	212,000
<b>Chromium metal:</b>				
Unwrought powders	4,820	445	574	4,520
Waste and scrap	153	9	22	165
Other than waste and scrap and unwrought powders	7,870	609	788	6,340
Total, all grades	12,800	1,060	1,380	11,000

-- 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>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	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)
<b>High-carbon ferrochromium:<sup>4</sup></b>						
Albania	322	215	\$367	1,320	892	\$1,550
Brazil	--	--	--	1,040	554	687
India	19	13	33	7,100	4,370	6,780
Kazakhstan	1,800	1,260	2,100	34,200	27,100	35,400
Oman	--	--	--	2,900	1,730	2,660
Russia	--	--	--	3,290	2,150	4,480
South Africa	21,400	10,600	14,800	264,000	131,000	183,000
Sweden	4	3	8	1,250	833	1,480
Switzerland	--	--	--	41	25	30
Turkey	--	--	--	19,300	12,800	21,100
Zimbabwe	--	--	--	6,120	3,460	5,920
Total	23,500	12,100	17,300	340,000	185,000	263,000
<b>Medium-carbon ferrochromium:<sup>5</sup></b>						
China	12	6	6	12	6	6
Russia	225	121	120	450	242	241
South Africa	--	--	--	11,000	5,490	8,160
Total	236	127	126	11,400	5,740	8,410
<b>Low-carbon ferrochromium:<sup>6</sup></b>						
More than 0.5% but not more than 3% carbon:						
Brazil	--	--	--	4,560	2,800	8,870
China	--	--	--	1,160	742	2,380
Hong Kong	--	--	--	25	15	47
Kazakhstan	--	--	--	1,160	806	2,850
Total	--	--	--	6,910	4,370	14,100
Not more than 0.5% carbon:						
Brazil	--	--	--	4,840	2,750	9,080
China	300	180	556	2,830	1,780	5,920
Germany	180	127	715	3,840	2,680	14,600
India	--	--	--	81	52	361
Japan	120	85	509	1,550	1,090	6,380
Kazakhstan	--	--	--	3,200	2,290	8,090
Mexico	--	--	--	90	58	540
Netherlands	--	--	--	1,510	999	3,640
Russia	476	344	1,380	5,000	3,510	13,200
South Africa	43	18	81	224	75	304
Turkey	--	--	--	2,180	1,520	5,770
United Kingdom	1	1	2	2	1	10
Total	1,120	756	3,240	25,300	16,800	67,900
<b>All grades:</b>						
Albania	322	215	367	1,320	892	1,550
Brazil	--	--	--	10,400	6,110	18,600
China	312	187	562	4,000	2,520	8,300
Germany	180	127	715	3,840	2,680	14,600
Hong Kong	--	--	--	25	15	47
India	19	13	33	7,180	4,420	7,140
Japan	120	85	509	1,550	1,090	6,380
Kazakhstan	1,800	1,260	2,100	38,500	30,100	46,400
Mexico	--	--	--	90	58	540
Netherlands	--	--	--	1,510	999	3,640
Oman	--	--	--	2,900	1,730	2,660
Russia	700	465	1,500	8,740	5,900	18,000
South Africa	21,400	10,700	14,900	275,000	137,000	192,000
Sweden	4	3	8	1,250	833	1,480
Switzerland	--	--	--	41	25	30
Turkey	--	--	--	21,400	14,400	26,900
United Kingdom	1	1	2	2	1	10
Zimbabwe	--	--	--	6,120	3,460	5,920

(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	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)
Total	24,900	13,000	20,700	384,000	212,000	354,000

-- 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	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	105	\$850	998	\$11,200
France	21	199	559	6,330
Germany	2	63	13	396
Japan	--	--	43	466
Korea, Republic of	--	--	(4)	3
Malaysia	--	--	(4)	4
Russia	48	318	600	4,120
Taiwan	1	30	2	59
United Kingdom	396	3,710	2,310	23,700
Total	574	5,170	4,520	46,200
<b>Waste and scrap:</b>				
Canada	12	31	83	195
China	--	--	3	33
France	--	--	19	271
India	--	--	(4)	4
Japan	5	98	21	450
Russia	--	--	1	31
United Kingdom	5	31	38	317
Total	22	160	165	1,300
<b>Other than waste and scrap and unwrought powders:</b>				
Austria	--	--	11	52
Brazil	--	--	(4)	4
Canada	32	1,740	214	15,000
China	8	133	381	2,880
France	411	4,010	1,810	19,000
Germany	33	257	541	3,410
Hong Kong	--	--	(4)	2
Japan	--	--	6	275
Malaysia	--	--	(4)	13
Netherlands	--	--	(4)	40
New Zealand	--	--	1	37
Romania	--	--	(4)	88
Russia	282	1,860	3,010	20,700
South Africa	--	--	134	86
Spain	--	--	119	822
Switzerland	--	--	(4)	21
Taiwan	--	--	(4)	5
United Kingdom	22	270	108	1,240
Total	788	8,260	6,340	63,700
<b>All grades:</b>				
Austria	--	--	11	52
Brazil	--	--	(4)	4
Canada	43	1,770	297	15,200
China	113	983	1,380	14,100
France	432	4,210	2,390	25,600
Germany	36	321	554	3,810
Hong Kong	--	--	(4)	2
India	--	--	(4)	4
Japan	5	98	70	1,190
Korea, Republic of	--	--	(4)	3
Malaysia	--	--	(4)	17
Netherlands	--	--	(4)	40
New Zealand	--	--	1	37
Romania	--	--	(4)	88
Russia	330	2,170	3,610	24,900
South Africa	--	--	134	86
Spain	--	--	119	822

(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	October		January–October <sup>2</sup>	
	Gross weight (metric tons)	Value <sup>3</sup> (thousands)	Gross weight (metric tons)	Value <sup>3</sup> (thousands)
Switzerland	--	--	(4)	21
Taiwan	1	30	2	64
United Kingdom	424	4,010	2,450	25,200
Total	1,380	13,600	11,000	111,000

-- 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	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>Exports:</b>				
Ingot	2,180	\$9,520	22,500	\$99,300
Flat-rolled (width > 600 mm)	54,000	90,800	494,000	846,000
Flat-rolled (width < 600 mm)	8,670	31,600	76,000	288,000
Bars and rods in irregular coils	1,620	4,500	13,400	38,800
Other bars and rods	3,300	25,400	29,500	228,000
Wire	807	9,650	8,000	99,100
Tubes, pipes, hollow profiles	4,220	41,000	42,500	362,000
Total	74,800	212,000	685,000	1,960,000
Stainless steel scrap	39,400	36,300	563,000	354,000
Grand total	114,000	249,000	1,250,000	2,310,000
<b>Imports:</b>				
Ingot	10,300	35,300	81,400	378,000
Flat-rolled (width > 600 mm)	37,000	79,500	324,000	694,000
Flat-rolled (width < 600 mm)	6,170	19,300	57,300	185,000
Bars and rods in irregular coils	2,800	7,290	25,800	67,000
Other bars and rods	9,240	32,600	107,000	377,000
Wire	3,340	14,000	36,800	153,000
Tubes, pipes, hollow profiles	9,980	61,700	112,000	672,000
Total	78,800	250,000	744,000	2,530,000
Stainless steel scrap	20,100	16,300	225,000	151,000
Grand total	98,900	266,000	969,000	2,680,000

<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.