

Mineral Industry Surveys

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CHROMIUM IN DECEMBER 2015

On the basis of gross quantity, consumption of chromium ferroalloys and metal in December 2015 decreased by about 5% compared to that of November 2015. Consumption in December 2015 decreased by 8% compared with that of December 2014.

According to CRU Group, ferrochromium spot prices have generally declined since May 2014 to about \$0.80 per pound from a range of \$0.85 to \$1.00 per pound. Weak stainless steel demand in China, the prospect of increased ferrochromium supply from India, and a depreciation of the South African Rand contributed to the decline of ferrochromium prices in 2016. Zimasco (Zimbabwe) shut down the last two furnaces that it was operating. The Yildirim Group's Tikhvin ferrochromium plant (Russia) closed as a result of a plant fire. The Yildirim Group was expected to compensate for production loss at Tikhvin with

increased production at its plants in Sweden and Turkey (CRU Group, 2015).

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Reference Cited

CRU Group, 2015, CRU Monitor Chrome: London, United Kingdom, CRU Group, December 11, 12 p.

TABLE 1
U.S. SALIENT CHROMIUM STATISTICS¹

(Metric tons)

	2014	2015			January– December ²
	January– December ^{p, 2}	October	November	December	
Production, stainless steel ³	2,390,000	191,000	159,000	166,000	2,350,000
Components of U.S. supply:					
Stainless steel scrap receipts	921,000	78,600	75,000 ^r	62,900	908,000
Stainless steel scrap consumption	1,320,000	114,000	113,000 ^r	92,800	1,320,000
Imports for consumption:					
Chromite ore	169,000	4,430	3,750	2,210	131,000
Ferrochromium:					
More than 4% carbon	595,000	24,100	11,200	5,170	347,000
More than 3% but not more than 4% carbon	3,040	--	--	1,820	2,590
More than 0.5% but not more than 3% carbon	14,500	--	100	81	3,960
Not more than 0.5% carbon	43,400	2,030	5,070	1,830	48,400
Ferrochromium silicon	17,400	1,560	27	--	5,810
Total ferroalloy imports	673,000	27,600	16,400	8,900	408,000
Chromium metal ⁴	17,400	822	713	809	12,900
Stainless steel	729,000	49,600	42,400	51,500	700,000
Stainless steel scrap	329,000	12,800	13,500	14,200	192,000
Distribution of U.S. supply:					
Consumption, industry, chromium ferroalloys and metal	432,000	35,000	34,000	32,400	419,000
Exports:					
Chromite ore	6,060	74	185	316	7,210
Chromium ferroalloys:					
High-carbon ferrochromium	3,850	20	44	32	740
Low-carbon ferrochromium	839	71	23	9	279
Ferrochromium silicon	36	--	--	42	73
Total ferroalloy exports	4,730	91	67	83	1,090
Chromium metal	658	38	50	25	800
Stainless steel	803,000	66,200	58,500	59,800	809,000
Stainless steel scrap	548,000	43,700	48,700	38,100	520,000
Stocks at end of period:					
Consumer, industry, chromium ferroalloys and metal	10,600	10,000	10,400	10,300	10,300
Government stockpile:					
Chromium ferroalloys	108,000	95,900	95,700	95,700	95,700
Chromium metal	3,960	3,960	3,960	3,960	3,960

^pPreliminary. ^rRevised. -- 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(s).

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.

⁴Includes waste and scrap and other.

TABLE 2
U.S. REPORTED CONSUMPTION AND STOCKS OF CHROMIUM PRODUCTS^{1,2}

(Metric tons)

	2015		
	November	December	January– December ³
Consumption by end use:			
Steel:			
Carbon steel	137 ^r	147	2,160
High-strength low-alloy steel	132	137	1,720
Stainless and heat-resisting steel	30,500	28,800	374,000
Unspecified steel ⁴	2,720	2,720	34,600
Superalloys	425	443	5,140
Other alloys and uses ⁵	96	114	1,280
Total	34,000	32,400	419,000
Total, chromium content	19,600	18,700	241,000
Consumption by material:			
Low-carbon ferrochromium	1,760 ^r	1,760	22,300
High-carbon ferrochromium	29,600	28,000	365,000
Ferrochromium silicon	W	W	W
Chromium metal	159	176	1,930
Chromite ore	15	27	233
Chromium-aluminum alloy	W	W	W
Other chromium materials	W	W	W
Total	34,000	32,400	419,000
Total, chromium content	19,600	18,700	241,000
Consumer stocks:			
Low-carbon ferrochromium	1,470	1,490	1,490
High-carbon ferrochromium	8,050	7,920	7,920
Ferrochromium silicon	776	750	750
Chromium metal	44	47	47
Chromium-aluminum alloy	W	27	27
Other chromium materials	W	W	W
Total	10,400	10,300	10,300
Total, chromium content	6,090	6,000	6,000

^rRevised. W Withheld to avoid disclosing company proprietary data; included in "Total."

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(s).

⁴Includes electrical, full alloy, tool, and unspecified steel end uses.

⁵Includes 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 MATERIALS¹

(Metric tons)

	Chromium ferroalloys		Chromium metal
	High-carbon ferro-chromium	Low-carbon ferro-chromium	
2014:			
December	73,500	34,600	3,960
2015:			
January	70,700	34,200	3,960
February	70,700	34,200	3,960
March	69,700	34,100	3,960
April	69,700	34,000	3,960
May	67,100	33,700	3,960
June	64,100	33,400	3,960
July	63,000	33,300	3,960
August	63,000	33,200	3,960
September	63,000	32,900	3,960
October	63,000	32,900	3,960
November	63,000	32,600	3,960
December	63,000	32,600	3,960

¹Data 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 METAL¹

	Chromite ore		Chromium ferroalloys ²			Chromium metal ³	
	Quantity (metric tons)	Value (thousands)	Quantity (metric tons)	Chromium content (metric tons)	Value (thousands)	Quantity (metric tons)	Value (thousands)
2014:							
December	105	\$80	237	120	\$354	26	\$857
January–December ⁴	6,060	4,150	4,730	2,290	8,060	658	17,900
2015:							
January	1,110	621	218	111	399	33	746
February	153	165	132	66	190	100	1,820
March	1,350	818	130	76	232	128	1,690
April	318	779	106	55	172	160	2,120
May	1,990	1,530	27	16	60	97	1,040
June	1,250	688	22	13	46	32	821
July	180	96	70	33	115	48	1,380
August	188	106	26	15	48	55	1,330
September	95	50	120	53	154	31	937
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 ⁴	7,210	5,680	1,090	545	1,860	800	15,700

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(s).

Source: U.S. Census Bureau.

TABLE 5
U.S. IMPORTS FOR CONSUMPTION OF CHROMITE ORE, FERROCHROMIUM, AND
CHROMIUM METAL¹

(Metric tons)

	2014	2015		
	January– December ²	November	December	January– December ²
Chromite ore:				
Not more than 40% chromic oxide:				
Quantity	27	--	--	--
Chromic oxide content	6	--	--	--
More than 40% but less than 46% chromic oxide:				
Quantity	45,900	--	1,550	34,600
Chromic oxide content	21,000	--	693	15,100
46% or more chromic oxide:				
Quantity	123,000	3,750	662	96,100
Chromic oxide content	64,300	1,750	335	66,700
Total, all grades:				
Quantity	169,000	3,750	2,210	131,000
Chromic oxide content	85,200	1,750	1,030	81,800
Ferrochromium:				
Low-carbon: ³				
Not more than 0.5% carbon:				
Quantity	43,400	5,070	1,830	48,400
Chromium content	29,600	3,390	1,120	32,800
More than 0.5% but not more than 3% carbon:				
Quantity	14,500	100	81	3,960
Chromium content	10,000	61	57	2,660
Total, low-carbon:				
Quantity	57,900	5,170	1,910	52,400
Chromium content	39,700	3,450	1,180	35,500
Medium-carbon: ⁴				
Quantity	3,040	--	1,820	2,590
Chromium content	1,470	--	926	1,320
High-carbon: ⁵				
Quantity	595,000	11,200	5,170	347,000
Chromium content	327,000	6,300	2,820	189,000
Total, all grades:				
Quantity	656,000	16,300	8,900	402,000
Chromium content	368,000	9,750	4,920	226,000
Chromium metal:				
Unwrought powders	5,540	415	331	4,840
Waste and scrap	98	11	30	153
Other than waste and scrap and unwrought powders	11,800	287	447	7,890
Total, all grades	17,400	713	809	12,900

-- 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(s).

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.

Source: U.S. Census Bureau.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF FERROCHROMIUM IN 2015, BY GRADE AND COUNTRY¹

Grade and country	December			January–December ²		
	Quantity (metric tons)	Chromium content (metric tons)	Value ³ (thousands)	Quantity (metric tons)	Chromium content (metric tons)	Value ³ (thousands)
High-carbon ferrochromium:⁴						
Albania	--	--	--	3,210	2,200	\$4,580
Brazil	--	--	--	1,070	592	1,130
China	--	--	--	63	39	97
Finland	--	--	--	4,530	2,470	4,260
India	297	190	\$295	17,700	10,900	19,600
Kazakhstan	--	--	--	33,200	20,900	45,900
Mexico	--	--	--	80	55	156
Oman	--	--	--	3,000	1,610	2,740
Russia	404	280	485	24,000	16,100	35,300
South Africa	4,160	2,140	2,780	203,000	102,000	180,000
Sweden	312	209	429	349	234	509
Turkey	--	--	--	16,700	10,500	21,500
Zimbabwe	--	--	--	40,000	21,900	40,000
Total	5,170	2,820	3,990	347,000	189,000	355,000
Medium-carbon ferrochromium, South Africa ⁵	1,820	926	1,780	2,590	1,320	2,180
Low-carbon ferrochromium:⁶						
More than 0.5% but not more than 3% carbon:						
Brazil	--	--	--	162	98	395
China	--	--	--	279	170	617
Kazakhstan	--	--	--	1,220	870	2,990
Poland	--	--	--	120	73	237
Russia	--	--	--	1,620	1,140	4,360
South Africa	--	--	--	472	257	824
Turkey	81	57	225	81	57	225
Total	81	57	225	3,960	2,660	9,650
Not more than 0.5% carbon:						
Belgium	--	--	--	220	153	715
Brazil	1,230	751	2,400	2,900	1,790	5,790
China	27	16	54	4,990	3,030	11,000
Germany	240	168	951	5,800	4,070	21,500
India	--	--	--	70	28	194
Japan	309	169	1,020	2,960	2,020	12,000
Kazakhstan	--	--	--	638	455	1,640
Mexico	5	3	25	39	24	194
Russia	20	14	76	29,300	20,300	84,300
South Africa	--	--	--	708	430	1,730
Turkey	--	--	--	747	518	2,270
Total	1,830	1,120	4,530	48,400	32,800	141,000
All grades:						
Albania	--	--	--	3,210	2,200	4,580
Belgium	--	--	--	220	153	715
Brazil	1,230	751	2,400	4,130	2,480	7,320
China	27	16	54	5,330	3,240	11,700
Finland	--	--	--	4,530	2,470	4,260
Germany	240	168	951	5,800	4,070	21,500
India	297	190	295	17,800	10,900	19,800
Japan	309	169	1,020	2,960	2,020	12,000
Kazakhstan	--	--	--	35,000	22,300	50,600
Mexico	5	3	25	118	80	349
Oman	--	--	--	3,000	1,610	2,740
Poland	--	--	--	120	73	237
Russia	424	293	561	54,900	37,500	124,000
South Africa	5,980	3,070	4,560	207,000	104,000	184,000
Sweden	312	209	429	349	234	509
Turkey	81	57	225	17,600	11,100	24,000
Zimbabwe	--	--	--	40,000	21,900	40,000
Total	8,900	4,920	10,500	402,000	226,000	508,000

(See footnotes at end of table)

TABLE 6—continued
 U.S. IMPORTS FOR CONSUMPTION OF FERROCHROMIUM IN 2015, BY GRADE AND COUNTRY¹

Grade and country	December			January–December ²		
	Quantity (metric tons)	Chromium content (metric tons)	Value ³ (thousands)	Quantity (metric tons)	Chromium content (metric tons)	Value ³ (thousands)

-- 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(s).

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 2015, BY GRADE AND BY COUNTRY¹

Grade and country	December		January–December ²	
	Quantity (metric tons)	Value ³ (thousands)	Quantity (metric tons)	Value ³ (thousands)
Unwrought powders:				
Austria	--	--	9	\$132
China	90	\$1,090	2,000	21,400
France	19	200	477	6,370
Germany	(4)	11	6	215
India	--	--	19	210
Japan	--	--	61	942
Russia	(4)	6	233	1,900
Taiwan	1	30	2	59
United Kingdom	221	2,350	2,040	22,500
Total	331	3,680	4,840	53,800
Waste and scrap:				
Austria	--	--	1	4
Brazil	3	10	3	10
Canada	7	38	24	140
China	--	--	7	104
France	--	--	7	37
Germany	--	--	14	76
Japan	19	108	63	686
Mexico	--	--	10	67
Singapore	--	--	1	23
Taiwan	--	--	5	115
United Kingdom	1	21	16	171
Total	30	177	153	1,430
Other than waste and scrap and unwrought powders:				
Argentina	--	--	(4)	7
Belize	--	--	(4)	19
Canada	26	2,080	179	13,800
China	20	399	2,070	18,600
France	213	2,100	2,190	26,100
Germany	14	128	232	2,320
Japan	(4)	28	3	165
Malaysia	--	--	2	86
Netherlands	2	65	50	729
New Zealand	--	--	1	41
Russia	136	1,010	2,990	25,600
Spain	24	187	82	631
Taiwan	2	39	2	42
United Kingdom	10	133	91	1,340
Total	447	6,170	7,890	89,600
All grades:				
Argentina	--	--	(4)	7
Austria	--	--	10	136
Belize	--	--	(4)	19
Brazil	3	10	3	10
Canada	33	2,110	203	14,000
China	110	1,490	4,080	40,100
France	232	2,300	2,680	32,600
Germany	14	138	252	2,610
India	--	--	19	210
Japan	20	136	127	1,790
Malaysia	--	--	2	86
Mexico	--	--	10	67
Netherlands	2	65	50	729
New Zealand	--	--	1	41
Russia	137	1,020	3,220	27,500
Singapore	--	--	1	23
Spain	24	187	82	631
Taiwan	3	68	9	217
United Kingdom	232	2,500	2,150	24,000
Total	809	10,000	12,900	145,000

(See footnotes at end of table)

TABLE 7—continued
U.S. IMPORTS FOR CONSUMPTION OF CHROMIUM METAL IN 2015, BY GRADE AND BY COUNTRY¹

Grade and country	December		January–December ²	
	Quantity (metric tons)	Value ³ (thousands)	Quantity (metric tons)	Value ³ (thousands)

-- 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(s).

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 2015¹

Stainless steel product	December		January–December ²	
	Quantity (metric tons)	Value ³ (thousands)	Quantity (metric tons)	Value ³ (thousands)
Exports:				
Ingot	2,840	\$10,600	31,700	\$139,000
Flat-rolled (width > 600 mm)	44,900	78,900	607,000	1,340,000
Flat-rolled (width < 600 mm)	5,180	19,800	79,000	313,000
Bars and rods in irregular coils	853	2,250	5,920	19,900
Other bars and rods	2,310	18,800	37,000	300,000
Wire	767	10,800	7,920	108,000
Tubes, pipes, hollow profiles	2,870	33,200	40,100	366,000
Total	59,800	174,000	809,000	2,580,000
Stainless steel scrap	38,100	47,000	520,000	639,000
Grand total	97,800	221,000	1,330,000	3,220,000
Imports:				
Ingot	8,890	38,300	120,000	396,000
Flat-rolled (width > 600 mm)	24,300	52,100	359,000	871,000
Flat-rolled (width < 600 mm)	6,730	21,700	61,500	217,000
Bars and rods in irregular coils	2,260	6,230	37,000	124,000
Other bars and rods	207	1,190	4,370	25,100
Wire	783	4,170	10,100	56,300
Tubes, pipes, hollow profiles	8,370	49,500	108,000	762,000
Total	51,500	173,000	700,000	2,450,000
Stainless steel scrap	14,200	9,100	192,000	165,000
Grand total	65,700	182,000	892,000	2,620,000

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(s).

³Export 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.