

Mineral Industry Surveys

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CHROMIUM IN OCTOBER 2015

On the basis of gross quantity, consumption of chromium ferroalloys and metal in October 2015 was about the same as that of September 2015. Consumption in October 2015 decreased 5% compared with that of October 2014.

Decreased manufacturing output in China resulted in decreased Chinese ferritic stainless steel output. High-carbon ferrochromium prices decreased in Asia as Asian stainless steel manufacturers reduced high-carbon ferrochromium consumption and reduced tender price. It was estimated that China's ferritic stainless steel production in 2015 would be about 9% less than that of 2014. In addition, Tata Steel's tolling agreement with Nava Bharat (India) could permit their production to increase from its current level of 30,000 t/yr of high-carbon ferrochromium to as much as 70,000 t/yr. Stainless steel 2015 production in Europe was expected to be about the same as that of 2014; however, the price of high-grade high-carbon ferrochromium in Europe increased, apparently owing to concern

about high-carbon ferrochromium supply from South Africa. ASA Metals (South Africa), which produces low-phosphorus ferrochromium used predominantly in Europe, was expected to have difficulty continuing production owing to ferrochromium price decline in China and supply issues with their chromite ore supplier. (CRU Group, 2015).

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Reference Cited

CRU Group, 2015, CRU Monitor Chrome: London, United Kingdom, CRU Group, October 9, 9 p.

TABLE 1
U.S. SALIENT CHROMIUM STATISTICS¹

(Metric tons)

	2014	2015			
	January– December ^{p, 2}	August	September	October	January– October ²
Production, stainless steel ³	2,390,000	206,000	178,000	191,000	2,020,000
Components of U.S. supply:					
Stainless steel scrap receipts	921,000	78,500	76,500 ^r	78,600	770,000
Stainless steel scrap consumption	1,320,000	115,000	107,000 ^r	114,000	1,120,000
Imports for consumption:					
Chromite ore	169,000	41,300	1,880	4,430	125,000
Ferrochromium:					
More than 4% carbon	595,000	38,500	18,500	24,100	331,000
More than 3% but not more than 4% carbon	3,040	729	39	--	768
More than 0.5% but not more than 3% carbon	14,500	--	--	--	3,780
Not more than 0.5% carbon	43,400	5,510	1,230	2,030	41,500
Ferrochromium silicon	17,400	--	--	1,560	5,780
Total ferroalloy imports	673,000	44,700	19,800	27,600	383,000
Chromium metal ⁴	17,400	1,450	976	822	11,400
Stainless steel	729,000	50,200	42,100	49,600	606,000
Stainless steel scrap	329,000	15,200	17,100	12,800	165,000
Distribution of U.S. supply:					
Consumption, industry, chromium ferroalloys and metal	432,000	35,200	35,000 ^r	35,000	353,000
Exports:					
Chromite ore	6,060	188	95	74	6,700
Chromium ferroalloys:					
High-carbon ferrochromium	3,850	26	96	20	664
Low-carbon ferrochromium	839	--	25	71	247
Ferrochromium silicon	36	--	--	--	31
Total ferroalloy exports	4,730	26	120	91	942
Chromium metal	658	55	31	38	724
Stainless steel	803,000	75,900	69,700	66,200	690,000
Stainless steel scrap	548,000	46,100	40,400	43,700	433,000
Stocks at end of period:					
Consumer, industry, chromium ferroalloys and metal	10,600	10,100	10,400 ^r	10,000	10,000
Government stockpile:					
Chromium ferroalloys	108,000	96,200	95,900	95,900	95,900
Chromium metal	3,960	3,960	3,960	3,960	3,960

^pPreliminary. -- 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		
	September	October	January– October ³
Consumption by end use:			
Steel:			
Carbon steel	160	209	1,880
High-strength low-alloy steel	142	152	1,450
Stainless and heat-resisting steel	31,400 ^r	31,400	315,000
Unspecified steel ⁴	2,770 ^r	2,720	29,200
Superalloys	419	437	4,270
Other alloys and uses ⁵	97	97	1,070
Total	35,000 ^r	35,000	353,000
Total, chromium content	20,100 ^r	20,100	203,000
Consumption by material:			
Low-carbon ferrochromium	1,820 ^r	1,850	18,800
High-carbon ferrochromium	30,500 ^r	30,500	308,000
Ferrochromium silicon	W	W	W
Chromium metal	156	160	1,600
Chromite ore	13	15	191
Chromium-aluminum alloy	W	W	W
Other chromium materials	W	W	W
Total	35,000 ^r	35,000	353,000
Total, chromium content	20,100 ^r	20,100	203,000
Consumer stocks:			
Low-carbon ferrochromium	1,470	1,460	1,460
High-carbon ferrochromium	8,080 ^r	7,700	7,700
Ferrochromium silicon	746 ^r	748	748
Chromium metal	51	47	47
Chromium-aluminum alloy	W	W	W
Other chromium materials	W	W	W
Total	10,400 ^r	10,000	10,000
Total, chromium content	6,210 ^r	5,820	5,820

^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:			
October	NA	NA	NA
November	NA	NA	NA
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

NA Not Available.

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:							
October	1,050	\$629	353	162	\$574	28	\$894
November	256	112	322	147	533	68	1,240
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
January–October ⁴	6,700	4,890	942	473	1,580	724	13,200

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	September	October	January– October 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	378	1,580	33,100
Chromic oxide content	21,000	164	696	14,500
46% or more chromic oxide:				
Quantity	123,000	1,500	2,850	91,700
Chromic oxide content	64,300	696	1,390	64,600
Total, all grades:				
Quantity	169,000	1,880	4,430	125,000
Chromic oxide content	85,200	860	2,090	79,100
Ferrochromium:				
Low-carbon: ³				
Not more than 0.5% carbon:				
Quantity	43,400	1,230	2,030	41,500
Chromium content	29,600	813	1,380	28,300
More than 0.5% but not more than 3% carbon:				
Quantity	14,500	--	--	3,780
Chromium content	10,000	--	--	2,540
Total, low-carbon:				
Quantity	57,900	1,230	2,030	45,300
Chromium content	39,700	813	1,380	30,800
Medium-carbon: ⁴				
Quantity	3,040	39	--	768
Chromium content	1,470	20	--	392
High-carbon: ⁵				
Quantity	595,000	18,500	24,100	331,000
Chromium content	327,000	9,620	12,200	180,000
Total, all grades:				
Quantity	656,000	19,800	26,100	377,000
Chromium content	368,000	10,500	13,600	211,000
Chromium metal:				
Unwrought powders	5,540	226	448	4,100
Waste and scrap	98	19	12	111
Other than waste and scrap and unwrought powders	11,800	731	363	7,160
Total, all grades	17,400	976	822	11,400

-- 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	October			January–October 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	216	144	\$298	3,110	2,140	\$4,450
Brazil	729	380	557	729	380	557
China	--	--	--	63	39	97
Finland	3,000	1,640	2,840	3,030	1,650	2,850
India	2,630	1,640	2,940	17,100	10,500	19,000
Kazakhstan	8,710	3,960	13,600	33,100	20,900	45,800
Mexico	--	--	--	80	55	156
Oman	426	227	359	2,780	1,500	2,560
Russia	--	--	--	23,500	15,700	34,700
South Africa	8,340	4,260	6,810	194,000	96,500	173,000
Sweden	--	--	--	36	25	79
Turkey	--	--	--	16,700	10,500	21,500
Zimbabwe	--	--	--	37,000	20,100	36,900
Total	24,100	12,200	27,400	331,000	180,000	341,000
Medium-carbon ferrochromium, South Africa ⁵	--	--	--	768	392	406
Low-carbon ferrochromium:⁶						
More than 0.5% but not more than 3% carbon:						
Brazil	--	--	--	162	98	395
China	--	--	--	199	120	445
Kazakhstan	--	--	--	1,220	870	2,990
Poland	--	--	--	120	73	237
Russia	--	--	--	1,620	1,140	4,360
South Africa	--	--	--	452	246	787
Total	--	--	--	3,780	2,540	9,210
Not more than 0.5% carbon:						
Belgium	100	69	322	220	153	715
Brazil	229	142	501	796	490	1,790
China	420	254	849	4,710	2,870	10,400
Germany	440	309	1,560	5,160	3,620	19,100
India	--	--	--	70	28	194
Japan	239	168	977	2,430	1,690	10,000
Kazakhstan	--	--	--	638	455	1,640
Mexico	--	--	--	32	20	160
Russia	360	265	1,230	26,000	18,000	74,800
South Africa	--	--	--	708	430	1,730
Turkey	245	169	725	707	492	2,160
Total	2,030	1,380	6,170	41,500	28,300	123,000
All grades:						
Albania	216	144	298	3,110	2,140	4,450
Belgium	100	69	322	220	153	715
Brazil	958	522	1,060	1,690	968	2,740
China	420	254	849	4,970	3,030	10,900
Finland	3,000	1,640	2,840	3,030	1,650	2,850
Germany	440	309	1,560	5,160	3,620	19,100
India	2,630	1,640	2,940	17,200	10,500	19,200
Japan	239	168	977	2,430	1,690	10,000
Kazakhstan	8,710	3,960	13,600	35,000	22,200	50,500
Mexico	--	--	--	112	75	316
Oman	426	227	359	2,780	1,500	2,560
Poland	--	--	--	120	73	237
Russia	360	265	1,230	51,200	34,900	114,000
South Africa	8,340	4,260	6,810	196,000	97,500	176,000
Sweden	--	--	--	36	25	79
Turkey	245	169	725	17,500	11,000	23,600
Zimbabwe	--	--	--	37,000	20,100	36,900
Total	26,100	13,600	33,600	377,000	211,000	474,000

See footnotes at end of table.

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

-- 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	October		January–October ²	
	Quantity (metric tons)	Value ³ (thousands)	Quantity (metric tons)	Value ³ (thousands)
Unwrought powders:				
Austria	--	--	9	\$132
China	85	\$1,120	1,800	19,400
France	57	781	390	5,270
Germany	(4)	27	6	204
India	--	--	19	210
Japan	(4)	15	41	647
Russia	40	320	192	1,570
Taiwan	--	--	1	30
United Kingdom	266	2,710	1,640	18,300
Total	448	4,970	4,100	45,700
Waste and scrap:				
Austria	--	--	1	4
Canada	3	18	8	53
China	--	--	7	104
France	--	--	7	37
Germany	8	53	14	76
Japan	--	--	44	578
Mexico	--	--	10	67
Singapore	--	--	1	23
Taiwan	--	--	5	115
United Kingdom	--	--	13	142
Total	12	71	111	1,200
Other than waste and scrap and unwrought powders:				
Argentina	--	--	(4)	7
Belize	--	--	(4)	19
Canada	24	1,830	136	10,500
China	27	96	2,030	18,100
France	95	1,210	1,840	22,600
Germany	12	132	218	2,170
Japan	(4)	7	3	138
Malaysia	(4)	6	2	79
Netherlands	--	--	47	607
New Zealand	(4)	10	1	41
Russia	204	1,450	2,770	24,000
Spain	--	--	58	444
Taiwan	--	--	(4)	4
United Kingdom	--	--	51	804
Total	363	4,740	7,160	79,500
All grades:				
Argentina	--	--	(4)	7
Austria	--	--	10	136
Belize	--	--	(4)	19
Canada	27	1,850	144	10,500
China	112	1,220	3,830	37,600
France	152	1,990	2,240	27,900
Germany	21	212	238	2,450
India	--	--	19	210
Japan	(4)	22	88	1,360
Malaysia	(4)	6	2	79
Mexico	--	--	10	67
Netherlands	--	--	47	607
New Zealand	(4)	10	1	41
Russia	244	1,770	2,960	25,600
Singapore	--	--	1	23
Spain	--	--	58	444
Taiwan	--	--	6	148
United Kingdom	266	2,710	1,710	19,300
Total	822	9,790	11,400	126,000

See footnotes at end of table.

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

-- 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	October		January–October ²	
	Quantity (metric tons)	Value ³ (thousands)	Quantity (metric tons)	Value ³ (thousands)
Exports:				
Ingot	2,190	\$11,500	26,600	\$119,000
Flat-rolled (width > 600 mm)	50,900	94,800	519,000	1,180,000
Flat-rolled (width < 600 mm)	5,770	22,600	68,000	271,000
Bars and rods in irregular coils	355	1,140	4,480	16,200
Other bars and rods	3,280	26,900	31,700	256,000
Wire	727	8,780	6,490	87,900
Tubes, pipes, hollow profiles	2,980	29,300	33,800	301,000
Total	66,200	195,000	690,000	2,230,000
Stainless steel scrap	43,700	53,100	433,000	533,000
Grand total	110,000	248,000	1,120,000	2,770,000
Imports:				
Ingot	7,580	38,000	103,000	325,000
Flat-rolled (width > 600 mm)	25,300	56,600	315,000	772,000
Flat-rolled (width < 600 mm)	5,160	17,500	50,200	179,000
Bars and rods in irregular coils	2,440	6,940	32,500	110,000
Other bars and rods	739	3,450	3,760	21,800
Wire	654	3,590	8,510	47,800
Tubes, pipes, hollow profiles	7,740	57,100	93,100	667,000
Total	49,600	183,000	606,000	2,120,000
Stainless steel scrap	12,800	10,200	165,000	146,000
Grand total	62,400	193,000	771,000	2,270,000

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.