

# Mineral Industry Surveys

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## MANGANESE IN DECEMBER 2015

Preliminary data for December 2015 indicated that domestic consumption of manganese ore containing more than 20% manganese, exclusive of that consumed at iron and steel plants, was 36,300 metric tons (t) (gross weight). This was an 11% increase compared with the amount consumed in November 2015 (32,800 t). Manganese ore consumption during 2015 was about 439,000 t, 21% less than the revised amount consumed during 2014 (554,000 t). Industry stocks of ore at the end of December 2015 were estimated to be 165,000 t, which was a 12% decrease from the amount at the end of November 2015 (188,000 t).

Combined U.S. imports of manganese dioxide and manganese ore (contained weight) were 13% greater in December 2015 compared to the revised amount imported in November 2015. The combined imports of these materials were 18% higher during 2015 compared with those during 2014 (table 2). The amounts of manganese ore (gross weight) that were consumed and imported from December 2013 through December 2015 are shown in figure 1.

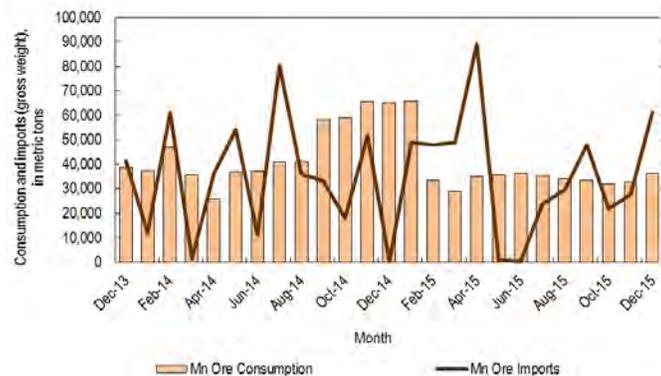


Figure 1. Monthly domestic consumption and imports of manganese (Mn) ore from December 2013 through December 2015. Sources: U.S. Census Bureau and U.S. Geological Survey.

Average spot-market prices for three grades of manganese ore delivered to China from December 2013 through December

2015 are shown in figure 2. In December 2015, the average mid-level spot prices were \$1.81 per metric ton unit, 36%–39% grade; \$2.16 per metric ton unit, 44% grade; and \$2.29 per metric ton unit, 46% grade (fig. 2, table 1). These were all significantly lower than manganese ore prices at the start of 2015—50% less for both the 44% and 46% grades and 51% less for the 36%–39% grade. Compared with December 2013 prices, the average monthly prices were considerably lower—59% less for both the 36%–39% and 44% ore grades and 58% less for the 46% ore grade.

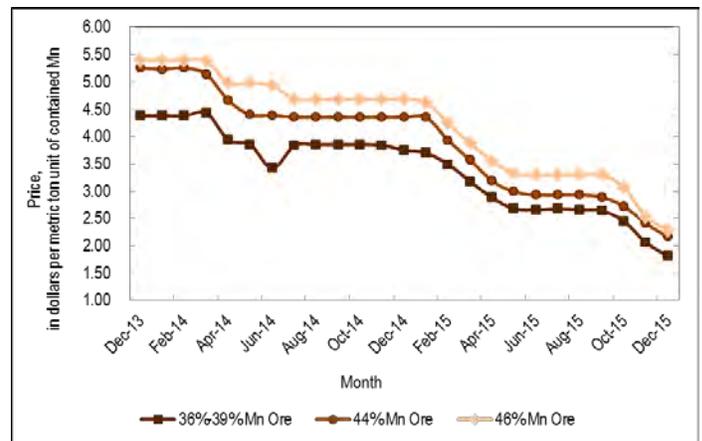


Figure 2. Average monthly spot prices for manganese (Mn) ore deliveries to China from December 2013 through December 2015. Prices are reported in dollars per metric ton unit of contained Mn. Source: CRU Ryan’s Notes.

**Update**

On April 12, 2016, the U.S. International Trade Commission found that silicomanganese imports from Australia from January 1, 2014, through December 31, 2015 did not materially injure (or threaten to materially injure) U.S. silicomanganese producers. As a result, no antidumping duty rates would be assessed on the subject imports (U.S. International Trade Commission, 2016).

## Reference Cited

U.S. International Trade Commission, 2016, Silicomanganese from Australia—  
Determination: Federal Register, v. 81, no. 70, April 12, p. 21590–21591.

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TABLE 1  
PRICES FOR MANGANESE FERROALLOYS, METAL, AND ORE IN DECEMBER 2015

		High	Low	Average	Average low, mid, and high
<u>Manganese ferroalloys:<sup>1</sup></u>					
High-carbon ferromanganese, 75% manganese	dollars per long ton of contained manganese	820.00	790.00	805.00	XX
Medium-carbon ferromanganese, 85% manganese	cents per pound of contained manganese	83.00	82.00	82.50	XX
Silicomanganese, 65% manganese	do.	41.50	36.00	37.85	XX
Manganese metal, 99.9% manganese flake <sup>2</sup>	cents per pound	95.00	84.00	XX	85.20–86.90–88.60
<u>Manganese ore:<sup>3,4</sup></u>					
36%–39% manganese	dollars per metric ton unit contained manganese	2.00	1.60	XX	1.76–1.81–1.86
44% manganese	do.	2.35	2.05	XX	2.09–2.16–2.23
46% manganese	do.	2.50	2.20	XX	2.24–2.29–2.34

do. Ditto. XX Not applicable.

<sup>1</sup>Platts Metals Week; in U.S. warehouse; average prices reported for all transactions during the month.

<sup>2</sup>CRU Ryan's Notes North American transaction prices, electrolytic manganese metal flake, 99.99% manganese, free-on-board producing point or Chicago/Pittsburgh warehouse; average prices reported for the price range.

<sup>3</sup>CRU Ryan's Notes, cost and freight, China; average prices reported for the price range.

<sup>4</sup>To determine dollars per metric ton of ore (gross weight), multiply the manganese content percentage by the price; that is, by 46 when the manganese content is 46%.

TABLE 2  
SELECTED U.S. FOREIGN TRADE IN MANGANESE<sup>1</sup>

(Metric tons, manganese content)<sup>2</sup>

	Imports for consumption			Exports		
	Ore and dioxide	Ferroalloy and metal	Total	Ore	Ferroalloy and metal	Total
2014:						
December	651	49,300	50,000	19	796	815
January–December	200,000	618,000	818,000	429	10,000	10,500
2015:						
January	25,200	53,800	78,900	9	894	903
February	24,300 <sup>r</sup>	44,300	64,600 <sup>r</sup>	27	378	405
March	24,600	32,800	57,300	56	292	348
April	40,700	40,900	81,500	9	582	591
May	625 <sup>r</sup>	67,900	68,500 <sup>r</sup>	25	235	260
June	526	30,700	31,200	36	337	373
July	11,700	49,000	60,700	8	866	875
August	16,300	29,900	46,100	76	739	815
September	23,800	34,900 <sup>r</sup>	58,700 <sup>r</sup>	8	1,680	1,690
October	8,480	27,300 <sup>r</sup>	35,700 <sup>r</sup>	23	1,640	1,670
November	28,100 <sup>r</sup>	14,700	42,800 <sup>r</sup>	25	1,240	1,270
December	31,700	30,100	61,800	49	1,370	1,420
January–December	236,000	456,000	388,000	350	10,300	10,600

<sup>r</sup>Revised.

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

<sup>2</sup>As reported except as estimated for imports of manganese dioxide and manganese waste and scrap and for exports from gross weights.

Source: U.S. Census Bureau.

TABLE 3  
U.S. IMPORTS FOR CONSUMPTION OF SILICOMANGANESE IN DECEMBER 2015<sup>1</sup>

(Metric tons)

Source	Gross weight	Mn content	Customs value <sup>2</sup>	January–December		
				Gross weight	Mn content	Customs value <sup>2</sup>
Australia	9,720	6,430 <sup>3</sup>	\$4,380,000	63,500	42,000 <sup>3</sup>	\$57,700,000
Bahrain	--	--	--	2,000	1,300	1,940,000
Brazil	--	--	--	860	588	668,000
China	--	--	--	10	7	20,100
France	--	--	--	312	219	259,000
Georgia	781	568	615,000	85,000	61,200	85,000,000
India	54	30	56,700	2,910	1,780	4,530,000
Indonesia	--	--	--	784	511	664,000
Korea, Republic of	--	--	--	2,000	1,400	1,980,000
Mexico	--	--	--	24,900	16,200	24,000,000
Norway	556	366	430,000	17,000	10,500	23,000,000
Russia	--	--	--	29	14	42,900
South Africa	6,500	4,240	5,790,000	84,600	55,000	85,900,000
Spain	5	3	9,050	13,900	9,050	13,400,000
Ukraine	--	--	--	20	14	18,300
Zambia	--	--	--	3,300	2,150	3,200,000
Total	17,600	11,600	11,300,000	301,000	202,000	302,000,000

-- Zero.

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

<sup>2</sup>Customs 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 material into the United States.

<sup>3</sup>Adjusted by the U.S. Geological Survey based on the stoichiometric ratio of silicomanganese (66.17%)

Source: U.S. Census Bureau.

TABLE 4  
U.S. IMPORTS FOR CONSUMPTION OF FERROMANGANESE IN DECEMBER 2015<sup>1</sup>

(Metric tons)

Source	Gross weight	Mn content	Customs value <sup>2</sup>	January–December		
				Gross weight	Mn content	Customs value <sup>2</sup>
<b>Low carbon:</b>						
China	49	41	\$53,500	12,400	11,400	\$25,900,000
Germany	--	--	--	221	208	608,000
Korea, Republic of	1,730	1,530	2,990,000	11,300	9,700	21,800,000
Mexico	--	--	--	1,410	1,130	1,870,000
Norway	1,920	1,560	2,330,000	23,000	18,700	35,200,000
South Africa	--	--	--	492	462	1,120,000
Vietnam	--	--	--	25	20	37,300
Total	3,700	3,130	5,370,000	48,900	41,700	86,600,000
<b>Medium carbon, 1%–2% C:</b>						
Australia	1,980	1,590	2,820,000	4,020	3,180	5,820,000
China	--	--	--	120	92	262,000
Egypt	--	--	--	298	242	444,000
Korea, Republic of	--	--	--	29,900	23,800	47,000,000
Mexico	212	167	340,000	4,020	3,140	6,020,000
Norway	--	--	--	8,640	7,040	11,900,000
South Africa	1,910	1,530	3,000,000	17,500	13,900	27,900,000
Total	4,100	3,290	6,170,000	64,400	51,500	99,400,000
<b>Medium carbon, 2%–4% C:</b>						
China	--	--	--	16	13	36,100
Norway	--	--	--	73	59	125,000
South Africa	--	--	--	464	363	1,230,000
Spain	--	--	--	1	1	3,190
Vietnam	--	--	--	54	42	76,100
Total	--	--	--	608	479	1,470,000
<b>High carbon:</b>						
Australia	8,080	6,010	5,490,000	31,700	23,600	26,300,000
Brazil	--	--	--	647	483	486,000
Canada	--	--	--	59	40	80,600
France	--	--	--	49	37	40,700
Georgia	--	--	--	3,700	2,830	2,650,000
India	--	--	--	98	75	75,700
Korea, Republic of	1,500	1,040	911,000	6,590	4,880	4,920,000
Norway	573	447	663,000	3,570	2,830	3,630,000
South Africa	2,590	1,980	1,920,000	109,000	81,800	96,500,000
Spain	--	--	--	884	605	829,000
Ukraine	1,450	902	806,000	18,300	13,900	14,900,000
United Kingdom	--	--	--	2	2	3,220
Zambia	--	--	--	20	13	29,600
Total	14,200	10,400	9,790,000	174,000	131,000	150,000,000
Grand total	22,000	16,800	21,300,000	288,000	225,000	338,000,000

-- Zero.

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

<sup>2</sup>Customs 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 material into the United States.

Source: U.S. Census Bureau.

TABLE 5  
U.S. IMPORTS FOR CONSUMPTION OF MANGANESE ORE (20% OR MORE Mn) IN DECEMBER 2015<sup>1</sup>

(Metric tons)

Source	Gross weight	Mn content	Customs value <sup>2</sup>	January–December		
				Gross weight	Mn content	Customs value <sup>2</sup>
More than 20%, but less than 47% manganese:						
Gabon	--	--	--	52,100	23,100	\$5,350,000
Mexico	--	--	--	1,510	694	357,000
South Africa	--	--	--	61,600	22,900	6,650,000
Total	--	--	--	115,000	46,700	12,400,000
47% or more manganese:						
Australia	13,800	6,850	\$3,390,000	33,600	16,700	9,230,000
Brazil	15	8	20,000	8,530	4,400 <sup>3</sup>	2,350,000
Canada	--	--	--	118	77	20,700
China	--	--	--	8	4	7,840
France	--	--	--	15	8	19,600
Gabon	47,400	24,600	6,460,000	312,000	161,000	66,700,000
Ivory Coast	--	--	--	35	22	38,800
Mexico	--	--	--	3,080	1,450	870,000
Morocco	39	22	51,100	116	90	204,000
Netherlands	--	--	--	(4)	(4)	23,900
South Africa	60	29	30,600	1,780	878	657,000
Total	61,300	31,500	9,950,000	359,000	185,000	80,100,000
Grand total	61,300	31,500	9,950,000	474,000	232,000	92,500,000

-- Zero.

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

<sup>2</sup>Customs 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 material into the United States.

<sup>3</sup>Adjusted by the U.S. Geological Survey based on the Mn Contained in total imports of Mn ore from Brazil from January–December 2015 (51.6%).

<sup>4</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 6  
U.S. IMPORTS FOR CONSUMPTION OF MANGANESE DIOXIDE IN DECEMBER 2015<sup>1</sup>

(Metric tons, gross weight)

Source	Quantity	Customs value <sup>2</sup>	January–December	
			Quantity	Customs value <sup>2</sup>
Belgium	--	--	92	\$326,000
Brazil	--	--	29	40,200
China	2	\$7,940	261	268,000
Germany	--	--	12	48,500
India	--	--	(3)	8,640
Japan	292	699,000	5,850	13,500,000
Korea, Republic of	--	--	(3)	3,880
Mexico	--	--	(3)	4,220
Netherlands	--	--	89	73,900
Poland	--	--	(3)	4,320
Singapore	22	38,200	208	353,000
South Africa	--	--	275	468,000
Spain	--	--	16	34,100
Turkey	--	--	243	413,000
United Kingdom	--	--	(3)	4,700
Total	317	745,000	7,080	15,600,000

-- Zero.

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

<sup>2</sup>Customs 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 material into the United States.

<sup>3</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 7  
U.S. IMPORTS FOR CONSUMPTION OF MANGANESE METAL IN DECEMBER 2015<sup>1</sup>

(Metric tons)

Source	Gross weight	Customs value <sup>2</sup>	January–December	
			Gross weight	Customs value <sup>2</sup>
<b>Unwrought flake:</b>				
China	69	\$162,000	7,550	\$16,000,000
Japan	40	137,000	409	1,390,000
Mexico	--	--	56	186,000
Norway	--	--	10	20,400
South Africa	870	1,750,000	7,640	18,600,000
Total	979	2,050,000	15,700	36,200,000
<b>Unwrought powder:</b>				
China	70	169,000	475	1,150,000
Japan	--	--	37	54,000
Mexico	9	31,800	192	612,000
South Africa	20	64,100	1,580	5,090,000
Total	99	265,000	2,280	6,900,000
<b>Unwrought, other:</b>				
China	456	1,010,000	8,730	18,200,000
Germany	--	--	390	899,000
Korea, Republic of	--	--	380	753,000
Russia	--	--	12	12,200
South Africa	102	231,000	560	1,320,000
Spain	--	--	538	1,280,000
United Kingdom	--	--	(3)	2,790
Total	558	1,240,000	10,600	22,500,000
<b>Other manganese, wrought:</b>				
China	20	30,800	20	40,300
France	--	--	5	67,900
Germany	15	147,000	188	2,020,000
India	--	--	4	18,000
Japan	--	--	(3)	57,600
Korea, Republic of	--	--	515	1,170,000
Mexico	20	66,500	156	527,000
Sweden	--	--	(3)	4,500
Switzerland	--	--	(3)	2,670
United Kingdom	2	22,300	35	423,000
Total	57	267,000	923	4,330,000
Metallic waste and scrap, Canada	--	--	548	144,000
Grand total	1,690	3,820,000	30,000	70,100,000

-- Zero.

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

<sup>2</sup>Customs 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 material into the United States.

<sup>3</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 8  
U.S. EXPORTS OF MANGANESE ORE (20% OR MORE Mn), FERROMANGANESE, SILICOMANGANESE,  
AND MANGANESE METAL BY COUNTRIES OF DESTINATION IN DECEMBER 2015<sup>1,2</sup>

Source	Gross weight (metric tons)	F.a.s. <sup>3</sup> value (thousands)	January–December	
			Gross weight (metric tons)	F.a.s. <sup>3</sup> value (thousands)
<b>Ore and concentrates with 20% or more manganese:</b>				
Canada	38	\$30	58	\$49
Colombia	--	--	144	310
El Salvador	--	--	2	4
Israel	--	--	1	8
Mexico	1	5	8	28
Netherlands	--	--	241	949
Poland	--	--	15	10
United Kingdom	58	50	231	189
<b>Total</b>	<b>97</b>	<b>86</b>	<b>700</b>	<b>1,550</b>
<b>Ferromanganese:</b>				
<b>2% or less carbon:</b>				
Canada	22	42	1,180	1,780
France	--	--	8	15
Mexico	--	--	10	29
United Kingdom	--	--	5	9
Venezuela	--	--	1	3
<b>Total</b>	<b>22</b>	<b>42</b>	<b>1,210</b>	<b>1,830</b>
<b>More than 2% carbon:</b>				
Canada	598	572	3,440	3,280
Denmark	--	--	7	19
Equatorial Guinea	--	--	9	20
Germany	--	--	9	26
Israel	--	--	7	21
Italy	--	--	22	38
Mexico	--	--	19	31
Netherlands	200	105	401	318
Other (6 countries)	1	7	15	41
<b>Total</b>	<b>799</b>	<b>683</b>	<b>3,930</b>	<b>3,790</b>
<b>Silicomanganese:</b>				
Canada	22	24	570	707
India	--	--	20	18
Mexico	--	--	155	229
Spain	--	--	477	383
Venezuela	--	--	1	5
<b>Total</b>	<b>22</b>	<b>24</b>	<b>1,220</b>	<b>1,340</b>
<b>Metal, including alloys and waste and scrap:<sup>4</sup></b>				
Canada	4	9	55	139
China	--	--	172	499
India	79	13	115	549
Japan	--	--	188	654
Malaysia	369	209	4,090	2,000
Mexico	146	322	184	657
Netherlands	9	35	114	457
Norway	98	390	129	1820
Pakistan	--	--	120	50
Vietnam	--	--	58	12
Other (10 countries)	1	5	166	824
<b>Total</b>	<b>706</b>	<b>984</b>	<b>5,390</b>	<b>7,660</b>
<b>Grand total</b>	<b>1,650</b>	<b>1,820</b>	<b>12,500</b>	<b>16,200</b>

-- Zero.

<sup>1</sup>Presentation of monthly data is based on the "January–December" quantities of the leading countries.

<sup>2</sup>Data rounded to no more than three significant digits; may not add to totals shown.

<sup>3</sup>Free alongside ship.

<sup>4</sup>Includes manganese-aluminum, other alloys, and waste and scrap.

Source: U.S. Census Bureau.

TABLE 9  
U.S. FOREIGN TRADE IN SELECTED MANGANESE CHEMICALS  
IN DECEMBER 2015, BY CLASS<sup>1</sup>

Class	Gross weight (metric tons)	Value <sup>2</sup> (thousands)	Principal sources and destinations: gross weight (metric tons); value <sup>2</sup> (thousands)	January–December		
				Gross weight (metric tons)	Value <sup>2</sup> (thousands)	Principal sources and destinations: gross weight (metric tons); value <sup>2</sup> (thousands)
<b>Imports for consumption:</b>						
Manganese oxides other than dioxide	5,360	\$1,270	South Africa, Republic of 4,510; \$754	14,300	\$9,120	South Africa, Republic of 5,440; \$1,550
Manganites, manganates, and other permanganates	--	--	--	123	376	China 120; \$318
Potassium permanganate	75	197	India 75; \$197	908	2,370	India 898; \$2,340
Sodium permanganate	138	337	China 138; \$334	1,920	4,370	China 1,920; \$4,360
Sulfates, basket category, including manganese sulfate	5,030	4,260	Mexico 2,420; \$2,060	65,200	57,000	Mexico 22,200; \$19,600
<b>Exports:</b>						
Manganese dioxide	432	778	Canada 187; \$192	3,270	7,940	Canada 1,100; \$1,090
Manganese oxides other than dioxide	365	635	Poland 82; \$110	7,750	13,200	Canada 1,140; \$1,450
Manganites, manganates, and other permanganates	36	294	Canada 19; \$37	204	807	Canada 177; \$356
Potassium permanganate	419	1,010	Belgium 251; \$597	3,810	9,770	Belgium 2,130; \$4,930
Sodium permanganate	75	223	Mexico 38; \$135	819	2,430	Mexico 473; \$1,630
Sulfates, basket category, including manganese sulfate	1,640	1,830	Canada 1,300; \$659	26,500	19,300	Canada 22,600; \$8,920

-- Zero.

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

<sup>2</sup>For imports, customs value; for exports, free alongside ship value.

Source: U.S. Census Bureau.