

# Mineral Industry Surveys

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## MANGANESE IN MARCH 2016

Preliminary data for March 2016 indicated that domestic consumption of manganese ore containing more than 20% manganese, exclusive of that consumed at iron and steel plants, was 30,500 metric tons (t) (gross weight). This was a 5% decrease compared with the revised amount consumed in February 2016 (32,300 t). Manganese ore consumption during the first 3 months of 2016 was 96,900 t, 19% less than the revised amount consumed during the same period of 2015 (120,000 t). Industry stocks of ore at the end of March 2016 were 192,000 t, which was a 13% increase from the revised amount at the end of February 2016 (213,000 t).

On a gross-weight basis, U.S. imports of manganese ore were 50% greater in March 2016 compared to the amount imported in February 2016 (table 5). Manganese ore imports were 45% lower during the first 3 months of 2016 compared with those during the same period in 2015. The amounts of manganese ore that were consumed and imported since March 2014 are shown in figure 1.

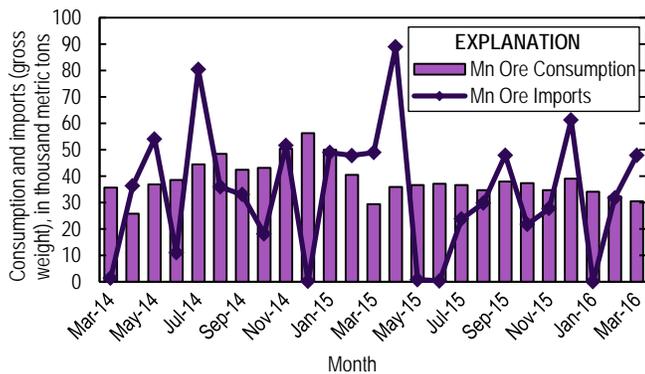


Figure 1. Monthly domestic consumption and imports of manganese (Mn) ore from March 2014 through March 2016. Sources: U.S. Census Bureau and U.S. Geological Survey.

Average spot-market prices for three grades of manganese ore delivered to China from March 2014 through March 2016 are shown in figure 2. In March 2016, the average mid-level spot prices were 3.10 dollars per metric ton unit, 36%–39% grade; 3.00 dollars per metric ton unit, 44% grade; and 2.68 dollars per metric ton unit, 46% grade (fig. 2, table 1). These were all lower than those manganese ore prices in March 2015—slightly less than the 36%–39% grade, 16% less for the 44% grade, and 31% less for the 46% grade. Compared to March 2014, the average monthly prices are considerably lower—30% less for the 36%–39% grade, 42% less for the 44% grade, and 50% less for the 46% grade.

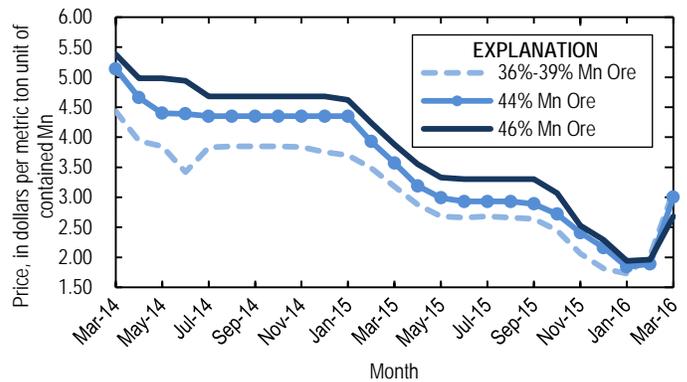


Figure 2. Average monthly spot prices for manganese (Mn) ore deliveries to China from March 2014 through March 2016. The prices shown are reported in dollars per metric ton unit of contained Mn. Source: CRU Ryan’s Notes.

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TABLE 1  
PRICES FOR MANGANESE FERROALLOYS, METAL, AND ORE IN MARCH 2016

		Low	Average	High
<b>Manganese ferroalloys:<sup>1</sup></b>				
High-carbon ferromanganese, 75% manganese	dollars per long ton of contained manganese	760.00	793.00	840.00
Medium-carbon ferromanganese, 85% manganese	cents per pound of contained manganese	78.00	80.10	82.00
Silicomanganese, 65% manganese	do.	35.00	38.50	40.00
Manganese metal, 99.9% manganese flake <sup>2</sup>	cents per pound	90.00	92.55	100.00
<b>Manganese ore:<sup>3,4</sup></b>				
36%–39% manganese	dollars per metric ton unit contained manganese	2.20	3.10	4.20
44% manganese	do.	2.20	3.00	4.30
46% manganese	do.	2.30	2.68	3.00

do. Ditto.

<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
2015:						
January	25,200	53,800	78,900	9	894	903
February	24,300 <sup>r</sup>	44,300	68,600 <sup>r</sup>	27	378	405
March	24,600	32,800	57,300	56	292	348
January–March	74,000 <sup>r</sup>	131,000	205,000 <sup>r</sup>	91	1,560	1,660
2016:						
January	252	53,700	53,900	29	1,970	2,000
February	17,200	34,700	51,900	18	2,350	2,370
March	25,700	23,800	49,500	15	963	978
January–March	43,100	112,000	155,000	62	5,280	5,350

<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 MARCH 2016<sup>1</sup>

(Metric tons)

Source	Gross weight	Mn content	Customs value <sup>2</sup>	January–March		
				Gross weight	Mn content	Customs value <sup>2</sup>
Australia	5,110	3,690	\$2,890,000	16,100	10,900	\$10,400,000
Brazil	--	--	--	2,070	1,420	1,270,000
Georgia	330	232	199,000	17,500	12,600	13,700,000
India	216	129	177,000	633	377	610,000
Mexico	3,030	1,970	1,840,000	5,890	3,840	3,870,000
Norway	851	523	848,000	7,140	4,700	5,290,000
Russia	--	--	--	14	7	20,400
South Africa	--	--	--	28,600	18,600	20,300,000
Spain	336	219	232,000	500	325	363,000
Total	9,860	6,760	6,190,000	78,500	52,800	55,800,000

-- 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.

Source: U.S. Census Bureau.

TABLE 4  
U.S. IMPORTS FOR CONSUMPTION OF FERROMANGANESE IN MARCH 2016<sup>1</sup>

(Metric tons)

Source	Gross weight	Mn content	Customs value <sup>2</sup>	January–March		
				Gross weight	Mn content	Customs value <sup>2</sup>
<b>Low carbon:</b>						
China	314	294	\$467,000	1,880	1,750	\$2,850,000
Germany	80	70	226,000	152	136	400,000
Korea, Republic of	--	--	--	900	828	1,530,000
Mexico	--	--	--	500	402	559,000
Norway	4,340	3,520	5,170,000	7,330	5,930	8,720,000
South Africa	--	--	--	50	46	82,000
<b>Total</b>	<b>4,740</b>	<b>3,880</b>	<b>5,860,000</b>	<b>10,800</b>	<b>9,090</b>	<b>14,100,000</b>
<b>Medium carbon, 1%–2% C:</b>						
Australia	1,020	766	1,490,000	2,950	2,310	3,240,000
China	60	46	122,000	60	46	122,000
Germany	8	6	15,400	8	6	15,400
Korea, Republic of	3,000	2,480	3,590,000	11,200	9,040	13,400,000
Mexico	1,030	815	1,190,000	1,880	1,490	2,300,000
Norway	--	--	--	719	584	734,000
South Africa	30	23	48,700	2,630	2,130	3,840,000
Turkey	20	15	29,900	20	15	29,900
<b>Total</b>	<b>5,160</b>	<b>4,150</b>	<b>6,490,000</b>	<b>19,500</b>	<b>15,600</b>	<b>23,600,000</b>
<b>Medium carbon, 2%–4% C:</b>						
China	--	--	--	323	254	160,000
South Africa	--	--	--	51	40	160,000
<b>Total</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>374</b>	<b>294</b>	<b>320,000</b>
<b>High carbon:</b>						
Australia	5,450	3,480	3,900,000	16,400	11,600	13,600,000
Canada	--	--	--	19	14	47,000
Georgia	--	--	--	5,000	3,760	3,440,000
Korea, Republic of	--	--	--	1,240	963	1,790,000
Norway	2,000	1,570	1,130,000	7,260	5,200	4,500,000
Russia	1,550	981	1,010,000	1,550	981	1,010,000
South Africa	36	25	46,100	5,730	4,420	6,470,000
Spain	--	--	--	192	146	127,000
Ukraine	1,420	869	778,000	1,530	937	902,000
<b>Total</b>	<b>10,500</b>	<b>6,920</b>	<b>6,850,000</b>	<b>38,900</b>	<b>28,000</b>	<b>31,900,000</b>
<b>Grand total</b>	<b>20,400</b>	<b>15,000</b>	<b>19,200,000</b>	<b>69,500</b>	<b>53,000</b>	<b>70,000,000</b>

-- 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 MARCH 2016<sup>1</sup>

(Metric tons)

Source	Gross weight	Mn content	Customs value <sup>2</sup>	January–March		
				Gross weight	Mn content	Customs value <sup>2</sup>
47% or more manganese:						
Australia	--	--	--	7,130	3,510	\$1,200,000
Brazil	52	26	\$22,100	104	52	47,300
Gabon	47,700	25,300	5,580,000	72,400	38,800	10,600,000
Morocco	--	--	--	39	22	51,100
South Africa	100	48	41,000	100	48	43,700
Total	47,900	25,400	5,640,000	79,700	42,400	12,000,000

-- 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 6  
U.S. IMPORTS FOR CONSUMPTION OF MANGANESE DIOXIDE IN MARCH 2016<sup>1</sup>

(Metric tons, gross weight)

Source	Quantity	Customs value <sup>2</sup>	January–March	
			Quantity	Customs value <sup>2</sup>
Belgium	--	--	37	\$71,700
Brazil	10	\$17,600	21	35,000
France	--	--	18	33,300
Germany	--	--	2	8,540
India	--	--	17	33,900
Japan	456	1,010,000	1,060	2,370,000
Singapore	22	38,200	45	76,400
Ukraine	--	--	10	16,900
Total	489	1,070,000	1,210	2,650,000

-- 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 7  
U.S. IMPORTS FOR CONSUMPTION OF MANGANESE METAL IN MARCH 2016<sup>1</sup>

(Metric tons)

Source	Gross weight	Customs value <sup>2</sup>	January–March	
			Gross weight	Customs value <sup>2</sup>
<b>Unwrought flake:</b>				
China	628	\$934,000	1,210	\$2,900,000
Japan	--	--	52	178,000
Mexico	6	21,700	15	53,400
South Africa	470	840,000	1,720	3,110,000
Total	1,100	1,800,000	2,990	6,240,000
<b>Unwrought powder:</b>				
China	50	135,000	125	337,000
Mexico	34	112,000	63	206,000
South Africa	206	542,000	626	1,690,000
Total	290	789,000	814	2,240,000
<b>Unwrought, other:</b>				
China	510	961,000	2,080	3,800,000
Germany	(3)	5,000	22	45,900
South Africa	7	13,800	176	372,000
Spain	66	140,000	105	223,000
Total	583	1,120,000	2,380	4,440,000
<b>Other manganese, wrought:</b>				
China	60	84,000	60	87,000
Germany	--	--	14	138,000
Japan	--	--	(3)	11,100
Mexico	--	--	2	6,350
Total	60	84,000	76	243,000
Metallic waste and scrap, Canada	--	--	137	33,000
Grand total	2,040	3,790,000	6,400	13,200,000

-- 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 MARCH 2016<sup>1,2</sup>

Source	Gross weight (metric tons)	F.a.s. <sup>3</sup> value (thousands)	January–March	
			Gross weight (metric tons)	F.a.s. <sup>3</sup> value (thousands)
<b>Ore and concentrates with 20% or more manganese:</b>				
Canada	--	--	19	\$15
Guatemala	11	\$29	11	29
Korea, Republic of	--	--	3	17
Mexico	4	10	8	27
Netherlands	16	71	64	269
United Kingdom	--	--	20	17
<b>Total</b>	<b>30</b>	<b>111</b>	<b>125</b>	<b>375</b>
<b>Ferromanganese:</b>				
<b>2% or less carbon:</b>				
Brazil	7	14	7	14
Canada	179	229	870	1,060
Colombia	--	--	2	4
<b>Total</b>	<b>187</b>	<b>244</b>	<b>880</b>	<b>1,070</b>
<b>More than 2% carbon:</b>				
Canada	459	382	3,780	3,090
Chile	--	--	20	57
Italy	1	8	1	8
Mexico	8	10	9	14
<b>Total</b>	<b>468</b>	<b>400</b>	<b>3,810</b>	<b>3,170</b>
<b>Silicomanganese:</b>				
Canada	94	141	152	217
Mexico	--	--	14	31
Venezuela	--	--	3	5
<b>Total</b>	<b>94</b>	<b>141</b>	<b>170</b>	<b>253</b>
<b>Metal, including alloys and waste and scrap:<sup>4</sup></b>				
Belgium	--	--	2	37
Canada	--	--	16	28
China	30	410	47	656
France	1	4	2	8
Germany	--	--	20	82
India	--	--	13	206
Malaysia	172	110	1,160	457
Mexico	177	432	178	455
Netherlands	--	--	18	71
United Kingdom	4	40	9	89
Other (3 countries)	(5)	12	(5)	21
<b>Total</b>	<b>384</b>	<b>1,010</b>	<b>1,470</b>	<b>2,110</b>
<b>Grand total</b>	<b>1,160</b>	<b>1,900</b>	<b>6,450</b>	<b>6,980</b>

-- Zero.

<sup>1</sup>Presentation of monthly data is based on the "January–March" 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.

<sup>5</sup>Less than ½ unit.

Source: U.S. Census Bureau.

TABLE 9  
U.S. FOREIGN TRADE IN SELECTED MANGANESE CHEMICALS  
IN MARCH 2016, 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–March		
				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	1,760	\$1,210	Brazil 922; \$289	4,660	\$3,090	Brazil 3,070; \$900
Manganites, Manganates, and other permanganates	(3)	\$10	Canada (3); \$10	(3)	\$10	Canada (3); \$10
Potassium permanganate	109	273	India 109; \$273	181	454	India 181; \$454
Sodium permanganate	73	172	China 73; \$172	149	356	China 149; \$356
Sulfates, basket category, including manganese sulfate	6,140	4,870	Mexico 2,880; \$2,440	15,800	12,900	Mexico 6,560; \$5,820
<b>Exports:</b>						
Manganese dioxide	309	989	Estonia 112; \$594	911	2,220	Canada 353; \$303
Manganese oxides other than dioxide	423	793	Poland 103; \$137	1,590	2,990	Canada 320; \$414
Manganites, manganates, and other permanganates	9	17	Canada 9; \$17	15	40	Canada 14; \$27
Potassium permanganate	115	401	Spain 55; \$126	767	1,990	Belgium 357; \$837
Sodium permanganate	80	188	Belgium 57; \$123	213	573	Belgium 97; \$208
Sulfates, basket category, including manganese sulfate	2,200	1,660	Canada 1,860; \$814	6,110	4,430	Canada 4,930; \$1,870

<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.

<sup>3</sup>Less than ½ unit.

Source: U.S. Census Bureau.