

# Mineral Industry Surveys

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## MANGANESE IN SEPTEMBER 2015

Preliminary data for September 2015 indicated that domestic consumption of manganese ore containing more than 20% manganese, exclusive of that consumed at iron and steel plants, was 33,800 metric tons (t) (gross weight). This was a slight decrease compared with the amount consumed in August 2015. Manganese ore consumption during the first 9 months of 2015 was about 339,000 t, 6% less than the revised amount consumed during the same period of 2014 (361,000 t). Industry stocks of ore at the end of September 2015 were 154,000 t, which was a 12% decrease from the revised amount at the end of August 2015 (175,000 t).

Combined U.S. imports of manganese dioxide and manganese ore (contained weight) were 71% and 46% higher, respectively, in September 2015 compared to the average monthly amounts imported during the second quarter of 2015 and in August 2015. The combined imports of these materials were slightly higher during the first 9 months of 2015 compared with those during the same period in 2014 (table 2). The amounts of manganese ore (gross weight) that have been consumed and imported since September 2013 are shown in figure 1.

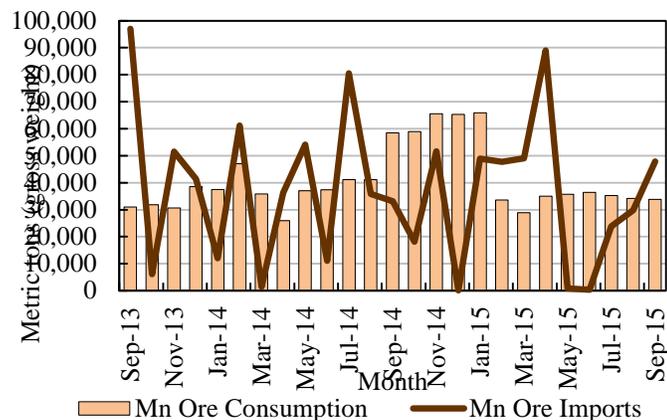


Figure 1. Monthly domestic consumption and imports of manganese (Mn) ore from September 2013 through September 2015. Sources: U.S. Census Bureau and U.S. Geological Survey.

No central exchange exists for setting the price of manganese ore. Rather, prices are established by negotiation between buyers and sellers. The only publicly available prices are those spot-market transactions reported by certain trade journals for manganese ore deliveries to China. One such trade journal, CRU Ryan’s Notes, provides average monthly low, mid, and high spot prices for the following grades of manganese ore: 36%–39% manganese, 44% manganese, and 46% manganese. In September 2015, the average mid-level spot prices were 2.68 dollars per metric ton unit, 36%–39% grade; 2.93 dollars per metric ton unit, 44% grade; and 3.30 dollars per metric ton unit, 46% grade (figure 2, table 1). These were all significantly lower than those manganese ore prices at the start of 2015—29% less for both the 36%–39% and 46% grades and 34% less for the 44% grade. Compared to September 2013, the average monthly prices have decreased markedly—by 39% for the 36%–39% grade; by 46% for the 44% grade; and by 40% for the 46% grade.

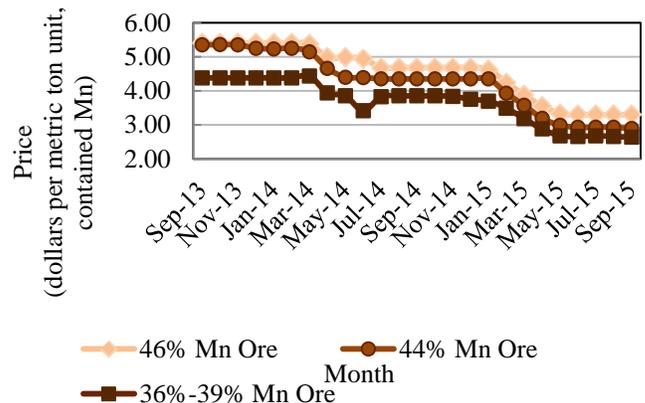


Figure 2. Average monthly spot prices for manganese ore deliveries to China from September 2013 through September 2015. The prices shown are for the middle of the average price ranges and are reported in dollars per metric ton unit of contained manganese. Source: CRU Ryan’s Notes.

## Update

According to Davies (2015), manganese ore and alloy markets in 2015 encountered persistent price decreases despite widespread production cuts. As a result, several manganese ore mines temporarily curtailed production during the fourth quarter of 2015. On December 8, South32 Ltd. announced that it would lay off 400 workers at its joint-venture Samancor manganese mines in South Africa (Metal-Pages, 2015). The Samancor mines, Mamatwan and Wessels, have production capacities of 2.9 million metric tons per year (Mt/yr) and 1 Mt/yr, respectively.

In mid-December, two more South African manganese ore producers—Tshipi é Ntle Manganese Mining (Pty) Ltd. and United Manganese of Kalahari (UMK)—indicated that they would reduce manganese ore production and exports from December 2015 through at least January 2016. Tshipi reportedly exports 35% of its annual ore production and UMK exports 50% (between 80,000 and 120,000 metric tons per month) (Davies, 2015). Production capacity is 2.4 Mt/yr and 3.4 Mt/yr at Tshipi's Borwa Manganese Mine and UMK's Kalahari Manganese Mine, respectively.

Also in mid-December, OM Holdings Ltd. announced it would temporarily suspend production at the company's Bootu Creek Manganese Mine, Northern Territory, Australia, as the company restructures (OM Holdings, Ltd., 2016). Bootu Creek has a 1-Mt/yr production capacity.

Market conditions have also led to recent temporary cutbacks by two silicomanganese producers—Glencore plc and

Transalloys (Pty) Ltd. Glencore planned to reduce silicomanganese production indefinitely by 50% to 5,000 metric tons per month at its Mo I Rana plant in Norway (Conway, 2016). Transalloys expected to decrease silicomanganese production at its Witbank plant in South Africa by as much as 80% or 144,000 metric tons in 2016 (Conway, 2015).

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## References Cited

- Conway, Declan, 2015, Transalloys to cut SiMn production in 2016: Metal-Pages, December 7. (Accessed December 8, 2015, via <http://www.metal-pages.com>.)
- Conway, Declan, 2016, Europe Mn alloys—Slow trading in early 1Q: Metal-Pages, January 7. (Accessed January 7, 2016, via <http://www.metal-pages.com>.)
- Davies, Janie, 2015, UMK extends manganese production cut: Metal-Pages, December 15. (Accessed December 16, 2015, via <http://www.metal-pages.com>.)
- Metal-Pages, 2015, South32 to lay off manganese workers: Metal-Pages, December 8. (Accessed January 11, 2016, via <http://www.metal-pages.com>.)
- OM Holdings, Ltd., 2016, OM (Manganese) Ltd (“OMM”): Singapore, OM Holdings, Ltd. news release, January 4, 2 p. (Accessed January 7, 2016, at [http://www.omholdingsltd.com/news\\_announce16/01.pdf](http://www.omholdingsltd.com/news_announce16/01.pdf).)

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

		High	Low	Average	Average low, mid, and high
<b>Manganese ferroalloys:<sup>1</sup></b>					
High-carbon ferromanganese, 75% manganese	dollars per long ton of contained manganese	880.00	820.00	844.00	XX
Medium-carbon ferromanganese, 85% manganese	cents per pound of contained manganese	95.00	94.00	94.50	XX
Silicomanganese, 65% manganese	do.	50.00	44.00	45.70	XX
Manganese metal, 99.9% manganese flake <sup>2</sup>	cents per pound	115.00	112.00	XX	112.00–113.50–115.00
<b>Manganese ore:<sup>3,4</sup></b>					
36%–39% manganese	dollars per metric ton unit contained manganese	2.70	2.60	XX	2.59–2.64–2.69
44% manganese	do.	3.05	2.80	XX	2.81–2.89–2.98
46% manganese	do.	3.36	3.23	XX	3.24–3.30–3.35

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:						
September	17,100	34,900	52,000	--	858	858
January–September	163,000	464,000	627,000	359	7,510	7,870
2015:						
January	25,200	53,800 <sup>r</sup>	78,900 <sup>r</sup>	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
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	58,700	8	1,680	1,690
January–September	168,000	384,000	552,000	254	6,000	6,260

<sup>r</sup>Revised. -- Zero.

<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 SEPTEMBER 2015<sup>1</sup>

(Metric tons)

Source	Gross weight	Mn content	Customs value <sup>2</sup>	January–September		
				Gross weight	Mn content	Customs value <sup>2</sup>
Australia	7,510	4,970 <sup>3</sup>	\$5,830,000	47,300	31,000 <sup>3</sup>	\$48,400,000
Bahrain	1,200	780	1,170,000	1,200	780	1,170,000
China	--	--	--	10	7	20,100
France	312	219	259,000	312	219	259,000
Georgia	16,800	11,900	16,200,000	80,800	58,300	81,400,000
India	189	123	302,000	2,670	1,630	4,230,000
Indonesia	--	--	--	23	15	24,800
Korea, Republic of	--	--	--	2,000	1,400	1,980,000
Mexico	--	--	--	21,800	14,200	21,600,000
Norway	28	18	48,900	14,100	8,660	19,500,000
Russia	12	6	18,400	12	6	18,400
South Africa	--	--	--	71,600	46,500	74,100,000
Spain	1,250	815	1,230,000	12,000	7,840	11,700,000
Ukraine	--	--	--	20	14	18,300
Zambia	--	--	--	3,300	2,150	3,200,000
Total	27,300	18,800	25,100,000	257,000	173,000	268,000,000

-- 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 ration of silicomanganese (66.17%).

Source: U.S. Census Bureau.

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

(Metric tons)

Source	Gross weight	Mn content	Customs value <sup>2</sup>	January–September		
				Gross weight	Mn content	Customs value <sup>2</sup>
<b>Low carbon:</b>						
China	896	827	\$1,830,000	10,900	10,000	\$23,300,000
Germany	24	23	66,600	174	163	477,000
Korea, Republic of	1,450	1,220	3,090,000	3,860	3,220	8,240,000
Mexico	--	--	--	400	315	631,000
Norway	405	329	679,000	17,400	14,100	27,400,000
South Africa	--	--	--	330	313	854,000
Vietnam	25	20	37,300	25	20	37,300
Total	2,800	2,420	5,700,000	33,000	28,200	60,900,000
<b>Medium carbon, 1%–2% C:</b>						
Australia	--	--	--	1,850	1,450	2,050,000
China	--	--	--	80	61	177,000
Egypt	--	--	--	298	242	444,000
Korea, Republic of	4,500	3,600	6,240,000	28,300	22,600	44,700,000
Mexico	61	48	109,000	2,120	1,630	3,750,000
Norway	--	--	--	7,140	5,820	9,990,000
South Africa	1,270	1,030	2,000,000	15,500	12,400	24,900,000
Total	5,830	4,680	8,350,000	55,400	44,200	86,000,000
<b>Medium carbon, 2%–4% C:</b>						
China	--	--	--	16	13	36,100
Norway	36	29	60,700	73	59	125,000
South Africa	--	--	--	424	333	1,200,000
Spain	--	--	--	1	1	3,190
Vietnam	--	--	--	54	42	76,100
Total	36	29	60,700	568	448	1,440,000
<b>High carbon:</b>						
Australia	--	--	--	22,400	16,600	19,000,000
Brazil	--	--	--	485	361	378,000
Canada	--	--	--	59	40	80,600
France	--	--	--	49	37	40,700
Georgia	3,700	2,830	2,650,000	3,700	2,830	2,650,000
Korea, Republic of	--	--	--	4,970	3,750	3,910,000
Norway	--	--	--	3,000	2,390	2,960,000
South Africa	4,890	3,770	4,030,000	98,600	73,900	88,000,000
Spain	--	--	--	812	551	774,000
Ukraine	38	24	49,100	16,700	12,900	13,900,000
United Kingdom	2	2	3,220	2	2	3,220
Zambia	--	--	--	20	13	29,600
Total	8,630	6,630	6,740,000	151,000	113,000	132,000,000
Grand total	17,300	13,800	20,800,000	240,000	186,000	280,000,000

-- 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 SEPTEMBER 2015<sup>1</sup>

(Metric tons)

Source	Gross weight	Mn content	Customs value <sup>3</sup>	January–September <sup>2</sup>		
				Gross weight	Mn content	Customs value <sup>3</sup>
<b>More than 20%, but less than 47% manganese:</b>						
Gabon	9,000	3,870	\$752,000	41,600	17,900	\$4,590,000
Mexico	--	--	--	1,510	694	357,000
South Africa	--	--	--	40,000	14,700	4,290,000
Total	9,000	3,870	752,000	83,100	33,300	9,240,000
<b>47% or more manganese:</b>						
Australia	--	--	--	19,800	9,830	5,840,000
Brazil	53	27	23,500	3,620	1,870	1,180,000
Canada	58	46	8,210	118	77	20,700
China	--	--	--	8	4	7,840
France	--	--	--	15	8	19,600
Gabon	38,400	19,500	7,430,000	226,000	117,000	53,500,000
Ivory Coast	--	--	--	18	8	19,400
Mexico	--	--	--	3,000	1,410	870,000
Morocco	--	--	--	77	68	102,000
Netherlands	--	--	--	(4)	(4)	23,900
South Africa	400	194	218,000	1,720	849	626,000
Total	38,900	19,700	7,680,000	254,000	131,000	62,300,000
Grand total	47,900	23,600	8,430,000	337,000	164,000	71,500,000

-- Zero.

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

<sup>2</sup>Includes revised data that are not broken out by specific month(s).

<sup>3</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>4</sup>Less than ½ unit.

Source: U.S. Census Bureau.

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

(Metric tons, gross weight)

Source	Quantity	Customs value <sup>2</sup>	January–September	
			Quantity	Customs value <sup>2</sup>
Belgium	--	--	76	\$297,000
Brazil	--	--	19	22,800
China	--	--	199	218,000
Germany	--	--	11	38,900
India	--	--	(3)	8,640
Japan	334	\$756,000	4,790	11,000,000
Korea, Republic of	--	--	(3)	3,880
Mexico	--	--	(3)	4,220
Netherlands	--	--	89	73,900
Poland	--	--	(3)	4,320
Singapore	--	--	140	238,000
South Africa	--	--	275	468,000
Spain	4	6,790	8	20,400
Turkey	20	33,300	241	410,000
Total	358	797,000	5,850	12,800,000

-- 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 SEPTEMBER 2015<sup>1</sup>

(Metric tons)

Source	Gross weight	Customs value <sup>2</sup>	January–September	
			Gross weight	Customs value <sup>2</sup>
<b>Unwrought flake:</b>				
China	635	\$1,240,000	7,070	\$14,500,000
Japan	16	54,800	288	982,000
Mexico	--	--	27	89,400
Norway	10	20,400	10	20,400
South Africa	349	740,000	6,430	16,200,000
Total	1,010	2,050,000	13,800	31,800,000
<b>Unwrought powder:</b>				
China	50	135,000	335	810,000
Mexico	15	51,300	156	491,000
South Africa	77	237,000	1,400	4,520,000
Total	142	423,000	1,890	5,820,000
<b>Unwrought, other:</b>				
China	962	1,720,000	7,220	15,100,000
Germany	29	59,200	309	709,000
Russia	--	--	12	12,200
South Africa	61	127,000	316	749,000
Spain	39	86,100	461	1,110,000
United Kingdom	--	--	(3)	2,790
Total	1,090	1,990,000	8,320	17,700,000
<b>Other manganese, wrought:</b>				
France	1	18,700	5	67,900
Germany	24	309,000	150	1,650,000
India	--	--	4	18,000
Japan	--	--	(3)	43,900
Korea, Republic of	--	--	515	1,170,000
Mexico	16	53,700	128	434,000
Sweden	--	--	(3)	4,500
Switzerland	(3)	2,670	(3)	2,670
United Kingdom	--	--	14	167,000
Total	41	384,000	816	3,560,000
Metallic waste and scrap, Canada	86	26,100	521	139,000
Grand total	2,370	4,880,000	25,400	59,000,000

-- 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.

<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 SEPTEMBER 2015<sup>1,2</sup>

Source	Gross weight (metric tons)	F.a.s. <sup>3</sup> value (thousands)	January–September	
			Gross weight (metric tons)	F.a.s. <sup>3</sup> value (thousands)
<b>Ore and concentrates with 20% or more manganese:</b>				
Canada	--	--	20	\$18
Colombia	--	--	131	297
Israel	--	--	1	8
Mexico	--	--	6	23
Netherlands	16	\$62	161	641
Poland	--	--	15	10
United Kingdom	--	--	173	138
Total	16	62	507	1,140
<b>Ferromanganese:</b>				
2% or less carbon:				
Canada	7	13	1,130	1,700
France	--	--	8	15
Mexico	2	5	10	29
United Kingdom	--	--	5	9
Venezuela	--	--	1	3
Total	8	18	1,150	1,760
More than 2% carbon:				
Angola	--	--	2	3
Canada	671	619	1,400	1,330
Congo (Brazzaville)	--	--	7	14
Denmark	--	--	7	19
Equatorial Guinea	--	--	9	20
Germany	--	--	4	11
Israel	--	--	7	21
Italy	--	--	22	38
Mexico	--	--	19	31
Venezuela	--	--	2	6
Other (3 countries)	--	--	3	10
Total	671	619	1,480	1,500
<b>Silicomanganese:</b>				
Canada	56	68	473	589
India	--	--	20	18
Mexico	--	--	155	229
Venezuela	--	--	1	5
Total	56	68	648	841
<b>Metal, including alloys and waste and scrap:<sup>4</sup></b>				
Canada	4	9	44	113
China	--	--	160	320
Japan	--	--	143	500
Malaysia	1,030	419	2,670	1,280
Netherlands	--	--	97	387
Norway	--	--	32	1,430
Pakistan	--	--	120	50
Taiwan	--	--	40	21
United Kingdom	3	37	31	204
Vietnam	58	12	58	12
Other (9 countries)	11	122	99	895
Total	1,110	599	3,500	5,210
Grand total	1,860	1,370	7,280	10,400

-- Zero.

<sup>1</sup>Presentation of monthly data is based on the "January–September" 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 SEPTEMBER 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–September		
				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	736	\$736	France 220; \$200	7,960	\$6,620	Korea, Republic of 3,150; \$2,720
Manganites, manganates, and other permanganates	--	--	--	123	376	China 120; \$318
Potassium permanganate	55	142	India 55; \$140	678	1,770	India 669; \$1,750
Sodium permanganate	180	440	China 180; \$440	1,640	3,750	China 1,640; \$3,740
Sulfates, basket category, including manganese sulfate	5,690	5,270	Mexico 2,080; \$1,850	48,900	44,000	Mexico 16,100; \$14,300
<b>Exports:</b>						
Manganese dioxide	383	765	Canada 247; \$177	2,350	5,670	Canada 786; \$755
Manganese oxides other than dioxide	590	1,020	Canada 130; \$171	6,520	10,700	Canada 908; \$1,180
Manganites, manganates, and other permanganates	8	19	Canada 7; \$14	130	427	Canada 123; \$252
Potassium permanganate	253	718	Belgium 161; \$381	2,790	7,070	Belgium 1,670; \$3,820
Sodium permanganate	75	268	Mexico 75; \$268	623	1,870	Mexico 360; \$1,280
Sulfates, basket category, including manganese sulfate	2,100	1,280	Canada 1,810; \$576	20,200	14,300	Canada 17,300; \$6,880

-- 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.