

# Mineral Industry Surveys

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## MANGANESE IN DECEMBER 2018

In December 2018, domestic consumption of manganese ore containing more than 20% manganese, exclusive of that consumed at iron and steel plants, was estimated to be 29,000 metric tons (t) (gross weight) (fig. 1).

On a gross-weight basis, U.S. imports of manganese ore in December 2018 were 7,100 t, 85% less than the 47,000 t imported in November 2018 (fig. 1, table 5).

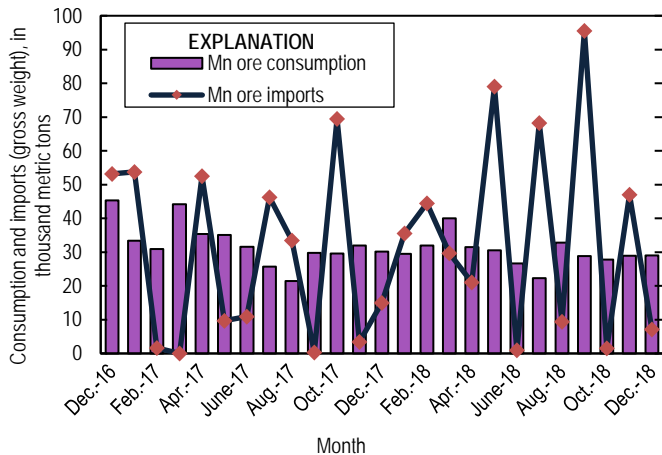


Figure 1. Monthly domestic consumption and imports of manganese (Mn) ore from December 2016 through December 2018. Sources: U.S. Census Bureau and U.S. Geological Survey.

In December 2018, the average spot prices for manganese ore deliveries to China were \$6.38 per metric ton unit, 36%–39% grade, and \$7.18 per metric ton unit, 44% grade (fig. 2, table 1). Compared with November 2018 prices, the 36%–39%

manganese ore price was 5% less and the 44% grade was unchanged. Compared with the 2-year price highs of December 2016, they were 20% lower for the 36%–39% grade and 19% lower for the 44% grade.

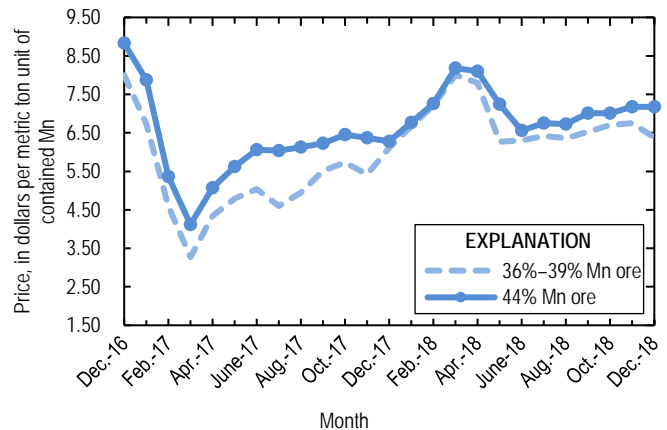


Figure 2. Average monthly spot prices for manganese (Mn) ore delivered to China from December 2016 through December 2018. Source: CRU Group.

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TABLE 1  
PRICES FOR MANGANESE FERROALLOYS, METAL, AND ORE IN DECEMBER 2018

		Low	Average	High
<b>Manganese ferroalloys:<sup>1</sup></b>				
High-carbon ferromanganese, 75% manganese	dollars per long ton of contained manganese	1,300.00	1,335.00	1,370.00
Medium-carbon ferromanganese, 85% manganese	cents per pound of contained manganese	112.00	113.00	114.00
Silicomanganese, 65% manganese	do.	62.00	62.75	63.50
Manganese metal, 99.9% manganese flake <sup>2</sup>	cents per pound	130.00	135.00	140.00
<b>Manganese ore:<sup>3,4</sup></b>				
36%–39% manganese	dollars per metric ton unit contained manganese	6.20	6.38	6.70
44% manganese	do.	7.10	7.18	7.25

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 Group 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 Group, 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 44 when the manganese content is 44%.

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
2017:						
December	8,162	38,299	46,461	9	1,658	1,667
January–December	174,761	520,621	695,382	576	16,921 <sup>r</sup>	17,497 <sup>r</sup>
2018:						
January	17,253	66,808	84,061	18	221	239
February	23,238	34,701	57,939	47	805	852
March	10,608	59,330	69,939	25	993	1,018
April	10,517	41,677	52,195	16	1,249	1,265
May	36,507	67,653	104,160	30	1,241	1,271
June	753	56,758	57,512	30	1,801	1,831
July	32,868	35,895	68,763	1,175	1,737	2,912
August	5,235	84,053	89,288	37	1,345	1,382
September	40,634	33,651	74,285	35	1,076	1,111
October	1,108	37,605	38,713	16	1,424	1,440
November	23,156	75,622	98,778	19	2,037	2,056
December	6,326	39,863	46,189	12	1,510	1,522
January–December	208,204	633,616	841,820	1,460	15,438	16,898

<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 (60%), manganese metal (100%), and manganese waste and scrap (50%). Manganese contained in exports are estimated from reported gross weights, as follows: ferromanganese (79%), manganese dioxide (60%), manganese metal (100%), manganese ore (50%), and silicomanganese (66%).

Source: U.S. Census Bureau.

TABLE 3  
U.S. IMPORTS FOR CONSUMPTION OF SILICOMANGANESE IN DECEMBER 2018<sup>1</sup>

(Metric tons)

Source	Gross weight	Mn content	Customs value <sup>3</sup>	January–December <sup>2</sup>		
				Gross weight	Mn content	Customs value <sup>3</sup>
Australia	7,510	4,960	\$9,410,000	87,600	56,800	\$110,000,000
Belgium	--	--	--	1,890	1,240	2,300,000
Brazil	--	--	--	3,270	2,170	3,440,000
Georgia	628	453	722,000	116,000	84,900	143,000,000
India	--	--	--	1,870	1,100	2,720,000
Malaysia	246	162	268,000	29,300	19,000	34,300,000
Mexico	1,620	1,040	1,870,000	23,900	15,800	27,200,000
Norway	2,110	1,310	3,000,000	20,300	13,100	29,000,000
Russia	--	--	--	9,160	6,100	11,500,000
Saudi Arabia	--	--	--	9,030	5,970	10,100,000
South Africa	20,800	13,500	22,900,000	78,300	50,900	86,200,000
Spain	1,500	987	1,910,000	29,500	19,100	36,800,000
Taiwan	--	--	--	200	132	237,000
Zambia	--	--	--	999	650	1,230,000
Total	34,400	22,400	40,000,000	412,000	277,000	498,000,000

-- Zero.

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

<sup>2</sup>May include 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.

Source: U.S. Census Bureau.

TABLE 4  
U.S. IMPORTS FOR CONSUMPTION OF FERROMANGANESE IN DECEMBER 2018<sup>1</sup>

(Metric tons)

Source	Gross weight	Mn content	Customs value <sup>3</sup>	January–December <sup>2</sup>		
				Gross weight	Mn content	Customs value <sup>3</sup>
<b>Low carbon:</b>						
China	733	685	\$1,670,000	5,530	5,170	\$12,200,000
France	--	--	--	19	15	58,900
Germany	--	--	--	264	233	657,000
Japan	--	--	--	340	267	568,000
Korea, Republic of	900	828	2,550,000	11,100	10,200	25,700,000
Mexico	320	255	491,000	3,420	2,770	5,180,000
Norway	2,740	2,220	4,820,000	44,200	35,800	74,800,000
South Africa	81	69	134,000	374	325	623,000
Spain	1,580	1,260	2,600,000	1,580	1,260	2,600,000
Vietnam	--	--	--	280	252	629,000
Total	6,360	5,320	12,300,000	67,100	56,300	123,000,000
<b>Medium carbon, 1%–2% C:</b>						
China	--	--	--	145	119	319,000
France	--	--	--	2,900	2,360	4,600,000
Korea, Republic of	3,500	2,800	5,450,000	33,000	26,400	52,900,000
Mexico	360	282	590,000	6,760	5,330	10,900,000
Norway	--	--	--	19,200	15,600	29,600,000
South Africa	650	513	1,100,000	34,400	27,600	56,300,000
Total	4,510	3,600	7,140,000	96,300	77,400	155,000,000
<b>High carbon:</b>						
Australia	--	--	--	76,000	57,000	93,900,000
Brazil	54	39	64,300	3,400	2,130	3,880,000
Canada	--	--	--	20	8	34,400
France	--	--	--	2,200	1,680	2,470,000
Georgia	--	--	--	3,100	2,410	3,930,000
India	270	204	300,000	5,120	1,910	5,940,000
Korea, Republic of	--	--	--	5,840	4,440	8,290,000
Malaysia	6,350	4,830	8,090,000	65,200	49,500	83,000,000
Mexico	3	2	4,490	122	98	179,000
Norway	--	--	--	3,090	2,390	3,870,000
Russia	--	--	--	28,100	21,400	27,500,000
Saudi Arabia	4	3	6,700	399	254	641,000
South Africa	3,280	2,380	3,670,000	46,600	35,200	60,900,000
Spain	--	--	--	18,700	14,200	22,800,000
Ukraine	--	--	--	6,580	5,020	6,540,000
Total	9,960	7,450	12,100,000	264,000	198,000	324,000,000
Grand total	20,800	16,400	31,500,000	428,000	331,000	602,000,000

-- Zero.

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

<sup>2</sup>May include 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.

Source: U.S. Census Bureau.

TABLE 5  
U.S. IMPORTS FOR CONSUMPTION OF MANGANESE ORE (20% OR MORE Mn)  
IN DECEMBER 2018<sup>1</sup>

(Metric tons)

Source	Gross weight	Mn content	Customs value <sup>3</sup>	January–December <sup>2</sup>		
				Gross weight	Mn content	Customs value <sup>3</sup>
<b>More than 20%, but less than 47% manganese:</b>						
Brazil	--	--	--	6,570	2,630	\$1,620,000
Cote d'Ivoire	--	--	--	27	12	11,000
Gabon	--	--	--	9,610	4,130	1,910,000
Mexico	--	--	--	15,500	5,450	3,560,000
South Africa	54	22	\$12,900	108,000	36,500	20,000,000
Turkey	--	--	--	57	26	27,700
Total	54	22	12,900	139,000	48,800	27,100,000
<b>47% or more manganese:</b>						
Australia	--	--	--	13,500	6,430	5,220,000
Brazil	--	--	--	2,290	1,260	919,000
China	--	--	--	2	2	4,400
Gabon	--	--	--	266,000	137,000	83,400,000
Mexico	6,610	5,950	1,450,000	14,200	9,840	3,930,000
Morocco	--	--	--	116	66	153,000
South Africa	435	211	184,000	3,430	1,670	1,460,000
Turkey	--	--	--	361	263	175,000
Total	7,040	6,160	1,640,000	300,000	156,000	95,300,000
Grand total	7,100	6,180	1,650,000	440,000	205,000	122,000,000

-- Zero.

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

<sup>2</sup>May include 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.

Source: U.S. Census Bureau.

TABLE 6  
U.S. IMPORTS FOR CONSUMPTION OF MANGANESE DIOXIDE  
IN DECEMBER 2018<sup>1</sup>

(Metric tons, gross weight)

Source	Quantity	Customs value <sup>3</sup>	January–December <sup>2</sup>	
			Quantity	Customs value <sup>3</sup>
Belgium	--	--	59	\$158,000
Brazil	--	--	32	54,100
China	1	\$5,450	72	166,000
France	--	--	14	23,800
Germany	12	19,700	48	82,200
India	17	27,000	23	42,800
Japan	217	498,000	4,990	11,200,000
Mexico	--	--	(4)	2,210
Morocco	--	--	19	86,600
Spain	--	--	60	102,000
Ukraine	--	--	23	38,700
Total	247	550,000	5,340	11,900,000

-- Zero.

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

<sup>2</sup>May include 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 7  
U.S. IMPORTS FOR CONSUMPTION OF MANGANESE METAL  
IN DECEMBER 2018<sup>1</sup>

(Metric tons)

Source	Gross weight	Customs value <sup>3</sup>	January–December <sup>2</sup>	
			Gross weight	Customs value <sup>3</sup>
<b>Unwrought flake:</b>				
China	177	\$428,000	4,210	\$7,650,000
Gabon	--	--	6	14,700
Hong Kong	--	--	102	263,000
Japan	(4)	272,000	154	2,930,000
Latvia	--	--	10	27,500
Mexico	--	--	20	69,900
Netherlands	--	--	1	2,900
South Africa	119	400,000	3,900	9,740,000
Vietnam	--	--	100	221,000
Total	297	1,100,000	8,500	20,900,000
<b>Unwrought powder:</b>				
China	--	--	97	216,000
Mexico	31	110,000	226	761,000
South Africa	141	384,000	1,380	3,770,000
Total	172	494,000	1,700	4,750,000
<b>Unwrought, other:</b>				
China	346	824,000	11,900	24,700,000
Estonia	20	44,200	20	44,200
Germany	163	434,000	1,500	3,410,000
New Zealand	--	--	(4)	2,040
Poland	--	--	(4)	6,310
South Africa	20	49,100	839	1,950,000
Spain	--	--	3	4,280
Total	550	1,350,000	14,300	30,100,000
<b>Other manganese, wrought:</b>				
Canada	--	--	5	21,900
China	--	--	42	68,400
France	--	--	(4)	2,150
Germany	23	276,000	309	3,580,000
India	--	--	(4)	5,640
Japan	(4)	27,400	(4)	190,000
Malaysia	--	--	(4)	3,040
Mexico	22	79,500	159	530,000
Poland	--	--	(4)	9,250
Sweden	--	--	9	85,600
Total	45	383,000	526	4,490,000
Metallic waste and scrap, Canada	36	12,100	408	128,000
Grand total	1,100	3,340,000	25,400	60,400,000

-- Zero.

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

<sup>2</sup>May include 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 8  
U.S. EXPORTS OF MANGANESE ORE (20% OR MORE Mn), FERROMANGANESE,  
SILICOMANGANESE, AND MANGANESE METAL BY COUNTRIES OR LOCALITIES OF DESTINATION  
IN DECEMBER 2018<sup>1,2</sup>

Source	Gross weight (metric tons)	F.a.s. <sup>4</sup> value (thousands)	January–December <sup>3</sup>	
			Gross weight (metric tons)	F.a.s. <sup>4</sup> value (thousands)
<b>Ore and concentrates with 20% or more manganese:</b>				
Canada	24	\$27	363	\$361
Mexico	--	--	2,330	1,940
Netherlands	--	--	177	812
Other [3 countries and (or) localities]	--	--	45	165
<b>Total</b>	<b>24</b>	<b>27</b>	<b>2,920</b>	<b>3,270</b>
<b>Ferromanganese:</b>				
<b>2% or less carbon:</b>				
Canada	--	--	758	1,300
China	5	11	9	18
Mexico	--	--	41	110
Taiwan	--	--	21	40
Other [2 countries and (or) localities]	--	--	6	19
<b>Total</b>	<b>5</b>	<b>11</b>	<b>835</b>	<b>1,490</b>
<b>More than 2% carbon:</b>				
Canada	1,270	1,620	9,660	13,000
Costa Rica	1	4	6	28
Mexico	--	--	105	100
United Kingdom	2	6	25	71
Other [4 countries and (or) localities]	16	46	23	65
<b>Total</b>	<b>1,290</b>	<b>1,670</b>	<b>9,820</b>	<b>13,300</b>
<b>Silicomanganese:</b>				
Canada	60	93	4,200	6,050
Costa Rica	2	3	2	3
Ecuador	--	--	125	162
Mexico	--	--	8	16
<b>Total</b>	<b>62</b>	<b>96</b>	<b>4,340</b>	<b>6,230</b>
<b>Metal, including alloys and waste and scrap:<sup>5</sup></b>				
Canada	18	24	32	84
China	--	--	5	75
France	--	--	9	36
Germany	--	--	1	17
India	39	20	314	286
Japan	--	--	83	303
Malaysia	298	184	3,160	1,720
Mexico	2	60	167	1,340
Norway	--	--	10	472
Pakistan	83	28	143	44
South Africa	--	--	216	184
Other [11 countries and (or) localities]	5	18	18	132
<b>Total</b>	<b>444</b>	<b>334</b>	<b>4,160</b>	<b>4,700</b>
<b>Grand total</b>	<b>1,830</b>	<b>2,140</b>	<b>22,100</b>	<b>29,000</b>

-- Zero.

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

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

<sup>3</sup>May include revised data that are not broken out by specific month(s).

<sup>4</sup>Free alongside ship.

<sup>5</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 2018, BY CLASS<sup>1</sup>

Class	Gross weight (metric tons)	Value <sup>3</sup> (thousands)	Principal sources and destinations: gross weight (metric tons); value <sup>3</sup> (thousands)	January–December <sup>2</sup>		
				Gross weight (metric tons)	Value <sup>3</sup> (thousands)	Principal sources and destinations: gross weight (metric tons); value <sup>3</sup> (thousands)
<b>Imports for consumption:</b>						
Manganese oxides other than dioxide	2,044	\$1,326	South Africa 1,310; \$591	33,044	\$25,997	South Africa 16,580; \$9,863
Manganites, manganates, and other permanganates	--	--	--	20	54	Hong Kong 20; \$42
Potassium permanganate	119	316	India 119; \$316	1,455	3,831	India 1,434; \$3,749
Sodium permanganate	77	184	China 77; \$184	1,413	3,186	China 1,396; \$3,143
Sulfates, basket category, including manganese sulfate	8,391	6,008	India 3,303; \$1,880	71,924	58,335	China 30,016; \$22,744
<b>Exports:</b>						
Manganese dioxide	599	767	Canada 362; \$317	7,736	10,748	Canada 5,155; \$4,495
Manganese oxides other than dioxide	507	979	Korea, Republic of 117; \$213	6,292	11,860	Poland 972; \$1,321
Manganites, manganates, and other permanganates	26	52	Canada 26; \$52	244	788	Mexico 153; \$592
Potassium permanganate	446	1,206	Belgium 254; \$607	3,461	10,023	Belgium 1,670; \$4,060
Sodium permanganate	111	299	Belgium 58; \$121	862	2,754	Belgium 325; \$665
Sulfates, basket category, including manganese sulfate	1,261	2,732	Canada 751; \$527	19,740	32,353	Canada 13,827; \$11,192

-- Zero.

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

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

<sup>3</sup>For imports, customs value; for exports, free alongside ship value.

Source: U.S. Census Bureau.