

MANGANESE

(Data in thousand metric tons gross weight unless otherwise specified)

Domestic Production and Use: Manganese ore containing 20% or more manganese has not been produced domestically since 1970. Manganese ore was consumed mainly by eight firms with plants principally in the East and Midwest. Most ore consumption was related to steel production, either directly in pig iron manufacture or indirectly through upgrading the ore to ferroalloys. Additional quantities of ore were used for such nonmetallurgical purposes as production of dry cell batteries, in plant fertilizers and animal feed, and as a brick colorant. Manganese ferroalloys were produced at two smelters. Construction, machinery, and transportation end uses accounted for about 33%, 13%, and 10%, respectively, of manganese consumption. Most of the rest went to a variety of other iron and steel applications. In 2014, the value of domestic consumption, estimated from foreign trade data, was about \$1.2 billion.

Salient Statistics—United States: ¹	2010	2011	2012	2013	2014^e
Production, mine ²	—	—	—	—	—
Imports for consumption:					
Manganese ore	489	552	506	549	430
Ferromanganese	326	348	401	331	360
Silicomanganese ³	297	348	348	329	450
Exports:					
Manganese ore	14	1	2	1	1
Ferromanganese	19	5	5	2	7
Silicomanganese	9	8	6	6	2
Shipments from Government stockpile excesses: ⁴					
Manganese ore	—	-75	—	—	—
Ferromanganese	29	10	6	1	20
Consumption, reported: ⁵					
Manganese ore ⁶	450	532	538	523	500
Ferromanganese	292	303	382	368	370
Silicomanganese	97	106	150	152	150
Consumption, apparent, manganese ⁷	721	699	843	794	840
Price, average, 46% to 48% Mn metallurgical ore, dollars per metric ton unit, contained Mn:					
Cost, insurance, and freight (c.i.f.), U.S. ports ^e	8.45	6.67	4.97	4.61	4.30
CNF ⁸ China, CRU Ryan's Notes	7.23	5.72	4.84	5.29	⁹ 5.01
Stocks, producer and consumer, yearend:					
Manganese ore ⁶	168	250	203	217	200
Ferromanganese	32	25	31	27	27
Silicomanganese	28	22	19	6	15
Net import reliance ¹⁰ as a percentage of apparent consumption	100	100	100	100	100

Recycling: Manganese was recycled incidentally as a constituent of ferrous and nonferrous scrap; however, scrap recovery specifically for manganese was negligible. Manganese is recovered along with iron from steel slag.

Import Sources (2010–13): Manganese ore: Gabon, 61%; Australia, 16%; South Africa, 14%; Ghana, 4%; and other, 5%. Ferromanganese: South Africa, 57%; Norway, 9%; Ukraine, 8%; Republic of Korea, 7%; and other, 19%. Manganese contained in principal manganese imports:¹¹ South Africa, 32%; Gabon, 22%; Australia, 12%; Georgia, 8%; and other, 26%.

Tariff:	Item	Number	Normal Trade Relations
			12–31–14
	Ore and concentrate	2602.00.0040/60	Free.
	Manganese dioxide	2820.10.0000	4.7% ad val.
	High-carbon ferromanganese	7202.11.5000	1.5% ad val.
	Silicomanganese	7202.30.0000	3.9% ad val.
	Metal, unwrought	8111.00.4700/4900	14% ad val.

Depletion Allowance: 22% (Domestic), 14% (Foreign).

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Government Stockpile:

Stockpile Status—9–30–14¹²

Material	Inventory	Disposal Plan FY 2014	Disposals FY 2014
Manganese ore ¹³	292	91	—
Ferromanganese, high-carbon ^e	329	91	17

Events, Trends, and Issues: U.S. manganese apparent consumption was projected to increase by 5% to 840,000 metric tons in 2014 compared to that in 2013. This happened despite a significant (22%) decrease in domestic manganese ore consumption during 2014 that resulted from a 6-month curtailment in production at one U.S. silicomanganese plant. Greater ferromanganese and silicomanganese imports and excess high-carbon ferromanganese shipments from the Government stockpile in 2014 led to the increased U.S. apparent consumption. The annual average domestic manganese ore contract price followed the 7% decrease in the average Chinese spot market price for metallurgical-grade ore in 2014.

World Mine Production and Reserves (metal content): Reserves for India have been revised based on the average metal content of manganese ore produced from 2009–13.

	Mine production		Reserves ¹⁴
	2013	2014 ^e	
United States	—	—	—
Australia	2,980	3,100	97,000
Brazil	1,120	1,100	54,000
Burma	157	200	NA
China	3,000	3,200	44,000
Gabon	1,970	2,000	24,000
Ghana	533	540	NA
India	920	940	52,000
Kazakhstan	390	390	5,000
Malaysia	430	440	NA
Mexico	212	220	5,000
South Africa	4,300	4,700	150,000
Ukraine	300	300	140,000
Other countries	597	650	Small
World total (rounded)	16,900	18,000	570,000

World Resources: Land-based manganese resources are large but irregularly distributed; those in the United States are very low grade and have potentially high extraction costs. South Africa accounts for about 75% of the world's identified manganese resources, and Ukraine accounts for 10%.

Substitutes: Manganese has no satisfactory substitute in its major applications.

^eEstimated. NA Not available. — Zero.

¹Manganese content typically ranges from 35% to 54% for manganese ore and from 74% to 95% for ferromanganese.

²Excludes insignificant quantities of low-grade manganiferous ore.

³Imports more nearly represent amount consumed than does reported consumption.

⁴Net quantity, in manganese content, defined as stockpile shipments – receipts.

⁵Manganese consumption cannot be estimated as the sum of manganese ore and ferromanganese consumption because so doing would count manganese in ore used to produce ferromanganese twice.

⁶Consumers only, exclusive of ore consumed at iron and steel plants.

⁷Thousand metric tons, manganese content; based on estimated average content for all components except imports, for which content is reported.

⁸Cost and freight (CNF) represents the costs paid by a seller to ship manganese ore by sea to a Chinese port; excludes insurance.

⁹Average weekly price through September 2014.

¹⁰Defined as imports – exports + adjustments for Government and industry stock changes.

¹¹Includes imports of ferromanganese, manganese ore, silicomanganese, synthetic manganese dioxide, and unwrought manganese metal.

¹²See [Appendix B](#) for definitions.

¹³Metallurgical grade.

¹⁴See [Appendix C](#) for resource/reserve definitions and information concerning data sources.