

MANGANESE

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

Domestic Production and Use: Manganese ore containing 35% 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, directly in pig iron manufacture and indirectly through upgrading 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 29%, 10%, and 10%, respectively, of manganese consumption. Most of the rest went to a variety of other iron and steel applications. The value of domestic consumption, estimated from foreign trade data, was about \$950 million.

Salient Statistics—United States:¹	2009	2010	2011	2012	2013^e
Production, mine ²	—	—	—	—	—
Imports for consumption:					
Manganese ore	269	489	552	506	500
Ferromanganese	153	326	348	401	320
Silicomanganese ³	130	297	348	348	340
Exports:					
Manganese ore	15	14	1	2	1
Ferromanganese	24	19	5	5	2
Silicomanganese	19	9	8	6	7
Shipments from Government stockpile excesses: ⁴					
Manganese ore	3	—	-75	—	—
Ferromanganese	25	26	10	6	1
Consumption, reported: ⁵					
Manganese ore ⁶	422	450	532	538	500
Ferromanganese	242	292	303	382	370
Silicomanganese	94	97	106	150	145
Consumption, apparent, manganese ⁷	451	721	699	843	770
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	7.95	9.64	7.88	6.04	6.00
CNF ⁸ China, Ryan's Notes	5.61	7.23	5.72	4.84	⁹ 5.51
Stocks, producer and consumer, yearend:					
Manganese ore ⁶	115	168	250	203	200
Ferromanganese	31	32	25	31	30
Silicomanganese	26	26	22	19	10
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 (2009–12): Manganese ore: Gabon, 60%; Australia, 17%; South Africa, 14%; Ghana, 4%; and other, 5%. Ferromanganese: South Africa, 55%; Ukraine, 10%; Norway, 9%; Republic of Korea, 7%; and other, 19%. Manganese contained in principal manganese imports:¹¹ South Africa, 34%; Gabon, 20%; Australia, 10%; Georgia, 8%; and other, 28%.

Tariff:	Item	Number	Normal Trade Relations
			12–31–13
	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:

Material	Stockpile Status—9–30–13 ¹²			
	Uncommitted inventory	Authorized for disposal	Disposal plan FY 2013	Disposals FY 2013
Manganese ore ¹³	292	292	201	—
Ferromanganese, high-carbon	347	347	91	2

Events, Trends, and Issues: U.S. steel production in 2013 was projected to decrease slightly from that in 2012. Imports of ferromanganese were expected to be 20% less in 2013 than in 2012. As a result, U.S. manganese apparent consumption decreased by an estimated 8% to 770,000 tons in 2013. The annual average domestic manganese ore contract price followed the nominal decrease in the average international price for metallurgical-grade ore set between Japanese consumers and major suppliers in 2013. More than 5 million tons per year of additional manganese ore production capacity was under development worldwide in 2013 through mine expansions and startups, the bulk (57%) of which was in South Africa.

World Mine Production and Reserves (metal content): Reserves for Brazil have been revised based on reports by the Government of Brazil. Reserves for Gabon were revised based on new information from major manganese producers in Gabon.

	Mine production		Reserves ¹⁴
	2012	2013 ^e	
United States	—	—	—
Australia	3,080	3,100	97,000
Brazil	1,330	1,400	54,000
Burma	115	120	NA
China	2,900	3,100	44,000
Gabon	1,650	2,000	24,000
India	800	850	49,000
Kazakhstan	380	390	5,000
Malaysia	429	250	NA
Mexico	188	200	5,000
South Africa	3,600	3,800	150,000
Ukraine	416	350	140,000
Other countries	920	950	Small
World total (rounded)	15,800	17,000	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 October 2013.

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

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

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

¹³Metallurgical grade.

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