

MANGANESE

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

Domestic Production and Use: Manganese ore containing 20% or more manganese has not been produced domestically since 1970. Manganese ore was consumed mainly by six 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. Manganese ferroalloys were produced at two plants. Additional quantities of ore were used for such nonmetallurgical purposes as production of dry cell batteries, in fertilizers and animal feed, and as a brick colorant.

Salient Statistics—United States: ¹	2016	2017	2018	2019	2020^e
Production, mine	—	—	—	—	—
Imports for consumption:					
Manganese ores and concentrates	281	297	440	434	310
Ferromanganese	229	331	427	332	240
Silicomanganese ²	264	351	412	351	240
Exports:					
Manganese ores and concentrates	1	1	3	1	1
Ferromanganese	7	9	10	5	4
Silicomanganese	2	8	4	2	2
Shipments from Government stockpile: ³					
Manganese ore	—	—	—	—	—
Ferromanganese	44	9	10	8	21
Consumption, reported:					
Manganese ore ⁴	410	378	370	^e 370	330
Ferromanganese	342	345	348	336	300
Silicomanganese ²	139	141	139	143	130
Consumption, apparent, manganese ⁵	545	714	793	^e 780	520
Price, average, 44% Mn metallurgical ore, contained Mn, cost, insurance, and freight, China, dollars per metric ton unit ⁶	4.34	5.97	7.16	5.63	4.72
Stocks, producer and consumer, yearend:					
Manganese ore ⁴	207	148	185	^e 190	190
Ferromanganese	21	17	27	16	16
Silicomanganese	10	11	21	11	11
Net import reliance ⁷ 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 (2016–19): Manganese ore: Gabon, 69%; South Africa, 17%; Mexico, 8%; Australia, 4%; and other, 2%. Ferromanganese: Australia, 21%; South Africa, 21%; Norway, 16%; the Republic of Korea, 12%; and other, 30%. Silicomanganese: Georgia, 26%; South Africa, 22%; Australia, 20%; and other, 32%. Manganese contained in principal manganese imports:⁸ Gabon, 20%; South Africa, 19%; Australia, 15%; Georgia, 10%; and other, 36%.

Tariff:	Item	Number	Normal Trade Relations
			<u>12–31–20</u>
	Ores and concentrates	2602.00.0040, 2602.00.0060	Free.
	Manganese dioxide	2820.10.0000	4.7% ad val.
	High-carbon ferromanganese	7202.11.5000	1.5% ad val.
	Ferrosilicon manganese (silicomanganese)	7202.30.0000	3.9% ad val.
	Metal, unwrought	8111.00.4700, 8111.00.4900	14% ad val.

Depletion Allowance: 22% (domestic), 14% (foreign).

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Government Stockpile:⁹

Material	Inventory as of 9–30–20	FY 2020		FY 2021	
		Potential acquisitions	Potential disposals	Potential acquisitions	Potential disposals
Manganese ore, metallurgical grade	292	—	292	—	292
Ferromanganese, high-carbon	163	—	45	—	45
Manganese metal, electrolytic	0.432	5	—	5	—

Events, Trends, and Issues: Steel production, the leading use of manganese, decreased across the globe in 2020 compared with production in 2019 owing to reduced demand attributed to the global COVID-19 pandemic. Global production of manganese ore was estimated to be about 6% less than that in 2019. The leading countries for manganese ore production were, in descending order on a contained-weight basis, South Africa, Australia, and Gabon. Total U.S. manganese imports were estimated to have decreased by approximately 30% in 2020 compared with those in 2019. By September 2020, average spot market prices for manganese ore from China had decreased by 16% compared with the annual average spot price in 2019.

World Mine Production and Reserves (manganese content): Reserves for Australia, Brazil, and South Africa were revised based on Government and industry sources.

	Mine production		Reserves ¹⁰
	2019	2020 ^e	
United States	—	—	—
Australia	3,180	3,300	¹¹ 230,000
Brazil	1,740	1,200	270,000
Burma	430	400	NA
China	1,330	1,300	54,000
Côte d'Ivoire	482	460	NA
Gabon	2,510	2,800	61,000
Georgia	116	150	NA
Ghana	1,550	1,400	13,000
India	801	640	34,000
Kazakhstan, concentrate	140	130	5,000
Malaysia	390	350	NA
Mexico	202	190	5,000
South Africa	5,800	5,200	520,000
Ukraine, concentrate	500	550	140,000
Vietnam	158	150	NA
Other countries	270	270	Small
World total (rounded)	19,600	18,500	1,300,000

World Resources:¹⁰ 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 40% of the world's manganese reserves, and Brazil accounts for about 20%.

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.

²Imports more nearly represent amount consumed than does reported consumption.

³Defined as stockpile shipments – receipts, thousand tons, manganese content. If net receipts, a negative quantity is shown.

⁴Exclusive of ore consumed directly at iron and steel plants and associated yearend stocks.

⁵Defined as imports – exports + adjustments for Government and industry stock changes, thousand tons, manganese content. Based on estimates of average content for all significant components—including ore, manganese dioxide, ferromanganese, silicomanganese, and manganese metal—except imports, for which content is reported.

⁶For average metallurgical-grade ore containing 44% manganese, as reported by CRU Group.

⁷Defined as imports – exports + adjustments for Government and industry stock changes, thousand tons, manganese content.

⁸Includes imports of ferromanganese, manganese ore, silicomanganese, synthetic manganese dioxide, and unwrought manganese metal.

⁹See Appendix B for definitions.

¹⁰See Appendix C for resource and reserve definitions and information concerning data sources.

¹¹For Australia, Joint Ore Reserves Committee-compliant reserves were 76 million tons gross weight.