MANGANESE STATISTICS[1]
U.S. GEOLOGICAL SURVEY
[All values in metric tons (t) manganese content unless otherwise noted]
Last modification: November 28, 2012

Year	Production	Imports	Exports	Stocks	Reported consumption Mn ore	Reported consumption Mn alloys	Apparent consumption	Unit value ($/t)	Unit value (98$/t)	World production
1900	28,000	174,000	9,070	NA	NA	NA	202,000	23	450	592,000
1901	28,000	76,200	9,070	NA	NA	NA	104,000	26	510	429,000
1902	19,000	139,000	9,070	NA	NA	NA	158,000	26	500	441,000
1903	19,000	154,000	9,070	NA	NA	NA	173,000	43	790	411,000
1904	18,000	81,600	9,070	NA	NA	NA	99,800	24	430	416,000
1905	29,000	149,000	9,070	NA	NA	NA	178,000	28	520	481,000
1906	30,000	179,000	9,070	NA	NA	NA	209,000	48	870	868,000
1907	42,000	193,000	9,070	NA	NA	NA	235,000	46	810	1,080,000
1908	35,000	158,000	9,070	NA	NA	NA	193,000	27	480	641,000
1909	42,000	133,000	9,070	NA	NA	NA	175,000	29	520	811,000
1910	42,000	214,000	7,260	NA	NA	NA	256,000	30	530	888,000
1911	32,000	193,000	7,260	NA	NA	NA	225,000	29	510	719,000
1912	32,000	160,000	7,260	NA	NA	NA	191,000	25	420	856,000
1913	34,000	303,000	7,260	NA	NA	NA	337,000	28	460	1,040,000
1914	45,000	208,000	7,260	NA	NA	NA	261,000	27	445	840,000
1915	83,000	155,000	907	NA	NA	NA	237,000	29	471	636,000
1916	174,000	308,000	907	NA	NA	NA	481,000	50	742	850,000
1917	284,000	376,000	907	NA	NA	NA	660,000	47	594	864,000
1918	419,000	301,000	4,540	NA	NA	NA	716,000	73	794	934,000
1919	127,000	317,000	3,630	NA	NA	NA	440,000	81	759	550,000
1920	210,000	345,000	2,720	NA	NA	NA	552,000	57	465	754,000
1921	21,000	203,000	907	NA	113,000	NA	223,000	19	169	523,000
1922	135,000	262,000	907	NA	168,000	NA	396,000	33	318	535,000
1923	208,000	178,000	3,630	NA	282,000	NA	382,000	42	403	731,000
1924	171,000	288,000	2,720	NA	231,000	NA	455,000	36	341	919,000
1925	230,000	362,000	4,540	NA	277,000	NA	578,000	40	375	1,170,000
1926	212,000	353,000	907	NA	328,000	NA	564,000	39	359	1,370,000
1927	188,000	347,000	907	NA	296,000	NA	534,000	35	327	1,430,000
1928	134,000	325,000	7,260	NA	304,000	NA	452,000	37	353	1,280,000
1929	158,000	385,000	907	NA	364,000	NA	542,000	38	366	1,580,000
1930	122,000	269,000	5,440	NA	366,000	NA	386,000	33	322	1,590,000
1931	69,000	165,000	907	NA	215,000	NA	233,000	26	280	982,000
1932	18,000	61,700	7,260	NA	68,000	NA	79,800	35	420	559,000
1933	24,000	181,000	7,260	NA	175,000	NA	206,000	39	485	779,000
1934	45,000	192,000	7,260	NA	219,000	NA	238,000	29	353	1,310,000
1935	89,000	221,000	7,260	NA	275,000	NA	310,000	31	368	1,800,000
1936	123,000	455,000	7,260	NA	556,000	NA	578,000	27	320	2,340,000
1937	164,000	482,000	1,810	NA	642,000	NA	644,000	27	311	2,740,000
1938	47,000	263,000	7,260	NA	296,000	NA	310,000	35	410	2,380,000
1939	139,000	368,000	2,720	NA	431,000	NA	504,000	35	415	1,110,000
1940	188,000	639,000	10,900	NA	627,000	472,000	816,000	32	367	2,540,000
1941	210,000	756,000	3,630	NA	748,000	531,000	961,000	34	380	2,450,000
1942	285,000	705,000	5,440	NA	694,000	592,000	990,000	35	346	2,290,000
1943	294,000	663,000	9,070	NA	695,000	594,000	948,000	36	336	1,800,000
1944	287,000	578,000	907	NA	696,000	594,000	864,000	44	405	1,270,000
1945	236,000	601,000	907	NA	652,000	527,000	836,000	49	446	1,900,000
1946	187,000	713,000	11,800	NA	504,000	415,000	870,000	49	410	1,650,000
1947	184,000	625,000	19,100	NA	619,000	544,000	790,000	51	375	1,750,000
1948	200,000	708,000	18,100	NA	665,000	550,000	890,000	53	362	1,830,000
1949	154,000	632,000	7,260	1,520,000	575,000	498,000	797,000	58	398	2,160,000

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Year	Production	Imports	Exports	Stocks	Reported consumption Mn ore	Reported consumption Mn alloys	Apparent consumption	Unit value ($/t)	Unit value (98$/t)	World production
1950	171,000	877,000	4,000	1,650,000	628,000	619,000	960,000	71	478	2,530,000
1951	224,000	868,000	4,000	1,630,000	796,000	716,000	1,100,000	73	461	3,180,000
1952	190,000	1,180,000	5,000	2,020,000	746,000	651,000	971,000	84	519	4,440,000
1953	244,000	1,550,000	4,000	2,710,000	891,000	760,000	1,120,000	97	589	4,940,000
1954	161,000	967,000	4,000	3,110,000	725,000	582,000	720,000	89	539	4,500,000
1955	239,000	953,000	4,000	3,180,000	885,000	760,000	1,120,000	82	499	4,870,000
1956	224,000	1,070,000	4,000	3,660,000	931,000	700,000	807,000	96	574	5,310,000
1957	233,000	1,540,000	8,000	4,280,000	985,000	761,000	1,150,000	121	703	5,820,000
1958	178,000	1,100,000	4,000	4,680,000	632,000	556,000	865,000	109	612	5,580,000
1959	139,000	1,110,000	4,000	4,970,000	688,000	624,000	963,000	102	571	5,830,000
1960	106,000	1,200,000	5,000	5,160,000	839,000	657,000	977,000	95	523	6,120,000
1961	70,800	1,060,000	6,000	5,520,000	741,000	648,000	764,000	103	563	6,110,000
1962	66,200	980,000	8,170	5,670,000	808,000	675,000	887,000	88	474	6,400,000
1963	85,300	1,020,000	5,440	5,780,000	789,000	755,000	994,000	75	400	6,630,000
1964	71,700	1,040,000	13,600	5,780,000	983,000	862,000	1,100,000	79	415	7,240,000
1965	75,300	1,300,000	11,000	5,900,000	1,230,000	896,000	1,250,000	77	398	7,980,000
1966	79,800	1,310,000	9,070	6,050,000	1,020,000	878,000	1,230,000	81	405	8,150,000
1967	66,200	1,060,000	9,980	6,080,000	1,020,000	823,000	1,090,000	79	387	7,510,000
1968	43,500	955,000	13,600	6,020,000	961,000	850,000	1,040,000	71	334	7,800,000
1969	84,400	1,130,000	12,700	6,030,000	1,000,000	883,000	1,190,000	65	287	8,420,000
1970	59,900	989,000	27,200	5,840,000	1,050,000	822,000	1,200,000	68	284	8,200,000
1971	34,500	1,040,000	27,200	5,830,000	958,000	743,000	1,060,000	73	294	9,070,000
1972	26,300	996,000	17,200	5,600,000	1,030,000	795,000	1,240,000	87	339	9,080,000
1973	28,100	960,000	36,300	5,140,000	929,000	927,000	1,410,000	97	357	9,740,000
1974	31,800	879,000	103,000	4,590,000	825,000	936,000	1,350,000	160	528	9,270,000
1975	17,200	1,010,000	119,000	4,470,000	803,000	748,000	1,030,000	211	640	9,810,000
1976	28,100	1,020,000	67,100	4,220,000	716,000	759,000	1,240,000	246	705	10,000,000
1977	24,500	848,000	70,800	3,640,000	602,000	746,000	1,380,000	269	722	8,690,000
1978	34,500	800,000	106,000	3,130,000	590,000	828,000	1,280,000	288	719	8,690,000
1979	28,100	864,000	53,500	2,840,000	607,000	825,000	1,130,000	318	715	9,800,000
1980	20,900	780,000	47,200	2,730,000	459,000	680,000	933,000	354	700	9,670,000
1981	21,800	831,000	44,500	2,610,000	460,000	701,000	932,000	361	647	8,400,000
1982	3,630	490,000	24,500	2,470,000	258,000	393,000	610,000	444	750	8,580,000
1983	3,630	492,000	24,500	2,450,000	233,000	384,000	606,000	363	594	7,780,000
1984	9,980	550,000	39,000	2,370,000	272,000	437,000	569,000	403	633	8,600,000
1985	1,810	552,000	39,900	2,260,000	241,000	416,000	633,000	394	597	8,690,000
1986	907	625,000	29,900	2,190,000	221,000	351,000	662,000	375	557	8,830,000
1987	1,810	547,000	42,600	2,060,000	231,000	383,000	634,000	394	565	8,340,000
1988	907	765,000	48,100	2,100,000	244,000	425,000	682,000	487	671	8,650,000
1989	907	777,000	41,700	2,110,000	261,000	397,000	723,000	607	798	9,250,000
1990	907	611,000	54,400	2,040,000	241,000	411,000	630,000	688	858	9,080,000
1991	0	565,000	52,000	1,950,000	237,000	362,000	598,000	807	966	7,600,000
1992	0	554,000	32,000	1,880,000	214,000	366,000	596,000	654	760	7,260,000
1993	0	624,000	37,000	1,770,000	195,000	365,000	696,000	605	683	7,070,000
1994	0	644,000	30,500	1,690,000	219,000	372,000	694,000	602	662	6,530,000
1995	0	657,000	32,400	1,640,000	231,000	384,000	676,000	599	640	7,970,000
1996	0	765,000	40,400	1,590,000	231,000	368,000	776,000	650	676	8,180,000
1997	0	626,000	66,700	1,540,000	222,000	373,000	643,000	635	645	7,520,000
1998	0	692,000	32,800	1,460,000	240,000	343,000	776,000	591	591	7,330,000
1999	0	711,000	29,900	1,420,000	233,000	331,000	719,000	535	523	6,390,000

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Year	Production	Imports	Exports	Stocks	Reported consumption Mn ore	Reported consumption Mn alloys	Apparent consumption	Unit value ($/t)	Unit value (98$/t)	World production
2000	0	764,000	27,200	1,380,000	238,000	328,000	768,000	582	551	6,960,000
2001	0	620,000	26,500	1,280,000	236,000	289,000	692,000	529	487	7,580,000
2002	0	641,000	17,800	1,220,000	181,000	277,000	696,000	471	426	7,800,000
2003	0	593,000	22,900	1,150,000	201,000	276,000	643,000	599	530	8,790,000
2004	0	885,000	74,200	920,000	228,000	341,000	1,030,000	1,090	944	9,900,000
2005	0	805,000	25,000	873,000	187,000	305,000	773,000	712	594	11,000,000
2006	0	869,000	26,300	697,000	172,000	314,000	1,060,000	800	646	11,500,000
2007	0	878,000	48,400	490,000	174,000	303,000	979,000	1,190	935	12,000,000
2008	0	930,000	65,500	516,000	235,000	347,000	844,000	2,380	1,800	13,200,000
2009	0	391,000	55,800	408,000	242,000	276,000	451,000	1,370	1,040	11,200,000
2010	0	757,000	37,300	407,000	234,000	311,000	721,000	1,500	1,120	15,100,000
2011	0	824,000	19,700	509,000	256,000	314,000	699,000	1,460	1,060	16,000,000

NA Not available.

[1]Compiled by T.G. Goonan, T.S. Jones (retired), and L.A. Corathers.

Data are calculated, estimated, or reported. See notes for more information.

Manganese Worksheet Notes

Data Sources
The sources of data for the manganese worksheet are the mineral statistics publications of the former U.S. Bureau of Mines (USBM) and the U.S. Geological Survey (USGS)— Mineral Facts and Problems (MFP); Minerals Yearbook (MYB) and its predecessor, Mineral Resources of the United States (MR); Mineral Commodity Summaries (MCS); Minerals & Materials (a monthly publication) (M&M); USBM Information Circular 9399 (IC 9399), Manganese Material Flow Patterns; and Materials Survey—Manganese (U.S. Bureau of Mines and U.S. Geological Survey, 1952). The years of publication and corresponding years of data coverage are listed in the References sections below.

Production
U.S. manganese production data include the amount of contained manganese in manganese ore (containing 35 percent or more manganese) and ferruginous manganese ore (containing less than 35 percent, but not less than 10 percent manganese) mined in the United States. The manganese contained in manganiferous iron ore (containing less than 10 percent manganese) is excluded from production. Manganiferous iron ores are sought for their iron units, and the contained manganese is an associated minor constituent. Because manganese is not directly recycled to a great degree, production means primary production, exclusive of the amounts of manganese circulating in recycled steel scrap. Production data for 1900–50 was extracted from Materials Survey—Manganese. For 1951–90, the data was extracted from IC 9399, and for 1991 to the most recent year, the information was reported in the MYB series. Manganese ore has not been produced in the United States since 1979.

Imports
Import data report the amount of manganese contained in imported manganese ore, ferroalloys (high-, medium-, and low-carbon ferromanganese, silicomanganese, and spiegeleisen), and the amount of manganese estimated to be contained in imported manganese dioxide and manganese metal. Import data exclude all manufactured products that are one step removed from ferroalloys or chemicals, such as steel or other products that contain manganese. Except for 1916–19, the manganese content of U.S. imports as ores and ferroalloys have always greatly exceeded manganese derived from domestic ore production. Except for 1960–90, where the data was extracted from IC 9399, the remaining data was reported in the MYB import table data series.

Exports
Export data report the amount of manganese estimated to be contained in exported manganese ore, ferroalloys (high-, medium- and low-carbon ferromanganese, silicomanganese, and spiegeleisen), manganese dioxide, and manganese metal. Manganese exports have always been very small compared to manganese imports. Except for 1960–90, where the data was extracted from IC 9399, the remaining data was reported in the MYB export table data series. Since 2002, re-exports of previously imported materials are not included.

Stocks
Stocks include industry and Government stocks. Industry and Government stock data were first reported in 1949 in the MYB. MYB series data was used for 1949–59. For 1960–79, the information was taken from M&M. For 1980–90, IC 9399 was consulted, and for 1991 to the most recent year, the data was reported in the MYB stocks table data series.

Reported Consumption (manganese ore and manganese alloys)
Reported manganese consumption, taken directly from the MYB salient statistics table data series, is reported as manganese contained in ores and ferroalloys (separate columns). The data in the two reported consumption columns cannot be combined, because much of the imported manganese in ores is processed into ferroalloys. Combining the data would result in significant double accounting. The reporting of manganese ferroalloy consumption in the MYB series began in 1940 and reporting of the consumption of manganese ores began in 1921. Beginning in 1996, reported consumption excludes data from iron and steel plants.

Apparent Consumption
Apparent consumption, as defined here, is the sum of production, plus net imports (imports minus exports), plus changes in government and industry stocks (beginning-of-year minus end-of-year). The parameters that go into calculating apparent consumption change over time. For example, stock adjustments could not be made prior to 1950, because stock information was not reported until 1950. Data for apparent consumption was taken, as reported, in IC 9399 for 1900–90, and in MYB salient statistics table data series for 1991 to the most recent year.

Unit Value ($/t)
Unit value is the value of 1 metric ton (t) of manganese apparent consumption. Unit value for manganese is calculated on an annual basis from the U.S. dollar (expressed as current dollars) value of imports (manganese ores and ferroalloys) divided by manganese contained in those imports, as reported in the MYB and MR series. Unit values thus calculated are somewhat greater than those reported in the Mineral Commodity Summaries for 1990 and later years, where the valuation includes valuation of exports, which typically have higher unit values than imports. Estimation of unit value is derived from import data as a weighted average of values for the various forms of manganese imported. This is because the greatest part of apparent consumption is imported. Over the years,

the mix of ores and ferroalloys has changed. In the early 1980s, the unit value of manganese shifted abruptly upward, because the United States began to import more manganese as higher value ferroalloys than as lower value ores.

Unit Value (98$/t)
The Consumer Price Index, with 1998 as the base year, is used to adjust unit value in current dollars to the unit value in constant 1998 dollars.

World Production
World mine production data report contained manganese of world manganese mine production. From 1900 to 1950, the reported values were calculated by multiplying gross weight (adjusted to metric tons) reported in Materials Survey—Manganese (U.S. Bureau of Mines and U.S. Geological Survey, 1952) by 0.45 (45 percent). The 45-percent-content estimate was used for consistency with what appears to have been used for the oldest years given in Mineral Facts and Problems. From 1951 to 1963, the reported values were calculated by multiplying the gross weight (adjusted to metric tons) reported in MYB series by 0.45. From 1964 to 1979, the reported values were taken directly from the values (adjusted to metric tons) reported in the MFP. For 1980 to the most recent year, the reported values were taken directly from the values published in MYB world production table data series. In more recent years, the manganese content figure has been closer to 35 percent.

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