

MANGANESE STATISTICS¹
U.S. GEOLOGICAL SURVEY

[All values in metric tons (t) contained manganese, unless otherwise noted]

Last modification: December 11, 2007

| 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 | | | | 202,000 | 23 | 450 | 592,000 |
| 1901 | 28,000 | 76,200 | 9,070 | | | | 104,000 | 26 | 510 | 429,000 |
| 1902 | 19,000 | 139,000 | 9,070 | | | | 158,000 | 26 | 500 | 441,000 |
| 1903 | 19,000 | 154,000 | 9,070 | | | | 173,000 | 43 | 790 | 411,000 |
| 1904 | 18,000 | 81,600 | 9,070 | | | | 99,800 | 24 | 430 | 416,000 |
| 1905 | 29,000 | 149,000 | 9,070 | | | | 178,000 | 28 | 520 | 481,000 |
| 1906 | 30,000 | 179,000 | 9,070 | | | | 209,000 | 48 | 870 | 868,000 |
| 1907 | 42,000 | 193,000 | 9,070 | | | | 235,000 | 46 | 810 | 1,080,000 |
| 1908 | 35,000 | 158,000 | 9,070 | | | | 193,000 | 27 | 480 | 641,000 |
| 1909 | 42,000 | 133,000 | 9,070 | | | | 175,000 | 29 | 520 | 811,000 |
| 1910 | 42,000 | 214,000 | 7,260 | | | | 256,000 | 30 | 530 | 888,000 |
| 1911 | 32,000 | 193,000 | 7,260 | | | | 225,000 | 29 | 510 | 719,000 |
| 1912 | 32,000 | 160,000 | 7,260 | | | | 191,000 | 25 | 420 | 856,000 |
| 1913 | 34,000 | 303,000 | 7,260 | | | | 337,000 | 28 | 460 | 1,040,000 |
| 1914 | 45,000 | 208,000 | 7,260 | | | | 261,000 | 27 | 445 | 840,000 |
| 1915 | 83,000 | 155,000 | 907 | | | | 237,000 | 29 | 471 | 636,000 |
| 1916 | 174,000 | 308,000 | 907 | | | | 481,000 | 50 | 742 | 850,000 |
| 1917 | 284,000 | 376,000 | 907 | | | | 660,000 | 47 | 594 | 864,000 |
| 1918 | 419,000 | 301,000 | 4,540 | | | | 716,000 | 73 | 794 | 934,000 |
| 1919 | 127,000 | 317,000 | 3,630 | | | | 440,000 | 81 | 759 | 550,000 |
| 1920 | 210,000 | 345,000 | 2,720 | | | | 552,000 | 57 | 465 | 754,000 |
| 1921 | 21,000 | 203,000 | 907 | | 113,000 | | 223,000 | 19 | 169 | 523,000 |
| 1922 | 135,000 | 262,000 | 907 | | 168,000 | | 396,000 | 33 | 318 | 535,000 |
| 1923 | 208,000 | 178,000 | 3,630 | | 282,000 | | 382,000 | 42 | 403 | 731,000 |
| 1924 | 171,000 | 288,000 | 2,720 | | 231,000 | | 455,000 | 36 | 341 | 919,000 |
| 1925 | 230,000 | 362,000 | 4,540 | | 277,000 | | 578,000 | 40 | 375 | 1,170,000 |
| 1926 | 212,000 | 353,000 | 907 | | 328,000 | | 564,000 | 39 | 359 | 1,370,000 |
| 1927 | 188,000 | 347,000 | 907 | | 296,000 | | 534,000 | 35 | 327 | 1,430,000 |
| 1928 | 134,000 | 325,000 | 7,260 | | 304,000 | | 452,000 | 37 | 353 | 1,280,000 |
| 1929 | 158,000 | 385,000 | 907 | | 364,000 | | 542,000 | 38 | 366 | 1,580,000 |
| 1930 | 122,000 | 269,000 | 5,440 | | 366,000 | | 386,000 | 33 | 322 | 1,590,000 |
| 1931 | 69,000 | 165,000 | 907 | | 215,000 | | 233,000 | 26 | 280 | 982,000 |
| 1932 | 18,000 | 61,700 | 7,260 | | 68,000 | | 79,800 | 35 | 420 | 559,000 |
| 1933 | 24,000 | 181,000 | 7,260 | | 175,000 | | 206,000 | 39 | 485 | 779,000 |
| 1934 | 45,000 | 192,000 | 7,260 | | 219,000 | | 238,000 | 29 | 353 | 1,310,000 |
| 1935 | 89,000 | 221,000 | 7,260 | | 275,000 | | 310,000 | 31 | 368 | 1,800,000 |
| 1936 | 123,000 | 455,000 | 7,260 | | 556,000 | | 578,000 | 27 | 320 | 2,340,000 |
| 1937 | 164,000 | 482,000 | 1,810 | | 642,000 | | 644,000 | 27 | 311 | 2,740,000 |
| 1938 | 47,000 | 263,000 | 7,260 | | 296,000 | | 310,000 | 35 | 410 | 2,380,000 |
| 1939 | 139,000 | 368,000 | 2,720 | | 431,000 | | 504,000 | 35 | 415 | 1,110,000 |
| 1940 | 188,000 | 639,000 | 10,900 | | 627,000 | 472,000 | 816,000 | 32 | 367 | 2,540,000 |
| 1941 | 210,000 | 756,000 | 3,630 | | 748,000 | 531,000 | 961,000 | 34 | 380 | 2,450,000 |
| 1942 | 285,000 | 705,000 | 5,440 | | 694,000 | 592,000 | 990,000 | 35 | 346 | 2,290,000 |
| 1943 | 294,000 | 663,000 | 9,070 | | 695,000 | 594,000 | 948,000 | 36 | 336 | 1,800,000 |
| 1944 | 287,000 | 578,000 | 907 | | 696,000 | 594,000 | 864,000 | 44 | 405 | 1,270,000 |
| 1945 | 236,000 | 601,000 | 907 | | 652,000 | 527,000 | 836,000 | 49 | 446 | 1,900,000 |
| 1946 | 187,000 | 713,000 | 11,800 | | 504,000 | 415,000 | 870,000 | 49 | 410 | 1,650,000 |
| 1947 | 184,000 | 625,000 | 19,100 | | 619,000 | 544,000 | 790,000 | 51 | 375 | 1,750,000 |
| 1948 | 200,000 | 708,000 | 18,100 | | 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 |
| 1950 | 171,000 | 877,000 | 4,000 | 1,650,000 | 628,000 | 619,000 | 960,000 | 71 | 478 | 2,530,000 |

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Last modification: December 11, 2007

| Year | Production | Imports | Exports | Stocks | Reported consumption Mn ore | Reported consumption Mn alloys | Apparent consumption | Unit value (\$/t) | Unit value (98\$/t) | World production |
|------|------------|-----------|---------|-----------|-----------------------------------|--------------------------------------|-------------------------|-------------------------|---------------------------|---------------------|
| 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 |
| 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 |

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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 |
|-------------|-------------------|----------------|----------------|---------------|--|---|---------------------------------|----------------------------------|------------------------------------|-----------------------------|
| 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 | 8,730,000 |
| 2004 | 0 | 885,000 | 74,200 | 920,000 | 228,000 | 341,000 | 1,030,000 | 1,090 | 944 | 9,350,000 |
| 2005 | 0 | 805,000 | 25,000 | 873,000 | 187,000 | 305,000 | 773,000 | 712 | 594 | 10,900,000 |
| 2006 | 0 | 869,000 | 26,300 | 697,000 | 172,000 | 314,000 | 1,050,000 | 800 | 646 | 11,900,000 |

¹Compiled 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. Blank cells in the worksheet indicate that data were not available.

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 the period 1900–50 was extracted from Materials Survey—Manganese. For the years 1951–90, the data was extracted from IC 9399, and for 1991–2006, 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), 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 the period 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 the period 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 the period 1960–90, where the data was extracted from IC 9399, the remaining data was reported in the MYB export table data series. Re-exports of previously imported materials are 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 the years 1949–59. For the years 1960–79, the information was taken from M&M. For the years 1980–90, IC 9399 was consulted, and for the years 1991–2006, 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 recorded 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 the years 1900–90, and in MYB salient statistics table data series for the years 1991–2006.

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. For the period 1900–50, 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. For the period 1951–63, the reported values were calculated by multiplying the gross weight (adjusted to metric tons) reported in MYB series by 0.45. For the period 1964–79, the reported values were taken directly from the values (adjusted to metric tons) reported in the MFP. For the period 1980–2006, 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.

References

- Jones, T.S., 1994, Manganese material flow patterns: U.S. Bureau of Mines Information Circular 9399, 57 p.
- U.S. Bureau of Mines, 1927–34, Mineral Resources of the United States, 1924–31.
- U.S. Bureau of Mines, 1933–96, Minerals Yearbook, 1932–94.
- U.S. Bureau of Mines, 1975, Mineral Facts and Problems, 1975 ed.: U.S. Bureau of Mines Bulletin 667.
- U.S. Bureau of Mines, 1980, Mineral Facts and Problems, 1980 ed.: U.S. Bureau of Mines Bulletin 671.
- U.S. Bureau of Mines, 1981, Minerals & Materials/a monthly survey, January, Table 11.—Manganese, p. 41.
- U.S. Bureau of Mines and U.S. Geological Survey, 1952, Ore recovery, chap. XV of Materials survey—Manganese: Compiled by the U.S. Bureau of Mines and the U.S. Geological Survey for the Materials Office, National Security Resources Board, p. XV-1 to XV-13.
- U.S. Geological Survey, 1901–27, Mineral Resources of the United States, 1900–23.
- U.S. Geological Survey, 1997–2007, Mineral Commodity Summaries, 1997–2007.
- U.S. Geological Survey, 1997–2007, Minerals Yearbook, v. I, 1995–2006.
- U.S. Geological Survey and U.S. Bureau of Mines, 1996, Mineral Commodity Summaries, 1996.

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U.S. Geological Survey, [year of last update, e.g., 2005], [Mineral commodity, e.g., Gold] statistics, *in* Kelly, T.D., and Matos, G.R., comps., Historical statistics for mineral and material commodities in the United States: U.S. Geological Survey Data Series 140, available online at <http://pubs.usgs.gov/ds/2005/140/>. (Accessed [date].)

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