TUNGSTEN STATISTICS[1]
U.S. GEOLOGICAL SURVEY
[All values are in metric tons (t) tungsten content unless otherwise noted]
Last modification: April 1, 2014

Year	Primary production	Secondary production	Imports	Exports	Government shipments	Stocks	Reported consumption	Apparent consumption	Unit value ($/t)	Unit value (98$/t)	World production
1900	NA	NA	NA	NA	0	NA	NA	NA	556	11,000	NA
1901	77.3	NA	NA	NA	0	NA	NA	77.3	359	7,000	NA
1902	79.4	NA	NA	NA	0	NA	NA	79.4	428	8,000	NA
1903	126	NA	NA	NA	0	NA	NA	126	346	6,300	NA
1904	319	NA	NA	NA	0	NA	NA	319	573	10,000	NA
1905	347	NA	NA	NA	0	NA	NA	347	775	14,000	1,700
1906	401	NA	NA	NA	0	NA	NA	401	871	16,000	1,900
1907	708	NA	NA	NA	0	NA	NA	708	1,260	22,000	2,600
1908	290	NA	NA	NA	0	NA	NA	290	794	14,000	1,800
1909	699	NA	NA	NA	0	NA	NA	699	879	16,000	2,500
1910	786	NA	880	40.4	0	NA	NA	1,630	1,070	18,700	3,300
1911	492	NA	202	NA	0	NA	NA	694	830	15,000	3,200
1912	574	NA	699	NA	0	NA	NA	1,270	872	14,800	4,200
1913	664	NA	929	NA	0	NA	NA	1,590	1,010	16,600	3,900
1914	427	NA	352	NA	0	NA	NA	779	1,020	16,600	3,500
1915	1,010	NA	838	NA	0	NA	NA	1,840	4,080	65,700	5,200
1916	2,560	NA	1,950	279	0	NA	NA	4,230	4,730	70,600	10,000
1917	2,650	NA	2,290	1,130	0	NA	NA	3,820	2,560	32,600	12,300
1918	2,180	NA	5,550	598	0	NA	NA	7,140	3,230	34,900	15,200
1919	141	NA	4,710	18.6	0	NA	NA	4,830	2,510	23,600	7,000
1920	93.2	NA	1,910	2.27	0	NA	NA	2,000	1,090	8,890	5,500
1921	0	NA	1,020	0	0	NA	NA	1,020	1,200	10,900	2,300
1922	0	NA	1,320	0	0	NA	NA	1,320	1,300	12,600	3,000
1923	104	NA	35.8	1.81	0	NA	NA	138	1,390	13,200	3,300
1924	244	NA	64.3	1.36	0	NA	NA	307	1,180	11,200	2,900
1925	514	NA	768	4.54	0	NA	NA	1,280	1,470	13,700	4,900
1926	596	NA	1,310	10.9	0	NA	NA	1,890	1,540	14,200	5,800
1927	503	NA	997	7.26	0	NA	NA	1,490	1,440	13,500	4,400
1928	522	NA	1,350	5.90	0	NA	NA	1,860	1,450	13,800	5,500
1929	358	NA	2,920	37.2	0	NA	NA	3,240	1,830	17,400	7,500
1930	303	NA	1,810	10.9	0	NA	NA	2,110	1,680	16,500	7,900
1931	606	NA	85.9	384	0	NA	NA	308	1,530	16,400	6,400
1932	171	NA	48.2	51.3	0	NA	NA	168	1,280	15,200	3,200
1933	386	NA	172	310	0	NA	NA	249	1,330	16,700	5,900
1934	885	NA	433	255	0	NA	NA	1,060	2,030	24,700	7,800
1935	1,030	NA	404	362	0	NA	NA	1,080	1,860	22,100	10,700
1936	1,130	NA	1,710	47.2	0	NA	NA	2,790	2,060	24,200	11,800
1937	1,510	NA	2,580	NA	0	NA	NA	4,090	2,710	30,700	18,500
1938	1,310	NA	84.3	NA	0	NA	NA	1,400	2,410	27,800	17,800
1939	1,850	NA	692	80	-65.3	1,340	NA	2,400	2,380	27,900	20,100
1940	2,300	NA	2,560	90	-2,390	1,310	NA	2,400	2,870	33,400	20,700

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1941	2,830	NA	5,240	80	-1,220	1,210	NA	6,880	3,260	36,100	23,900
1942	4,030	NA	6,500	220	-642	1,710	NA	9,170	3,350	33,500	24,100
1943	5,160	NA	8,820	480	-5,230	1,320	NA	8,660	3,490	32,900	28,600
1944	4,440	NA	8,340	960	-3,100	883	NA	9,160	3,250	30,100	23,400
1945	2,390	NA	2,170	410	NA	1,970	NA	3,060	3,220	29,300	10,900
1946	2,240	NA	3,120	140	NA	1,810	NA	5,390	2,810	23,400	9,040
1947	1,340	NA	2,730	200	NA	1,680	NA	3,990	3,260	23,800	13,700
1948	1,740	NA	3,420	710	NA	2,650	NA	3,490	3,650	24,700	17,800
1949	1,190	NA	2,870	310	NA	2,290	NA	4,120	3,670	25,100	15,800
1950	2,080	NA	4,510	180	NA	2,420	NA	6,280	3,930	26,500	18,300
1951	2,710	NA	3,650	200	NA	1,940	NA	6,640	8,490	53,000	24,800
1952	3,290	NA	8,120	150	NA	1,370	NA	11,800	8,820	54,100	32,700
1953	4,140	NA	13,100	120	NA	2,130	NA	16,400	8,690	53,000	34,400
1954	5,910	NA	11,400	180	NA	1,940	NA	17,300	8,710	52,800	33,800
1955	7,080	NA	9,910	240	NA	1,830	NA	16,900	8,590	52,400	35,700
1956	6,360	173	10,200	330	NA	2,380	4,410	15,900	8,050	48,200	35,800
1957	2,380	325	6,730	220	NA	4,180	3,690	7,500	3,440	20,000	29,100
1958	1,640	215	3,190	100	NA	2,420	2,500	6,720	2,440	13,800	24,200
1959	1,580	437	3,000	210	NA	1,850	4,420	5,410	2,860	16,000	26,400
1960	3,160	254	1,910	620	NA	4,720	4,130	2,020	3,110	17,100	31,200
1961	3,560	290	1,410	220	NA	4,680	4,100	5,100	2,970	16,200	33,000
1962	3,640	341	2,400	120	723	5,460	5,340	6,150	3,200	17,300	31,300
1963	2,440	304	2,060	150	190	6,090	4,770	4,120	2,950	15,700	27,100
1964	3,990	290	1,750	290	344	4,330	5,010	7,860	2,820	14,800	28,100
1965	3,430	322	2,060	150	420	3,790	6,160	6,700	3,800	19,700	27,000
1966	3,250	411	2,390	160	3,750	3,740	7,360	9,640	4,630	23,300	28,600
1967	3,560	453	934	710	2,900	4,460	6,200	6,570	4,100	20,000	28,500
1968	4,100	567	853	540	1,560	3,770	5,950	7,130	4,950	23,200	31,000
1969	3,590	567	747	3,740	7,370	3,060	7,280	9,390	5,240	23,200	32,500
1970	4,220	680	799	9,540	13,000	4,320	6,960	8,190	5,640	23,700	32,400
1971	3,100	598	543	1,590	4,140	4,440	5,060	6,720	6,520	26,200	35,400
1972	3,200	668	3,740	640	618	4,990	6,030	7,120	5,670	22,100	38,500
1973	3,200	963	6,400	1,120	576	3,710	8,160	9,930	5,990	22,000	37,900
1974	3,550	1,050	7,170	2,410	2,900	4,330	9,320	10,700	10,500	34,800	37,600
1975	2,490	945	4,590	1,620	1,350	4,950	5,870	6,330	11,700	35,400	38,300
1976	2,660	958	4,560	2,030	1,820	3,970	7,620	7,770	14,000	40,100	38,000
1977	2,730	1,390	3,940	1,790	2,210	3,920	7,670	8,400	20,200	54,300	41,100
1978	3,130	1,350	5,380	2,260	2,450	3,750	8,300	10,100	18,100	45,300	46,100
1979	3,010	1,500	6,600	2,600	2,350	3,820	9,270	10,100	18,500	41,600	48,600
1980	2,740	1,920	6,380	2,710	1,700	3,760	9,160	9,940	18,500	36,600	52,000
1981	3,550	1,640	7,450	2,360	958	3,890	9,610	10,300	17,600	31,500	50,300

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1982	1,580	1,920	6,140	2,020	344	4,980	6,350	6,050	14,000	23,700	47,000
1983	1,020	2,080	4,690	1,330	259	4,980	6,520	6,480	10,400	17,000	40,900
1984	1,170	1,880	9,280	2,420	1,370	5,630	10,200	10,200	11,400	17,900	46,200
1985	983	1,620	7,750	3,210	902	5,370	8,100	8,210	9,310	14,100	46,600
1986	817	1,510	5,220	2,140	301	3,340	7,210	7,770	7,070	10,500	43,500
1987	34	1,610	7,980	2,240	708	3,080	7,230	7,950	6,350	9,110	42,500
1988	W	2,260	12,500	2,390	524	4,360	8,300	11,000	7,500	10,300	50,900
1989	W	1,940	11,700	3,400	466	4,510	7,990	10,300	10,600	13,900	51,000
1990	W	1,960	10,000	3,350	0	4,240	8,500	8,440	8,480	10,600	51,900
1991	W	2,150	15,500	3,140	0	4,850	7,980	11,800	9,870	11,800	48,200
1992	W	2,640	6,640	2,220	0	3,190	6,910	7,080	9,320	10,800	42,900
1993	W	2,050	7,510	2,450	0	3,250	7,580	7,120	6,820	7,690	34,300
1994	W	2,070	10,400	3,160	0	2,980	8,110	7,930	9,460	10,400	34,000
1995	0	2,390	12,800	3,460	0	3,220	8,800	10,100	12,400	13,200	38,500
1996	0	2,670	11,800	2,550	0	2,940	8,170	10,900	10,400	10,800	34,700
1997	0	2,930	12,800	2,590	0	2,480	8,800	12,200	9,660	9,810	33,200
1998	0	3,350	13,200	3,650	0	2,980	9,520	12,300	8,300	8,300	37,000
1999	0	4,980	11,100	2,880	0	1,980	8,730	12,900	7,070	6,920	37,700
2000	0	5,210	10,200	2,870	1,830	1,680	9,280	14,400	8,290	7,840	44,000
2001	0	5,390	10,800	5,080	3,190	1,430	9,090	14,500	12,500	11,500	50,800
2002	0	4,380	10,600	3,310	1,320	1,130	9,490	11,900	9,080	8,230	47,000
2003	0	4,130	12,300	5,090	891	1,220	9,600	10,100	8,710	7,720	47,200
2004	0	4,000	10,600	3,770	1,060	1,190	11,200	12,600	11,600	10,000	66,300
2005	0	4,670	11,200	5,940	2,710	1,310	11,100	11,700	29,900	24,900	59,500
2006	0	4,490	12,000	6,440	3,130	1,330	12,400	13,200	37,000	29,900	56,600
2007	NA	4,330	12,900	6,050	1,780	1,380	11,400	13,300	35,900	28,200	53,600
2008	NA	5,510	13,100	5,980	1,520	1,280	12,100	13,800	35,100	26,600	61,900
2009	NA	3,690	10,000	2,770	700	1,290	7,460	11,600	25,700	19,500	61,200
2010	NA	5,680	12,400	4,620	2,060	1,310	10,900	15,500	27,000	20,200	68,500
2011	NA	11,000	13,200	7,130	1,220	1,240	12,200	18,100	46,700	33,900	73,900
2012	NA	9,190	11,700	6,730	1,780	1,360	11,300	15,000	56,700	40,200	75,700

NA Not available. W Withheld to avoid disclosing company proprietary data.

[1]Compiled by C.A. DiFrancesco and K.B. Shedd.

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

Tungsten Worksheet Notes

Data Sources
The sources of data for the tungsten worksheet are the mineral statistics publications of the U.S. Bureau of Mines and the U.S. Geological Survey—Minerals Yearbook (MYB) and its predecessor, Mineral Resources of the United States (MR); Mineral Commodity Summaries (MCS) and its predecessor, Commodity Data Summaries (CDS); Mineral Facts and Problems (MFP); Mineral Commodity Profiles (MCP); Mineral Industry Surveys (MIS); and Metal Prices in the United States through 1998 (MP98). The years of publication and corresponding years of data coverage are listed in the References section below.

Primary Production
Primary U.S. tungsten production data represent production of tungsten concentrates for 1901–09 and shipments of tungsten concentrates produced from freshly mined, imported, or stockpiled ores for 1910 to the most recent year. Data are from the MR and MYB for 1901 to the most recent year. Data are not available for 1900 and 2007 to the most recent year, and are withheld for 1988–94 because they were proprietary.

Secondary Production
U.S. scrap consumption was used to estimate secondary tungsten production for 1956–2007. Secondary production for 2008 to the most recent year was calculated from scrap consumption, net imports or net exports, and changes in industry stock levels. Data are from the MYB for 1956–67, the MCP and MFP for 1968–83, the MIS for 1984–92, and the MCS for 1996 to the most recent year. Data for 1993–95 are previously unpublished revisions. Data are not available for 1900–55.

Imports
Import data are derived from the reported or estimated tungsten content of various types of imported tungsten materials including ores and concentrates, ammonium tungstates, ferrotungsten and ferrosilicon tungsten, tungsten and tungsten alloy powders, tungsten carbide powder, unwrought tungsten, tungsten wire, wrought tungsten other than wire, other tungsten compounds, and waste and scrap. Data for 1910–53 and 1957–58 do not include waste and scrap. Data for 1910–53 are from the MR and MYB; data for 1954–77 are estimates based on gross weight and tungsten content statistics in the MYB; data for 1978 to the most recent year are from the MYB. Data are not available for 1900–09. Imports of concentrates for 1950 are general imports instead of imports for consumption, because the latter included large withdrawals of concentrates from bonded warehouses by the U.S. Government in that year.

Exports
Export data are derived from the reported or estimated tungsten content of various types of exported tungsten materials including ores and concentrates, ammonium tungstates, ferrotungsten and ferrosilicon tungsten, tungsten and tungsten alloy powders, tungsten carbide powder, unwrought tungsten, other tungsten metal, tungsten wire, wrought tungsten other than wire, other tungsten compounds, and waste and scrap. Data for 1973–82 do not include waste and scrap. Data for 1910, 1916–36, and 1939–72 are from the MR and MYB; data for 1973–82 are from the 1985 MFP; and for 1983 to the most recent year are from the MYB. Data are not available for 1900–09, 1911–15, and 1937–38. The zero in the cell for 1922 indicates that exports were less than ½ ton that year.

Government Shipments
Government shipment data are net shipments of tungsten ores and concentrates, ferrotungsten, tungsten metal powder, and tungsten carbide powder from U.S. Government stockpiles. The U.S. Government began stockpiling tungsten materials in 1939. Negative numbers indicate net U.S. Government acquisitions. Data for 1939–44 were derived from yearend inventories from the MYB. Data for 1945–61were not available, although it was a period of significant additions to U.S. Government stockpiles. From 1946 to yearend 1967, more than 167,000 metric tons (t) of tungsten was added to the stockpile. Data for 1962–67 are sales; data for 1968 to the most recent year are shipments. Data for 1962–67 are from the MYB; data for 1968–72 are from the MCP; data for 1973–76 are from the MYB; datum for 1977 was derived from total yearend inventories in the MYB; data for 1978 to the most recent year are from the MYB. Shipments were negligible for 1999.

Stocks
Data represent a summation of available data on stocks held by producers, consumers, and/or dealers of the following tungsten materials: ores and concentrates for 1939 to the most recent year, ammonium paratungstate for 1973 to the most recent year, and primary products for 1956 to the most recent year. Data for 1958–59, 1997, and 1999 to the most recent year do not include certain materials, which were withheld in order to avoid disclosing proprietary data. Data are from the MYB for 1939 to the most recent year. Data were not available for 1900–38.

Reported Consumption
Data represent reported tungsten consumption in the United States to make end-use products such as cemented carbides; steel and other alloys; wire, rod, and sheet; and chemical applications. Data are based on company reports to the U.S. Bureau of Mines and the U.S. Geological Survey and may include estimates for nonrespondents. Tungsten materials include metal powder, carbide powder, natural and synthetic scheelite, ferrotungsten and other master alloys, scrap, and chemicals. Data are not available prior to 1956. Data are from the MYB.

Apparent Consumption
U.S. apparent consumption of all tungsten materials was calculated for 1901–67 using the following equation:

APPARENT CONSUMPTION = PRIMARY (MINE) PRODUCTION + SECONDARY PRODUCTION + IMPORTS – EXPORTS ± STOCK CHANGES + GOVERNMENT SHIPMENTS.

Where possible, scrap was excluded from imports and exports. If data for a particular category were unavailable, the data were presumed to be zero in making the above calculation. Datum was not available for 1900. Apparent consumption for 1939 was calculated without beginning or ending stocks. Apparent consumption calculations for 1939–60 do not take into account significant amounts of domestically produced or imported tungsten concentrates that were added to government stockpiles. Apparent consumption for 1968 was from the MCP. Apparent consumption for 1969–73 was from the 1980 MFP. Apparent consumption for 1974–76 was from the CDS; apparent consumption for 1978, 1980–87, 1990–93, 1996–2005, and 2007 to the most recent year was from the MCS. Apparent consumption for 1977, 1979, 1988–89, 1994–95, and 2006 are previously unpublished revisions.

Unit Value ($/t)
Unit value is defined as the value in U.S. dollars of 1 t of tungsten apparent consumption. Unit value (in actual U.S. dollars) for 1900–86 is estimated from the annual average sales price of tungsten concentrates produced in the United States; unit value for 1987–88 is estimated from the annual average spot price quotations for tungsten concentrates; unit value for 1989 to the most recent year is estimated from the annual average U.S. free market price of ammonium paratungstate. Annual average price data for 1900–88 are from the MR and MYB, data for 1989–98 are from the MP98, and data for 1999 to the most recent year are from the MYB. Data were interpolated to two significant figures by linear regression for 1921–22.

Unit Value (98$/t)
The Consumer Price Index conversion factor, with 1998 as the base year, is used to adjust unit value in current U.S. dollars to the unit value in constant 1998 U.S. dollars. Data were estimated to two significant figures for 1921–22.

World Production
World production data are tungsten content of concentrate. Data for 1905–2001 were from the MYB and MR; datum for 2002 is a previously unpublished revision; data for 2003 to the most recent year are from the MYB. Data were not available for 1900–04.

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