

GERMANIUM STATISTICS¹

U.S. GEOLOGICAL SURVEY

[All values are in metric tons (t) germanium content unless otherwise noted]

Last modification: October 17, 2012

Year	Production	Imports	Exports	Stocks	Apparent consumption	Unit value (\$/t)	Unit value (98\$/t)	World production
1945	NA	NA	NA	NA	NA	441,000	3,990,000	NA
1946	NA	NA	NA	NA	NA	397,000	3,310,000	NA
1947	NA	NA	NA	NA	NA	397,000	2,900,000	NA
1948	NA	NA	NA	NA	NA	507,000	3,430,000	NA
1949	NA	NA	NA	NA	NA	727,000	4,970,000	NA
1950	NA	NA	NA	NA	NA	397,000	2,690,000	NA
1951	NA	0.145	NA	NA	NA	397,000	2,490,000	NA
1952	NA	0.092	NA	NA	NA	484,000	2,970,000	NA
1953	NA	1.00	NA	NA	NA	720,000	4,390,000	NA
1954	NA	1.65	NA	NA	NA	650,000	3,940,000	NA
1955	NA	1.92	NA	NA	NA	650,000	3,960,000	NA
1956	11	4.54	NA	NA	16	535,000	3,210,000	NA
1957	20	NA	NA	NA	32	445,000	2,580,000	40.8
1958	11	NA	NA	NA	20	445,000	2,510,000	40.8
1959	20	NA	NA	NA	20	350,000	1,960,000	45.3
1960	25	23.7	NA	NA	45	300,000	1,650,000	45.3
1961	18	13.9	NA	NA	34	300,000	1,630,000	40.8
1962	17	12.6	NA	NA	27	300,000	1,620,000	66.7
1963	9.1	2.40	NA	NA	23	270,000	1,440,000	70.3
1964	6.8	0.953	NA	NA	27	270,000	1,420,000	35.4
1965	14	3.37	NA	NA	41	270,000	1,400,000	30.8
1966	14	1.37	NA	NA	41	175,000	879,000	30.8
1967	14	1.53	NA	NA	23	175,000	854,000	30.8
1968	10	1.86	NA	NA	23	175,000	820,000	30.8
1969	14	3.56	NA	NA	20	185,000	823,000	85.2
1970	18	8.87	NA	NA	18	280,000	1,180,000	84.4
1971	16	3.04	NA	NA	18	293,000	1,180,000	68.0
1972	15	2.68	NA	NA	18	293,000	1,140,000	72.6
1973	17	6.67	NA	NA	20	293,000	1,070,000	74.8
1974	13	6.40	NA	NA	20	293,000	969,000	76.2
1975	14	7.68	NA	NA	20	293,000	888,000	125
1976	16	3.47	NA	NA	21	293,000	839,000	79.4
1977	16	2.68	NA	NA	22	314,000	845,000	89.8
1978	19	2.66	NA	NA	23	319,000	797,000	99.0
1979	23	4.03	NA	NA	24	398,000	894,000	109
1980	27	3.33	NA	NA	32	653,000	1,290,000	116
1981	28	22.4	NA	NA	38	911,000	1,630,000	125
1982	26	12.5	NA	NA	42	1,060,000	1,790,000	124
1983	20	11.6	NA	NA	35	1,060,000	1,730,000	85.0
1984	20	18.1	NA	NA	35	1,060,000	1,660,000	75.0
1985	22	11.0	NA	0	38	1,060,000	1,610,000	80.0
1986	22	8.00	NA	0	38	1,060,000	1,580,000	80.0
1987	25	13.0	NA	0	40	1,060,000	1,520,000	82.0
1988	21	33.0	NA	11.7	40	1,060,000	1,460,000	84.0
1989	20	40.1	NA	38.3	36	1,060,000	1,390,000	82.0
1990	18	49.8	NA	58.3	34	1,060,000	1,320,000	76.0
1991	15	26.8	NA	68.9	33	1,060,000	1,270,000	80.0
1992	13	13.2	NA	68.9	30	1,060,000	1,230,000	65.0
1993	10	15.5	NA	NA	29	1,060,000	1,200,000	50.0
1994	10	14.7	NA	68.2	25	1,060,000	1,170,000	50.0
1995	10	16.2	NA	68.2	27	1,380,000	1,470,000	45.0

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Year	Production	Imports	Exports	Stocks	Apparent consumption	Unit value (\$/t)	Unit value (98\$/t)	World production
1996	18	27.5	NA	68.2	25	2,000,000	2,080,000	53.0
1997	20	23.1	NA	61.7	28	1,480,000	1,500,000	63.0
1998	22	14.6	NA	55.2	28	1,700,000	1,700,000	56.0
1999	20	12.4	NA	51.4	28	1,400,000	1,370,000	58.0
2000	23	8.21	NA	48.5	28	1,250,000	1,180,000	70.0
2001	20.0	15.2	31.4	43	28	890,000	819,000	70
2002	15.0	19.9	20.1	42	28	620,000	562,000	50
2003	4.7	18.6	6.2	40	20	380,000	337,000	44
2004	4.4	23.8	13.8	33	25	600,000	518,000	87
2005	4.5	23.5	10.1	29	27	660,000	551,000	90
2006	4.6	50.0	12.4	24	55	950,000	768,000	90
2007	4.6	52.4	11.7	17	60	1,240,000	975,000	100
2008	4.6	67.6	17.9	16	54	1,490,000	1,130,000	140
2009	4.6	60.2	21.2	16	44	940,000	714,000	120
2010	3.0	44.7	8.0	16	40	1,200,000	897,000	118
2011	3.0	38.5	5.9	16	36	1,450,000	1,050,000	118

NA Not available.

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

Germanium Worksheet Notes

Data Sources

Sources of data for the germanium worksheet are the mineral statistics publications of the U.S. Bureau of Mines and the U.S. Geological Survey—Minerals Yearbook (MYB); Mineral Commodity Summaries (MCS) and its predecessor, Commodity Data Summaries (CDS); 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.

Production

Production data for 1956–73 and 1978 to the most recent year were from the CDS and the MCS. For 1974–77, production data were from the MYB. Production data were reported in two significant figures. Production data for 1956 to the most recent year represent the estimated germanium content of germanium materials that were produced annually from domestic refineries.

Imports

Import data for 1951 to the most recent year were from the MYB. Imports data represent the germanium content of germanium materials that were imported into the United States for consumption purposes. Import data were not available for 1957–59.

Exports

Export data are not available for 1945 to the most recent year.

Stocks

Stock data for 1988 to the most recent year were from the MYB. Stocks data represent the total quantity of germanium metal that was held in the National Defense Stockpile at yearend. No data were available for changes in producer, consumer, or dealer stocks.

Apparent Consumption

Apparent consumption data for 1957 to the most recent year were from the CDS and MCS, in which the apparent consumption is noted to be an estimate. The apparent consumption estimate is only reported in two significant figures. For 1956, apparent consumption was estimated with the sum of production and imports. Germanium was produced in the United States as a byproduct of zinc smelting since 1942. It was used in glass for its high index of refraction and in radar and television electronics as a component of diodes. In 1948, when Bell Laboratories developed the transistor, consumption increased significantly. Several hundred pounds were reported as produced and consumed in 1946 and 1947. Production exceeded 1,000 pounds in 1948, and increases in production and consumption continued through 1955. Since production was not specified, apparent consumption is not available for 1945–55.

Unit Value (\$/t)

Unit value is the value of 1 metric ton (t) of germanium metal apparent consumption. The price series for annual average germanium price in MP98 were used to estimate apparent germanium unit value for 1945–98. For 1999 to the most recent year, the zone-refined prices from the MCS were used.

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.

World Production

World production data for 1957 to the most recent year represent the total quantity of germanium metal that was produced annually from refineries throughout the world. Data are from the MYB.

References

- U.S. Bureau of Mines, 1933–96, Minerals Yearbook, 1932–94.
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- U.S. Bureau of Mines, 1978–95, Mineral Commodity Summaries, 1978–95.
- U.S. Geological Survey, 1995–present, Minerals Yearbook, v. I. (Available via <http://minerals.usgs.gov/minerals/>.)
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- U.S. Geological Survey, 1999, Metal Prices in the United States through 1998.
- U.S. Geological Survey and U.S. Bureau of Mines, 1996, Mineral Commodity Summaries, 1996.

Recommended Citation Format:

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, accessed [date], at <http://pubs.usgs.gov/ds/2005/140/>.

For more information, please contact:

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