

PHOSPHATE ROCK STATISTICS¹

U.S. GEOLOGICAL SURVEY

[All values are in metric tons (t) gross weight unless otherwise noted]

Last modification: October 19, 2010

| Year | Production | Sold or used | Imports | Exports | Apparent consumption | Unit value (\$/t) | Unit value (98\$/t) | World production |
|-------------|-------------------|---------------------|----------------|----------------|-----------------------------|--------------------------|----------------------------|-------------------------|
| 1900 | 1,520,000 | 1,520,000 | NA | 630,000 | 885,000 | 3.54 | 69.00 | 3,150,000 |
| 1901 | 1,510,000 | 1,510,000 | NA | 741,000 | 766,000 | 3.52 | 69.00 | 3,000,000 |
| 1902 | 1,510,000 | 1,510,000 | NA | 815,000 | 699,000 | 3.10 | 58.00 | 3,120,000 |
| 1903 | 1,610,000 | 1,610,000 | NA | 798,000 | 809,000 | 3.31 | 60.00 | 3,450,000 |
| 1904 | 1,910,000 | 1,900,000 | NA | 856,000 | 1,050,000 | 3.45 | 63.00 | 3,870,000 |
| 1905 | 1,980,000 | 1,980,000 | NA | 950,000 | 1,030,000 | 3.42 | 62.00 | 3,850,000 |
| 1906 | 2,110,000 | 2,110,000 | NA | 919,000 | 1,200,000 | 4.06 | 74.00 | 4,190,000 |
| 1907 | 2,300,000 | 2,300,000 | NA | 1,030,000 | 1,270,000 | 4.63 | 81.00 | 4,720,000 |
| 1908 | 2,420,000 | 2,420,000 | 14,500 | 1,210,000 | 1,230,000 | 4.72 | 86.00 | 5,380,000 |
| 1909 | 2,380,000 | 2,380,000 | 10,100 | 1,040,000 | 1,350,000 | 2.41 | 44.00 | 4,950,000 |
| 1910 | 2,700,000 | 2,700,000 | 22,100 | 1,100,000 | 1,620,000 | 1.80 | 32.00 | 5,430,000 |
| 1911 | 3,100,000 | 3,100,000 | 16,400 | 1,270,000 | 1,850,000 | 1.52 | 27.00 | 5,940,000 |
| 1912 | 3,020,000 | 3,020,000 | 29,300 | 1,230,000 | 1,820,000 | 1.60 | 27.00 | 6,730,000 |
| 1913 | 3,160,000 | 3,160,000 | 17,400 | 1,390,000 | 1,790,000 | 1.08 | 17.80 | 7,230,000 |
| 1914 | 2,780,000 | 2,780,000 | 15,300 | 980,000 | 1,810,000 | 1.64 | 26.80 | 5,420,000 |
| 1915 | 1,970,000 | 1,870,000 | 5,400 | 257,000 | 1,610,000 | 2.39 | 38.50 | 4,120,000 |
| 1916 | 2,200,000 | 2,010,000 | 4,700 | 248,000 | 1,770,000 | 2.70 | 40.40 | 4,830,000 |
| 1917 | 2,900,000 | 2,630,000 | 93 | 169,000 | 2,460,000 | 2.82 | 35.90 | 4,710,000 |
| 1918 | 2,320,000 | 2,530,000 | 0 | 146,000 | 2,380,000 | 3.06 | 33.00 | 4,190,000 |
| 1919 | 1,880,000 | 2,310,000 | 35 | 385,000 | 1,920,000 | 4.17 | 39.30 | 4,150,000 |
| 1920 | 4,040,000 | 4,170,000 | 64 | 1,090,000 | 3,080,000 | 4.71 | 38.30 | 6,870,000 |
| 1921 | 2,470,000 | 2,100,000 | 3,600 | 745,000 | 1,360,000 | 3.68 | 33.50 | 5,430,000 |
| 1922 | 2,370,000 | 2,460,000 | 6,000 | 731,000 | 1,730,000 | 2.73 | 26.50 | 5,940,000 |
| 1923 | 2,990,000 | 3,050,000 | 6,800 | 841,000 | 2,220,000 | 2.65 | 25.20 | 7,120,000 |
| 1924 | 2,890,000 | 2,910,000 | 16,400 | 832,000 | 2,100,000 | 2.53 | 24.10 | 7,780,000 |
| 1925 | 3,310,000 | 3,540,000 | 2,800 | 884,000 | 2,660,000 | 2.22 | 20.70 | 8,900,000 |
| 1926 | 3,650,000 | 3,260,000 | 17,700 | 761,000 | 2,520,000 | 2.64 | 24.20 | 9,380,000 |
| 1927 | 3,070,000 | 3,220,000 | 28,600 | 933,000 | 2,320,000 | 2.94 | 27.50 | 9,990,000 |
| 1928 | 3,580,000 | 3,560,000 | 46,500 | 913,000 | 2,690,000 | 3.13 | 29.80 | 10,100,000 |
| 1929 | 3,880,000 | 3,820,000 | 45,600 | 1,160,000 | 2,710,000 | 3.04 | 29.00 | 10,400,000 |
| 1930 | 4,020,000 | 3,990,000 | 33,200 | 1,250,000 | 2,780,000 | 3.15 | 30.90 | 11,800,000 |
| 1931 | 2,710,000 | 2,580,000 | 13,700 | 967,000 | 1,620,000 | 3.19 | 34.20 | 7,860,000 |
| 1932 | 1,730,000 | 1,730,000 | 13,200 | 623,000 | 1,120,000 | 2.70 | 32.10 | 7,110,000 |
| 1933 | 2,400,000 | 2,530,000 | 7,800 | 842,000 | 1,700,000 | 2.60 | 32.60 | 8,900,000 |
| 1934 | 2,950,000 | 2,880,000 | 0 | 1,010,000 | 1,870,000 | 2.69 | 32.70 | 9,510,000 |
| 1935 | 3,210,000 | 3,090,000 | 3,800 | 1,120,000 | 1,970,000 | 2.64 | 31.40 | 10,500,000 |
| 1936 | 3,520,000 | 3,410,000 | 3,100 | 1,230,000 | 2,180,000 | 2.13 | 25.10 | 11,300,000 |
| 1937 | 4,330,000 | 4,020,000 | 13,600 | 1,070,000 | 2,960,000 | 2.45 | 27.70 | 12,900,000 |
| 1938 | 3,920,000 | 3,800,000 | 7,100 | 1,160,000 | 2,650,000 | 2.42 | 28.00 | 12,900,000 |
| 1939 | 4,050,000 | 3,820,000 | 3,600 | 964,000 | 2,860,000 | 2.48 | 29.10 | 12,800,000 |
| 1940 | 4,130,000 | 4,070,000 | 3,000 | 764,000 | 3,310,000 | 2.57 | 29.90 | 10,300,000 |
| 1941 | 5,000,000 | 4,760,000 | 4,400 | 1,040,000 | 3,710,000 | 2.65 | 29.40 | 10,800,000 |
| 1942 | 4,900,000 | 4,720,000 | 3,800 | 537,000 | 4,190,000 | 3.17 | 31.70 | 8,800,000 |
| 1943 | 5,460,000 | 5,210,000 | 47,300 | 364,000 | 4,890,000 | 3.36 | 31.70 | 9,250,000 |
| 1944 | 5,280,000 | 5,460,000 | 125,400 | 445,000 | 5,140,000 | 3.58 | 33.10 | 9,330,000 |
| 1945 | 5,490,000 | 5,900,000 | 143,900 | 499,000 | 5,550,000 | 3.85 | 35.00 | 10,900,000 |
| 1946 | 7,280,000 | 6,970,000 | 60,700 | 710,000 | 6,320,000 | 4.30 | 35.80 | 15,300,000 |
| 1947 | 9,260,000 | 9,170,000 | 44,200 | 1,670,000 | 7,540,000 | 5.04 | 36.80 | 18,300,000 |
| 1948 | 9,540,000 | 8,810,000 | 48,900 | 1,030,000 | 7,820,000 | 5.75 | 38.90 | 19,400,000 |
| 1949 | 9,020,000 | 9,130,000 | 65,900 | 1,340,000 | 7,860,000 | 5.63 | 38.60 | 19,700,000 |
| 1950 | 10,900,000 | 10,400,000 | 88,600 | 1,790,000 | 8,720,000 | 5.71 | 38.60 | 23,400,000 |

PHOSPHATE ROCK STATISTICS¹

U.S. GEOLOGICAL SURVEY

[All values are in metric tons (t) gross weight unless otherwise noted]

Last modification: October 19, 2010

| Year | Production | Sold or used | Imports | Exports | Apparent consumption | Unit value (\$/t) | Unit value (98\$/t) | World production |
|-------------|-------------------|---------------------|----------------|----------------|-----------------------------|--------------------------|----------------------------|-------------------------|
| 1951 | 12,200,000 | 11,300,000 | 94,900 | 1,700,000 | 9,660,000 | 5.87 | 36.70 | 24,600,000 |
| 1952 | 12,300,000 | 11,500,000 | 112,000 | 1,420,000 | 10,200,000 | 6.04 | 37.10 | 26,400,000 |
| 1953 | 12,700,000 | 12,700,000 | 103,000 | 2,090,000 | 10,700,000 | 6.14 | 37.40 | 27,200,000 |
| 1954 | 14,000,000 | 13,300,000 | 124,000 | 2,320,000 | 11,100,000 | 6.29 | 38.10 | 30,500,000 |
| 1955 | 12,500,000 | 13,400,000 | 119,000 | 2,220,000 | 11,300,000 | 6.23 | 38.00 | 30,500,000 |
| 1956 | 16,000,000 | 14,300,000 | 112,000 | 2,730,000 | 11,700,000 | 6.50 | 38.90 | 34,200,000 |
| 1957 | 14,200,000 | 14,800,000 | 112,000 | 3,060,000 | 11,900,000 | 6.29 | 36.60 | 33,200,000 |
| 1958 | 15,100,000 | 15,000,000 | 110,000 | 2,740,000 | 12,400,000 | 6.29 | 35.50 | 33,700,000 |
| 1959 | 16,100,000 | 16,300,000 | 142,000 | 3,100,000 | 13,400,000 | 6.18 | 34.50 | 38,400,000 |
| 1960 | 17,800,000 | 17,500,000 | 131,000 | 4,060,000 | 13,600,000 | 6.82 | 37.50 | 41,800,000 |
| 1961 | 18,900,000 | 18,100,000 | 136,000 | 3,980,000 | 14,300,000 | 7.16 | 39.10 | 45,500,000 |
| 1962 | 19,700,000 | 19,400,000 | 136,000 | 4,000,000 | 15,500,000 | 7.11 | 38.40 | 63,300,000 |
| 1963 | 19,700,000 | 20,200,000 | 163,000 | 4,620,000 | 15,700,000 | 7.15 | 38.00 | 54,600,000 |
| 1964 | 23,300,000 | 22,400,000 | 159,000 | 5,780,000 | 16,800,000 | 7.16 | 37.70 | 63,700,000 |
| 1965 | 26,900,000 | 26,300,000 | 134,000 | 6,640,000 | 19,800,000 | 7.08 | 36.70 | 71,400,000 |
| 1966 | 35,400,000 | 33,100,000 | 161,000 | 8,390,000 | 24,800,000 | 7.39 | 37.10 | 84,500,000 |
| 1967 | 36,100,000 | 34,300,000 | 126,000 | 9,140,000 | 25,300,000 | 7.31 | 35.70 | 87,300,000 |
| 1968 | 37,400,000 | 33,900,000 | 105,000 | 11,000,000 | 23,000,000 | 6.76 | 31.70 | 94,100,000 |
| 1969 | 34,200,000 | 33,300,000 | 127,000 | 10,300,000 | 23,200,000 | 6.29 | 27.90 | 92,100,000 |
| 1970 | 35,100,000 | 35,200,000 | 123,000 | 10,600,000 | 24,600,000 | 5.99 | 25.20 | 95,100,000 |
| 1971 | 35,200,000 | 36,600,000 | 76,200 | 11,400,000 | 25,200,000 | 5.94 | 23.90 | 94,000,000 |
| 1972 | 37,000,000 | 39,700,000 | 49,900 | 13,000,000 | 26,800,000 | 5.56 | 21.70 | 101,000,000 |
| 1973 | 38,200,000 | 40,900,000 | 59,000 | 12,600,000 | 28,300,000 | 6.11 | 22.40 | 111,000,000 |
| 1974 | 41,400,000 | 43,900,000 | 165,000 | 12,600,000 | 31,500,000 | 10.90 | 36.10 | 123,000,000 |
| 1975 | 44,300,000 | 42,100,000 | 33,000 | 11,100,000 | 31,000,000 | 20.20 | 61.10 | 109,000,000 |
| 1976 | 44,700,000 | 40,500,000 | 42,000 | 9,430,000 | 31,100,000 | 18.80 | 54.00 | 109,000,000 |
| 1977 | 47,300,000 | 47,400,000 | 158,000 | 13,200,000 | 34,400,000 | 15.90 | 42.80 | 121,000,000 |
| 1978 | 50,000,000 | 48,800,000 | 908,000 | 12,900,000 | 36,800,000 | 17.10 | 42.70 | 127,000,000 |
| 1979 | 51,600,000 | 53,100,000 | 886,000 | 14,400,000 | 39,600,000 | 18.40 | 41.30 | 134,000,000 |
| 1980 | 54,400,000 | 54,600,000 | 486,000 | 14,300,000 | 40,800,000 | 20.20 | 40.00 | 147,000,000 |
| 1981 | 53,600,000 | 45,500,000 | 13,000 | 10,400,000 | 35,100,000 | 23.90 | 42.80 | 145,000,000 |
| 1982 | 37,400,000 | 38,600,000 | 31,000 | 9,840,000 | 28,800,000 | 24.00 | 40.60 | 129,000,000 |
| 1983 | 42,600,000 | 46,800,000 | 9,000 | 12,000,000 | 34,800,000 | 22.90 | 37.40 | 143,000,000 |
| 1984 | 49,200,000 | 53,300,000 | 9,000 | 11,500,000 | 41,800,000 | 22.80 | 35.80 | 154,000,000 |
| 1985 | 50,800,000 | 46,600,000 | 34,000 | 9,140,000 | 37,500,000 | 23.20 | 35.20 | 151,000,000 |
| 1986 | 38,700,000 | 41,800,000 | 528,000 | 7,850,000 | 34,500,000 | 21.60 | 32.10 | 141,000,000 |
| 1987 | 41,000,000 | 43,700,000 | 464,000 | 8,450,000 | 35,700,000 | 18.90 | 27.10 | 147,000,000 |
| 1988 | 45,400,000 | 48,400,000 | 676,000 | 8,090,000 | 41,000,000 | 18.70 | 25.80 | 166,000,000 |
| 1989 | 49,800,000 | 49,300,000 | 705,000 | 7,840,000 | 42,100,000 | 20.80 | 27.30 | 163,000,000 |
| 1990 | 46,300,000 | 49,800,000 | 451,000 | 6,240,000 | 44,000,000 | 22.30 | 27.80 | 162,000,000 |
| 1991 | 48,100,000 | 44,700,000 | 552,000 | 5,080,000 | 40,200,000 | 22.30 | 26.70 | 150,000,000 |
| 1992 | 47,000,000 | 45,100,000 | 1,530,000 | 3,720,000 | 42,900,000 | 22.30 | 25.90 | 139,000,000 |
| 1993 | 35,500,000 | 40,100,000 | 534,000 | 3,200,000 | 38,300,000 | 21.30 | 24.00 | 119,000,000 |
| 1994 | 41,100,000 | 43,900,000 | 1,800,000 | 2,800,000 | 42,900,000 | 22.00 | 24.20 | 127,000,000 |
| 1995 | 43,500,000 | 43,700,000 | 1,800,000 | 2,760,000 | 42,700,000 | 21.80 | 23.30 | 130,000,000 |
| 1996 | 45,400,000 | 43,500,000 | 1,800,000 | 1,570,000 | 43,700,000 | 23.40 | 24.30 | 135,000,000 |
| 1997 | 45,900,000 | 42,100,000 | 1,830,000 | 335,000 | 43,600,000 | 24.40 | 24.80 | 143,000,000 |
| 1998 | 44,200,000 | 43,700,000 | 1,760,000 | 378,000 | 45,000,000 | 25.50 | 25.50 | 144,000,000 |
| 1999 | 40,600,000 | 41,600,000 | 2,170,000 | 272,000 | 43,500,000 | 30.60 | 29.90 | 137,000,000 |
| 2000 | 38,600,000 | 37,400,000 | 1,930,000 | 299,000 | 39,000,000 | 25.50 | 24.20 | 132,000,000 |
| 2001 | 31,900,000 | 32,800,000 | 2,500,000 | 9,000 | 35,300,000 | 28.40 | 26.10 | 126,000,000 |

PHOSPHATE ROCK STATISTICS¹**U.S. GEOLOGICAL SURVEY**

[All values are in metric tons (t) gross weight unless otherwise noted]

Last modification: October 19, 2010

| Year | Production | Sold or used | Imports | Exports | Apparent consumption | Unit value (\$/t) | Unit value (98\$/t) | World production |
|-------------|-------------------|---------------------|----------------|----------------|-----------------------------|--------------------------|----------------------------|-------------------------|
| 2002 | 36,100,000 | 34,700,000 | 2,700,000 | 39,000 | 37,400,000 | 28.80 | 26.10 | 136,000,000 |
| 2003 | 35,000,000 | 36,400,000 | 2,400,000 | 64,000 | 38,800,000 | 27.50 | 24.30 | 138,000,000 |
| 2004 | 35,800,000 | 36,500,000 | 2,500,000 | 0 | 39,000,000 | 28.20 | 24.40 | 142,000,000 |
| 2005 | 36,100,000 | 35,200,000 | 2,630,000 | 0 | 37,800,000 | 30.30 | 25.30 | 152,000,000 |
| 2006 | 30,100,000 | 30,200,000 | 2,420,000 | 0 | 32,600,000 | 31.80 | 25.70 | 151,000,000 |
| 2007 | 29,700,000 | 31,100,000 | 2,670,000 | 0 | 33,800,000 | 49.60 | 39.00 | 160,000,000 |
| 2008 | 30,200,000 | 28,900,000 | 2,750,000 | 0 | 31,600,000 | 78.40 | 59.30 | 165,000,000 |
| 2009 | 26,400,000 | 25,500,000 | 2,000,000 | 0 | 27,500,000 | 124.00 | 94.20 | 166,000,000 |

NA Not available.

¹Compiled by D.A. Buckingham (retired) and S.M. Jasinski.

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

Phosphate Rock Worksheet Notes

Data Sources

Sources for the phosphate rock 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). The years of publication and corresponding years of data coverage are listed in the References section below.

Production

Production refers to the beneficiated phosphate rock product of phosphate ore ranging in grade from 26 percent to about 34 percent P₂O₅. This production is commonly referred to as marketable phosphate rock. Production data for 1900–14, 1932, and 1953 is equal to sold or used data. Data are from the MR and the MYB.

Sold or Used

Data are marketable phosphate rock sold or used by producers. These data were called shipments prior to 1931. Data are from the MR and the MYB.

Imports

Prior to 1977, imports of phosphate rock into the United States are classified as crude phosphate rock. For 1977 to the most recent year, data are classified as marketable phosphate rock. Import data for 1918 and 1934 are zero. Import data are not available prior to 1908. Data are from the MR and the MYB.

Exports

Export data are phosphate rock exported from the United States. Data are from the MR and the MYB.

Apparent Consumption

Apparent consumption data were not reported prior to 1918. For those years apparent consumption data were estimated using the following equation:

$$\text{APPARENT CONSUMPTION} = \text{SOLD OR USED PHOSPHATE ROCK} + \text{IMPORTS} - \text{EXPORTS}.$$

Data for 1919 to the most recent year are from the MR and the MYB.

Unit Value (\$/t)

Unit value is defined as the value of 1 metric ton (t) of phosphate rock apparent consumption. Data are estimated using the following equation:

$$\text{UNIT VALUE} = (\text{SOLD OR USED PHOSPHATE ROCK VALUE} + \text{IMPORT VALUE} - \text{EXPORT VALUE}) / (\text{APPARENT CONSUMPTION TONNAGE}).$$

Import and export values are not available prior to 1908. Phosphate rock import and export values were estimated using the unit value of phosphate rock sales.

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 unit value in constant 1998 U.S. dollars.

World Production

Data are defined as world production of marketable phosphate rock. Data are from the MR and the MYB.

References

- U.S. Bureau of Mines, 1927–34, Mineral Resources of the United States, 1924–31.
- U.S. Bureau of Mines, 1934–96, Minerals Yearbook, 1932–94.
- U.S. Geological Survey, 1901–27, Mineral Resources of the United States, 1900–23.
- U.S. Geological Survey, 1995–present, Minerals Yearbook, v. I. (Available via <http://minerals.usgs.gov/minerals/>)

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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