

**PHOSPHATE ROCK STATISTICS**

By David A. Buckingham and Stephen M. Jasinski

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

Last modification: June 14, 2004

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		630,000	885,000	3.54	69.00	3,150,000
1901	1,510,000	1,510,000		741,000	766,000	3.52	69.00	3,000,000
1902	1,510,000	1,510,000		815,000	699,000	3.10	58.00	3,120,000
1903	1,610,000	1,610,000		798,000	809,000	3.31	60.00	3,450,000
1904	1,910,000	1,900,000		856,000	1,050,000	3.45	63.00	3,870,000
1905	1,980,000	1,980,000		950,000	1,030,000	3.42	62.00	3,850,000
1906	2,110,000	2,110,000		919,000	1,200,000	4.06	74.00	4,190,000
1907	2,300,000	2,300,000		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

## PHOSPHATE ROCK STATISTICS

By David A. Buckingham and Stephen M. Jasinski

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

Last modification: June 14, 2004

Year	Production	Sold or used	Imports	Exports	Apparent consumption	Unit value (\$/t)	Unit value (98\$/t)	World production
1950	10,900,000	10,400,000	88,600	1,790,000	8,720,000	5.71	38.60	23,400,000
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	10.93	36.13	123,000,000
1975	44,300,000	42,100,000	33,000	11,100,000	31,000,000	20.16	61.07	109,000,000
1976	44,700,000	40,500,000	42,000	9,430,000	31,100,000	18.84	53.97	109,000,000
1977	47,300,000	47,400,000	158,000	13,200,000	34,400,000	15.90	42.76	121,000,000
1978	50,000,000	48,800,000	908,000	12,900,000	36,800,000	17.07	42.68	127,000,000
1979	51,600,000	53,100,000	886,000	14,400,000	39,600,000	18.40	41.31	134,000,000
1980	54,400,000	54,600,000	486,000	14,300,000	40,800,000	20.22	40.00	147,000,000
1981	53,600,000	45,500,000	13,000	10,400,000	35,100,000	23.89	42.84	145,000,000
1982	37,400,000	38,600,000	31,000	9,840,000	28,800,000	24.03	40.59	129,000,000
1983	42,600,000	46,800,000	9,000	12,000,000	34,800,000	22.85	37.40	143,000,000
1984	49,200,000	53,300,000	9,000	11,500,000	41,800,000	22.84	35.83	154,000,000
1985	50,800,000	46,600,000	34,000	9,140,000	37,500,000	23.23	35.19	151,000,000
1986	38,700,000	41,800,000	528,000	7,850,000	34,500,000	21.57	32.08	141,000,000
1987	41,000,000	43,700,000	464,000	8,450,000	35,700,000	18.87	27.08	147,000,000
1988	45,400,000	48,400,000	676,000	8,090,000	41,000,000	18.70	25.76	166,000,000
1989	49,800,000	49,300,000	705,000	7,840,000	42,100,000	20.76	27.29	163,000,000
1990	46,300,000	49,800,000	451,000	6,240,000	44,000,000	22.29	27.80	162,000,000
1991	48,100,000	44,700,000	552,000	5,080,000	40,200,000	22.28	26.66	150,000,000
1992	47,000,000	45,100,000	1,530,000	3,720,000	42,900,000	22.28	25.89	139,000,000
1993	35,500,000	40,100,000	534,000	3,200,000	38,300,000	21.29	24.02	119,000,000
1994	41,100,000	43,900,000	1,800,000	2,800,000	42,900,000	22.03	24.23	127,000,000
1995	43,500,000	43,700,000	1,800,000	2,760,000	42,700,000	21.75	23.26	130,000,000
1996	45,400,000	43,500,000	1,800,000	1,570,000	43,700,000	23.40	24.31	135,000,000
1997	45,900,000	42,100,000	1,830,000	335,000	43,600,000	24.40	24.78	143,000,000
1998	44,200,000	43,700,000	1,760,000	378,000	45,000,000	25.46	25.46	144,000,000
1999	40,600,000	41,600,000	2,170,000	272,000	43,500,000	30.56	29.90	137,000,000

## PHOSPHATE ROCK STATISTICS

By David A. Buckingham and Stephen M. Jasinski

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

Last modification: June 14, 2004

Year	Production	Sold or used	Imports	Exports	Apparent consumption	Unit value (\$/t)	Unit value (98\$/t)	World production
2000	38,600,000	37,400,000	1,930,000	299,000	39,000,000	25.54	24.18	133,000,000
2001	31,900,000	32,800,000	2,500,000	9,000	35,300,000	28.39	26.13	126,000,000
2002	36,100,000	34,700,000	2,700,000	39,000	37,400,000	28.75	26.05	135,000,000

## 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. Blank cells in the worksheet indicate that data are not available.

### Production

Production refers to the beneficiated phosphate rock product of phosphate ore ranging in grade from 26% to about 34% P<sub>2</sub>O<sub>5</sub>. This production is commonly referred to as marketable phosphate rock. Production data for the years 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. This data was 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 the years 1977–2002, data are classified as marketable phosphate rock. Import data for the years 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 the years 1919–2002 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, 1997–2004, Minerals Yearbook, v. I, 1995–2002.

**For more information, please contact:**

**Stephen M. Jasinski**  
**USGS Phosphate Commodity Specialist**  
**(703) 648-7711**  
**sjasinsk@usgs.gov**

**David A. Buckingham**  
**Minerals and Materials Analysis Section, USGS**  
**(303) 236-8747 x 239**  
**buckingh@usgs.gov**