PHOSPHATE ROCK

(Data in thousand metric tons unless otherwise noted)

Domestic Production and Use: Phosphate rock ore was mined by 6 firms at 15 mines in 4 States, and upgraded to an estimated 37 million tons of marketable product valued at $1 billion, f.o.b. mine. Florida and North Carolina accounted for more than 85% of total domestic output; the remainder was produced in Idaho and Utah. More than 95% of the U.S. phosphate rock ore mined was used to manufacture wet-process phosphoric acid and superphosphoric acid, which were used as intermediate feedstocks in the manufacture of granular and liquid ammonium phosphate fertilizers and animal feed supplements. Approximately 45% of the wet-process phosphoric acid produced was exported in the form of upgraded granular diammonium and monoammonium phosphate (DAP and MAP, respectively) fertilizer, merchant-grade phosphoric acid, and triple superphosphate fertilizer. The balance of the phosphate rock mined was for the manufacture elemental phosphorus, which was used to produce phosphorus compounds for a variety of food-additive and industrial applications.

Salient Statistics—United States:	**2000**	**2001**	**2002**	**2003**	**2004[e]**
Production, marketable	38,600	31,900	36,100	35,000	37,000
Sold or used by producers	37,400	32,800	34,700	36,400	36,300
Imports for consumption	1,930	2,500	2,700	2,400	2,400
Exports	299	9	62	64	40
Consumption[1]	39,000	35,300	37,400	37,400	38,700
Price, average value, dollars per ton, f.o.b. mine[2]	24.14	26.82	27.47	27.01	27.12
Stocks, producer, yearend	8,170	7,510	8,860	7,540	7,600
Employment, mine and beneficiation plant, number[e]	3,500	3,400	3,200	3,200	3,300
Net import reliance[3] as a percentage of apparent consumption	1	9	3	9	6

Recycling: None.

Import Sources (2000-03): Morocco, 99%; and other, 1%.

Tariff: Item	**Number**	**Normal Trade Relations 12-31-04**
Natural calcium phosphates:		
Unground	2510.10.0000	Free.
Ground	2510.20.0000	Free.

Depletion Allowance: 14% (Domestic), 14% (Foreign).

Government Stockpile: None.

Events, Trends, and Issues: Phosphate rock production and consumption in 2004 increased slightly compared with 2003. One mine in Idaho that has been closed since January 2003 was sold to another phosphate producer in Idaho. The two leading phosphate rock producers in the United States merged to create the second largest fertilizer company in the world, in terms of sales, after a Norwegian company. The merger was announced in late January 2004 and it received approval from the Governments of the United States and Canada in August. The new company will control about 50% of U.S. phosphate rock production capacity and 57% of phosphoric acid production capacity. Worldwide, it will have 13% of phosphate rock capacity and 14.4% of phosphoric acid capacity.

In March 2004, the second largest U.S. phosphate rock producer completed its acquisition of a mine in Manatee County, FL. The mine was reopened in late 2004 after being idle for 5 years. It is the only phosphate rock mine in the United State to use dredge mining. The ore will be processed at the company's plant in Bartow, FL.

U.S. production of phosphate rock is not likely to rise above 40 million tons per year because of the gradual depletion of high-quality deposits in Florida and the subsequent decreases in production capacity. Three new mines are in the development and permitting stages in Florida. These mines will be needed in the next decade to replace existing mines after they are depleted.

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PHOSPHATE ROCK

The time needed to complete the permitting process has increased significantly because of environmental concern in southwestern Florida. Some are concerned that new mines in DeSoto and Hardee Counties may adversely affect downstream water resources in the Peace River, which is a major source of drinking water.

Combined phosphate rock reserves in Idaho, North Carolina, and Utah are substantial and production rates for mines in those States can be maintained for more than 50 years.

The International Fertilizer Industry Association has predicted that worldwide demand for phosphate fertilizers will grow at a rate of 2.5% per year during the next 5 years. In the United States, phosphate fertilizer production was expected to remain at about 4 million tons per year of phosphorus pentoxide (P_2O_5) nutrient content. The United States is the leading supplier of processed phosphates in the world, accounting for about 45% of world trade. Since 2000, increased exports of MAP, primarily to South America, have helped to offset lower exports of DAP to markets in Asia. Continued growth in world population and the need for dependable food supplies ensures the importance of phosphate fertilizers.

World Mine Production, Reserves, and Reserve Base:

	Mine production		Reserves[4]	Reserve base[4]
	2003	2004[e]		
United States	35,000	37,000	1,400,000	4,000,000
Australia	2,290	2,300	77,000	1,200,000
Brazil	5,600	5,650	260,000	370,000
Canada	1,000	1,100	25,000	200,000
China	24,500	25,000	6,600,000	13,000,000
Egypt	2,140	2,150	100,000	760,000
India	1,180	1,200	90,000	160,000
Israel	3,210	3,000	180,000	800,000
Jordan	6,760	6,800	900,000	1,700,000
Morocco and Western Sahara	23,000	23,000	5,700,000	21,000,000
Russia	11,000	11,000	200,000	1,000,000
Senegal	1,470	2,000	50,000	160,000
South Africa	2,640	2,600	1,500,000	2,500,000
Syria	2,430	2,400	100,000	800,000
Togo	1,480	1,500	30,000	60,000
Tunisia	7,890	8,000	100,000	600,000
Other countries	5,000	3,500	800,000	2,000,000
World total (rounded)	137,000	138,000	18,000,000	50,000,000

World Resources: Foreign reserve data were derived from information received from Government sources, individual companies, and independent sources. Reserve data for China are based on official government data and include deposits of low-grade ore. Domestic reserve data were based on U.S. Geological Survey and individual company information. Phosphate rock resources occur principally as sedimentary marine phosphorites. The largest deposits are found in northern Africa, China, the Middle East, and the United States. Significant igneous occurrences are found in Brazil, Canada, Russia, and South Africa. Large phosphate resources have been identified on the continental shelves and on seamounts in the Atlantic Ocean and the Pacific Ocean, but cannot be recovered economically with current technology.

Substitutes: There are no substitutes for phosphorus in agriculture.

[e]Estimated.

[1]Defined as sold or used + imports – exports.

[2]Marketable phosphate rock, weighted value, all grades, domestic and export.

[3]Defined as imports – exports + adjustments for Government and industry stock changes.

[4]See Appendix C for definitions.