POTASH

(Data in thousand metric tons of K_2O equivalent, unless otherwise noted)

Domestic Production and Use: In 2003, the production value of marketable potash, f.o.b. mine, was about $260 million; sales decreased relative to 2002. Domestic potash was produced in Michigan, New Mexico, and Utah. Most of the production was from southeastern New Mexico, where two companies operated three mines. New Mexico sylvinite and langbeinite ores were beneficiated by flotation, dissolution-recrystallization, heavy media separation, or combinations of these processes, and provided more than 70% of total U.S. producer sales. In Utah, which has three operations, one company extracted underground sylvinite ore by deep-well solution mining. Solar evaporation recovered the ore from the brine solution, and a flotation process separated the potassium chloride (muriate of potash or MOP) from byproduct sodium chloride. Two companies processed surface and subsurface brines by solar evaporation and flotation to produce MOP, potassium sulfate and byproducts. In Michigan, a company used deep well solution mining and mechanical evaporation for crystallization of MOP and byproduct sodium chloride.

The fertilizer industry used about 85% of U.S. potash sales, and the chemical industry used the remainder. More than 60% of the potash was produced as MOP. Potassium sulfate (sulfate of potash) and potassium magnesium sulfate (sulfate of potash-magnesia), required by certain crops and soils, were also sold.

Salient Statistics—United States:	1999	2000	2001	2002	2003[e]
Production, marketable[1]	1,200	1,300	1,200	1,200	1,100
Imports for consumption	4,470	4,600	4,540	5,300	4,500
Exports	459	367	366	367	370
Consumption, apparent[2]	5,600	5,100	5,600	5,400	5,300
Price, dollars per metric ton of K_2O, average, muriate, f.o.b. mine[3]	145	145	155	155	155
Employment, number:					
Mine	660	610	585	540	520
Mill	725	665	670	645	620
Net import reliance[4, 5] as a percentage of apparent consumption	80	80	80	80	80

Recycling: None.

Import Sources (1999-2002): Canada, 93%; Russia, 3%; Belarus, 2%; Germany, 1%; and other, 1%.

Tariff: Item	Number	Normal Trade Relations 12/31/03
Crude salts, sylvinite, etc.	3104.10.0000	Free.
Potassium chloride	3104.20.0000	Free.
Potassium sulfate	3104.30.0000	Free.
Potassium nitrate	2834.21.0000	Free.
Potassium-sodium nitrate mixtures	3105.90.0010	Free.

Depletion Allowance: 14% (Domestic and foreign).

Government Stockpile: None.

Events, Trends, and Issues: The world's largest potash producers operated below capacity for another year owing to potential oversupply. At the end of 2002, North American producer stocks were slightly less than 25% of annual production (8 million tons) resulting in a slight decline in potash prices. There were extended summer vacations and turnarounds (nonproducing periods of maintenance and upgrades) at the mines and mills in United States, Canada, and the Commonwealth of Independent States, which allowed a slight price rise in the traditionally low priced Asian Pacific Basin. By the end of August 2003, North American potash stocks were down to about 1 million tons. Domestic producers supplied more than 10% of domestic consumption with MOP sales going mostly to the southwestern United States. Through June, exports of domestic potash declined by about 32,000 tons, K_2O, to 200,000 tons. Total MOP exports declined by about 20%, while exports to Latin America fell by about 30% for the first half of the year. Total SOP exports of increased by about 7%, and shipments to the Asia-Pacific area increased by about 10%. Total exports of sulfate of potash-magnesia declined by about 14%. Sulfate of potash-magnesia exports to Latin America were essentially unchanged, while exports to the Asia-Pacific area fell by about 40%.

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POTASH

In June 2003, the parent corporation of a Carlsbad, NM, MOP producer filed for Chapter 11 bankruptcy protection. The horizontally integrated fertilizer firm was having trouble with profitability in nitrogen and phosphorus sales.

Based on data from the first half of 2003, estimated annual 2003 potash consumption in Asian Pacific is expected to decline by about 9% compared to 2002 and to account for approximately 33% of the world total. Potash consumption in Eastern Europe, and Central Asia is forecast to decline by about 15% from that of 2002 and to account for about 7% of the world consumption in 2003. Latin America potash consumption is forecast to increase by about 38% and to account for about 20% of the world total in 2003. North America is forecast to remain unchanged and account for about 20% of the world total consumption. Potash consumption in Western Europe and Central Europe is predicted to decline by about 5% and to account for about 18% of the world consumption in 2003.

World Mine Production, Reserves, and Reserve Base:

	Mine production		Reserves[6]	Reserve base[6]
	2002	2003[e]		
United States	[1]1,200	[1]1,100	90,000	300,000
Belarus	3,800	4,000	750,000	1,000,000
Brazil	352	380	300,000	600,000
Canada	8,200	8,500	4,400,000	9,700,000
Chile	350	420	10,000	50,000
China	450	450	8,000	450,000
Germany	3,450	3,600	710,000	850,000
Israel	1,930	2,050	[7]40,000	[7]580,000
Jordan	1,200	1,200	[7]40,000	[7]580,000
Russia	4,400	4,600	1,800,000	2,200,000
Spain	407	470	20,000	35,000
Ukraine	60	10	25,000	30,000
United Kingdom	540	610	22,000	30,000
Other countries	—	—	50,000	140,000
World total (rounded)	26,300	27,400	8,300,000	17,000,000

World Resources: Estimated domestic potash resources total about 6 billion tons. Most of this lies at depths between 1,800 and 3,100 meters in a 3,110-square-kilometer area of Montana and North Dakota as an extension of the Williston Basin deposits in Saskatchewan, Canada. The Paradox Basin in Utah contains approximately 2 billion tons, mostly at depths of more than 1,200 meters. A large potash resource lies about 2,100 meters under central Michigan. The U.S. reserve figure above includes approximately 62 million tons of reserves in central Michigan. Estimated world resources total about 250 billion tons. The potash deposits in the Russia and Thailand contain large amounts of carnallite; it is not clear if this can be profitably mined in a free market economy.

Substitutes: There are no substitutes for potassium as an essential plant nutrient and an essential nutritional requirement for animals and humans. Manure and glauconite (greensand) are low-potassium-content sources that can be profitably transported only short distances to the crop fields.

[e]Estimated. — Zero.

[1]Rounded to the nearest 0.1 million ton to avoid disclosing company proprietary data.

[2]Rounded to the nearest 0.2 million ton to avoid disclosing company proprietary data.

[3]Average prices based on actual sales; excludes soluble and chemical muriates.

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

[5]Rounded to one significant digit to avoid disclosing company proprietary data.

[6]See Appendix C for definitions.

[7]Total reserves and reserve base in the Dead Sea are arbitrarily divided equally between Israel and Jordan for inclusion in this tabulation.