POTASH

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

Domestic Production and Use: In 2002, the value of production of marketable potash, f.o.b. mine, was about $280 million; sales decreased relative to 2001. Prices declined for New Mexico producers in the first half of the year, but demand increased in the second half due to smaller crop harvests, which led to small price increases. Domestic potash was produced from 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, heavy media separation, dissolution-recrystallization, or combinations of these processes, and provided more than 70% of U.S. producer total sales.

In Utah, which has three potash operations, one company extracted underground potash by solution mining. The potash was recovered from brine solution by solar evaporation, and a standard flotation process separated the resulting potash crystals from sodium chloride crystals. Another Utah company collected subsurface brines from an interior basin for solar evaporation and standard flotation. The third Utah company collected lake brines for solar evaporation to form crystals, followed by flotation, and dissolution-recrystallization. In Michigan, a company used deep well solution mining and mechanical evaporation for crystallization of potash and byproduct sodium chloride.

The fertilizer industry used about 80% of U.S. potash sales, and the chemical industry used the remainder. More than 60% of the potash was produced as potassium chloride (muriate of potash). 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:	**1998**	**1999**	**2000**	**2001**	**2002[e]**
Production, marketable[1]	1,300	1,200	1,300	1,200	1,200
Imports for consumption	4,780	4,470	4,600	4,500	4,700
Exports	477	459	367	410	400
Consumption, apparent[2]	5,600	5,100	5,600	5,400	5,600
Price, dollars per metric ton of K_2O, average, muriate, f.o.b. mine[3]	145	145	155	155	155
Employment, number:					
Mine	730	660	610	585	540
Mill	780	725	665	670	645
Net import reliance[4 5] as a percentage of apparent consumption	80	80	80	80	80

Recycling: None.

Import Sources (1998-2001): Canada, 92%; Russia, 4%; Belarus, 2%; Germany, 1%; and other, 1%.

Tariff: Item	**Number**	**Normal Trade Relations 12/31/02**
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 at reduced capacity for another year owing to potential oversupply. Again, this was accomplished through extended summer vacations and turnarounds at the mines and mills of Canada and the former Soviet Union. The Canadian potash industry operated for the first half of the year at above 70% of capacity, which was a increase from the first half of 2001; one company operated at about 65% of capacity. At the end of 2001, North American producer stocks were slightly less than 2 million tons and potash prices declined slightly. By the end of August 2002, North American potash stocks were down to about 1.6 million tons and potash prices were firming. On the consumption side, southern hemisphere and Asian-Pacific region potash purchases rose in the first half of 2002 and into the third quarter owing to rising world grain prices. Belarus, Germany, and Russia faced nearly unchanged potash demand in their home markets, but were important exporters to Asian-Pacific farmers. Many other potash producers around the world operated at normal capacity. Grain prices and some other crop prices rose on the world market, which increased the demand for potash in grain-producing countries.

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POTASH

Early in 2002, the largest Canadian potash firm reported the completion of startup for a smaller iodine and potassium nitrate producer in Chile. In March of 2002, the sole domestic potassium nitrate producer idled its plant and filed for Chapter 11 bankruptcy protection as a subsidiary of a company that filed for Chapter 11 bankruptcy protection in New York Federal Courts. In August, the sole domestic potassium nitrate producer reportedly was shutting down. A Spanish fertilizer manufacturer announced the permanent shutdown of its 96-year-old sulfate of potash plant in Cartagena at about the same time.

Based on data from the first half of 2002, estimated potash consumption in Africa, the Middle East, and Oceania increased by about 10% and may have accounted for about 5% of world consumption in 2002. On the same basis, potash consumption in Asia may have accounted for about 29% of the world total and declined by about 9%. Potash consumption in Central Europe, Eastern Europe, and Central Asia may have accounted for about 8% of the world total and declined by about 6%. Potash consumption in Latin America may have account for about 17% of the world total and increased by about 8%, while potash consumption in North America may have accounted for about 23% of the world total and declined by less than 4%. Western European potash consumption may have accounted for about 18% of the world total and declined by more than 9%.

World Mine Production, Reserves, and Reserve Base: The production estimate for China has been significantly increased based on new information from that country. Reserves estimates for China also have been revised based on new information.

	Mine production		Reserves[6]	Reserve base[6]
	2001	2002[e]		
United States	[1]1,200	[1]1,200	90,000	300,000
Azerbaijan	[e]5	5	NA	NA
Belarus	3,700	4,000	750,000	1,000,000
Brazil	352	370	300,000	600,000
Canada	8,200	8,760	4,400,000	9,700,000
Chile	390	390	10,000	50,000
China	385	420	8,000	450,000
France	300	150	500	NA
Germany	3,550	3,350	710,000	850,000
Israel	1,774	1,930	[7]40,000	[7]580,000
Jordan	1,178	1,200	[7]40,000	[7]580,000
Russia	4,300	4,340	1,800,000	2,200,000
Spain	525	510	20,000	35,000
Ukraine	25	30	25,000	30,000
United Kingdom	500	500	22,000	30,000
Other countries	—	—	50,000	140,000
World total (may be rounded)	26,400	27,000	8,300,000	17,000,000

World Resources: Estimated domestic potash resources total about 6 billion tons. Most of this lies at depths between 1,830 and 3,050 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 1,220 meters. A large potash resource lies about 2,130 meters under central Michigan. The U.S. reserves figure above contains approximately 62 million tons of reserves in central Michigan. Estimated world resources total about 250 billion tons. The potash deposits in the former Soviet Union and Thailand contain large amounts of carnallite; it is not clear if this can be mined in a free market, competitive 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 are low-potassium-content sources that can be profitably transported only short distances to the crop fields.

[e]Estimated. NA Not available. — Zero.

[1]Rounded to the nearest 0.1 million ton to protect proprietary data.

[2]Rounded to the nearest 0.2 million ton to protect 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 protect 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.