POTASH

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

Domestic Production and Use: In 1998, the value of production of marketable potash, f.o.b. mine was about $320 million, owing to price increases over 1997. Domestic potash production was from Michigan, New Mexico, and Utah. The majority of the production was from southeastern New Mexico, where two companies operated five mines, two of which were connected underground. New Mexico potash ore was beneficiated by flotation, heavy media separation, dissolution-recrystallization, and washing, and provided more than 70% of the U.S. total producer sales.

In Utah, of the three potash operations, one company brought underground potash to the surface by solution mining. The potash was recovered from the brine by solar evaporation to crystals and flotation. Another Utah company collected subsurface brines from an interior basin for solar evaporation to crystals and flotation. The third Utah company collected lake brines for solar evaporation to crystals, flotation, and dissolution-recrystallization. In Michigan, a company used deep well solution mining and recovery by mechanical evaporation. The fertilizer industry used about 90% of the U.S. potash sales and the chemical industry used about 10%. More than 50% 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:	**1994**	**1995**	**1996**	**1997**	**1998[e]**
Production, marketable	1,400	1,480	1,390	1,400	[1]1,300
Imports for consumption	4,800	4,820	4,940	5,490	4,500
Exports	464	409	481	466	450
Consumption, apparent	5,810	5,820	5,890	6,500	[2]5,300
Price, dollars per metric ton of K_2O, average, muriate, f.o.b. mine[3]	131	137	133	140	145
Stocks, producer, yearend	234	312	265	[1]200	[1]300
Employment, number: Mine	845	900	880	850	730
Mill	810	840	810	800	780
Net import reliance[4] as a percent of apparent consumption	76	75	77	[5]80	[5]80

Recycling: None.

Import Sources (1994-97): Canada, 93%; Russia, 4%; Belarus, 1%; and other, 2%.

Tariff: Item	**Number**	**Normal Trade Relations (NTR) 12/31/98**	**Non-NTR[6] 12/31/98**
Crude salts, sylvinite, etc.	3104.10.0000	Free	Free.
Potassium chloride	3104.20.0000	Free	Free.
Potassium sulfate	3104.30.0000	Free	Free.
Potassium nitrate	2834.21.0000	Free	Free.
Potassium-sodium nitrate mixtures	3105.90.0010	Free	Free.

Depletion Allowance: 14% (Domestic), 14% (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. The Canadian potash industry operated for the first half of the year at about 75% of capacity, which was about 98% of "practical capacity," the capacity that is open and operating but not the mines that would take greater than 6 months to reopen. Other countries slightly increased production by returning to normal (shorter) summer maintenance closures. The world continued operating at reduced capacity as Asian economic problems caused a reduction of foodstuff trade, leading to lower grain prices, and grain storage problems in grain-producing and -exporting countries. Consequently, potash sales declined in the second half of 1998 as farmers reduced their purchases for fall potash application. In the United States, the potash price rose as the loss of two regional potash mines in 1997 maintained, or even caused increased prices during the year. The Pacific Basin potash buyers saw their prices rise along with North American consumers. European buyers saw a rather stable price.

French production decreased owing to the approaching end of mine life. Belarus, Canada, Germany, and Russia increased production by returning to normal summer maintenance closures.

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POTASH

The flooded potash mine and the accompanying mill near Sussex, New Brunswick, Canada was renamed and the mill was used for compacting standard (size) grade potash from New Brunswick and Saskatchewan to granular (size) grade. The other New Brunswick potash mine has been reported to have a saturated brine inflow at the rate of approximately 250 gallons per minute.

A consortium lead by the Israeli potash producer won a tender to purchase the remaining potash mines and mills in the Catalan province of Spain as the Spanish Government privatized certain companies.

A subsidiary of a Norwegian firm signed a memorandum of understanding (MOU) with a western Canadian firm concerning a proposed mine in Thailand. The MOU includes an off-take and marketing arrangement, with a to-be-agreed-upon investment into the mine operating company.

World Mine Production, Reserves, and Reserve Base:

	Mine production		Reserves[7]	Reserve base[7]
	1997	1998[e]		
United States	1,400	[1]1,300	100,000	300,000
Azerbaijan[e]	5	5	NA	NA
Belarus	3,250	3,400	800,000	1,000,000
Brazil	243	300	50,000	600,000
Canada	9,301	9,400	4,400,000	9,700,000
Chile	240	200	10,000	50,000
China	115	100	320,000	320,000
France	665	500	3,000	NA
Germany	3,423	3,550	720,000	870,000
Israel	1,488	1,650	[8]40,000	[8]580,000
Jordan	849	840	[8]40,000	[8]580,000
Russia	3,400	3,700	1,800,000	2,200,000
Spain	640	550	20,000	35,000
Ukraine	100	100	25,000	30,000
United Kingdom	565	620	22,000	30,000
Other countries	—	—	50,000	140,000
World total (may be rounded)	25,700	24,900	8,400,000	17,000,000

World Resources: Estimated domestic potash resources total about 6 billion tons. Most of this lies at depths between 6,000 and 10,000 feet in a 1,200-square-mile 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 4,000 feet. An unknown, but large potash resource lies about 7,000 feet under central Michigan. The U.S. reserve 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 contain large amounts of carnallite; it is not clear if this can be mined in a free market, competitive economy. Large resources, about 10 billion tons and mostly carnallite, occur in Thailand.

Substitutes: There are no substitutes for potassium as an essential plant nutrient and essential 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.

[1]Estimated to the nearest 0.1 million tons to protect proprietary data.

[2]Estimated to the nearest 0.2 million tons 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 B.

[7]See Appendix D for definitions.

[8]Total reserves and reserve base in the Dead Sea is equally divided between Israel and Jordan.