

Mineral Industry Surveys

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POTASH IN CROP YEAR 2002

U.S. potash production was virtually unchanged from crop year 2001 at 1.2 million metric tons (Mt) K_2O ,¹ while sales rose slightly to about 1.2 Mt, according to the U.S. Geological Survey (USGS). Apparent consumption was about 2% below the previous crop year.

The USGS developed domestic potash data from voluntary semiannual surveys of U.S. operations. Seven survey requests were sent to potash operations for the first half of the crop year (July through December 2001) and the second half of the crop year (January through June 2002); the same six operations responded for both halves. The remaining operation was estimated for both halves. The sum of the data from the responding operations for the first and second halves was estimated to represent more than 95% of the total production and sales. Producers were: 1) IMC Global Inc., with ores and brines in Michigan, New Mexico, and Utah, for the first report period, and Michigan, New Mexico, and approximately a one-third interest in the brine operation near Ogden, UT, in the second report period; 2) Mississippi Chemical Corp., with two mines in New Mexico; 3) Reilly Industries, Inc., with a near-surface brine reserve and mill near Wendover, UT; 4) the Apollo Management L.P. affiliate Compass Minerals Group which controlled approximately two-thirds interest in Great Salt Lake Minerals Corp. near Ogden, UT in the second report period, and 5) Intrepid Mining, LLC, owner of Moab Salt, LLC, a solution mine and mill, near Moab, UT. Compass Minerals Group purchased the approximately two-thirds interest in late November of this report period (Fertilizer Markets, 2001).

Since approximately 1950, the term potash has been used to indicate potassium chloride (KCl, sylvite), potassium sulfate [K_2SO_4 , or sulfate of potash (SOP), usually a manufactured product], and potassium-magnesium sulfate [$K_2SO_4 \cdot 2MgSO_4$, or langbeinite, or sulfate of potash magnesia (SOPM, or K-Mag)]. Another term for SOP is Lemery salt, and is used in China and Russia; some Spanish-speaking countries refer to SOP as Sal de Lemery. Muriate of potash (MOP) is an acceptable mix of potassium chloride (95% or greater) and sodium chloride, that includes minor amounts of other nontoxic minerals from the

mined ore, for fertilizer use and is neither the crude ore sylvinite nor pure sylvite.

Domestic potash application from U.S. and Canadian producers, compared with the crop year 1998, was relatively low, for both the first half and the second half of the report year according to the Potash & Phosphate Institute data. According to the (old) U.S. Department of Agriculture Farm Production Regions and using P&PI data on North American agricultural MOP-sales-by-states, the Corn Belt potash consumption was essentially unchanged from the crop year 2001, while Appalachia, the Lake States, the Mountain States, the Northeast, the North Plains, the Pacific, and the South Plains increased potash consumption by varying percentages, and Alaska and Hawaii, the Delta, and the Southeast declined. Potash producers' prices were lower in the second half of this report period and producers' sales rose slightly. With relatively lower fixed nitrogen prices owing to lower-than-last-year's natural gas prices and lower potash prices, some farmers reportedly switched in the second report period to planting corn from soybeans in several regions, some farmers switched to alternatives from cotton in some regions, and some farmers who had previously planted rice had returned to rice from soybeans in the south (Lin, 2002).

Potash exports increased by more than 28% compared with those of crop year 2001. Exports of MOP were about 57% of the total; SOP was about 22%; SOPM was about 20%; and potassium nitrate was about 1%. Exports of MOP to all countries rose by about 46%; exports of SOP rose by about 49%, SOPM declined by about 8%, and nitrate of potash declined by about 60%. Exports of the four types of potash to Latin America were about 66% of total exports and increased by about 36%; exports to the Asia-Pacific region were about 26% and increased by about 24% from the crop year 2001. About 8% of exports went to the rest of the world (including Canada) and decreased by about 3%. MOP purchases by Latin American countries were 47% of total domestic exports and about 87% of domestic MOP exports. Latin American countries have purchased about 7% of the total exports as SOP and about 8% of the total exports as SOPM. Asia Pacific countries have purchased about 13% of total exports as SOP and 6% as SOPM.

Imports from all sources decreased from last report period by

¹All tonnages are reported in metric tons, K_2O equivalent, unless otherwise noted.

about 3%. Canada was the largest source of potash imports, totaling about 92% of imports of all types of potash, and 99.8% of it was MOP. Canada produced about one-third of the world's total MOP production for the calendar year 2001. Canada has two SOP manufacturers. Canada has not produced nitrates but Chilean exporters unload nitrates in a Canadian port on the St. Lawrence Seaway, then nitrate importers tranship the nitrates across the U.S. border to northern users by truck or train. Combined Russian and Belarus sources supplied about 5% of all potash imports, solely as MOP. Germany supplied some of each of the four types, summing to about 1% of total imports. The remaining 2% came from several countries.

Potash apparent consumption declined slightly in this report period. At the beginning of this crop year, market prices for grain commodity crops, which consume potash, were down, reflecting worldwide grain commodity oversupply conditions, which had not changed from the previous crop year. Owing to drought in such areas as Australia, Canada, the European Union, and United States in this crop year, there have been regionally

decreased grain harvests, smaller ending grain stocks, and higher grain prices. It is expected that domestic farmers will apply more fertilizers next year, hoping for higher grain prices.

References Cited

- Baker, Allen, Allen, Edward, and Chambers, William, 2002, Feed Outlook: Economic Research Service, U.S. Department of Agriculture, FDS-0902, September, 16, p. 1.
- Fertilizer Markets, 2001, IGL completes salt sale: Fertilizer Markets, British Sulphur North America Inc., Greenbelt, MD, v.12, n. 19, November 30, p. 1.
- Lin, William, 2002, Soybean & cotton plantings to decline in favor of corn in 2002: Economic Research Service, U.S. Department of Agriculture, AGO-291, May, p. 11-14.

GENERAL SOURCE OF INFORMATION

Supply-Disappearance Statistics. Potash & Phosphate Institute, Norcross, GA, monthly, quarterly, fertilizer year, and annual.

TABLE 1
SALIENT POTASH STATISTICS 1/ 2/

(Thousand metric tons and thousand dollars, unless otherwise specified)

	Year ending June 30	
	2001	2002
United States:		
Production:		
Gross weight	2,600	2,500
K2O equivalent	1,200	1,200
Sales by producers:		
Gross weight	2,400	2,600
K2O equivalent	1,100	1,200
Value 3/	\$260,000	\$270,000
Average value:		
Gross weight	dollars per metric ton	
		\$110
K2O equivalent	do.	\$240
		\$110
		\$220
Exports: 4/		
Gross weight	830	960
K2O equivalent	320	410
Imports for consumption: 4/ 5/		
Gross weight	7,700	7,400
K2O equivalent	4,600	4,500
Customs value	\$550,000	\$550,000
Consumption, apparent: 6/		
Gross weight 7/	9,100	9,000
K2O equivalent	5,300	5,200

1/ Includes muriate and sulfate of potash, potassium magnesium sulfate, and parent salts. Excludes other chemical compounds and mixtures containing potassium.

2/ Data are rounded to no more than two significant digits.

3/ F.o.b. mine.

4/ Excludes potassium chemicals and mixed fertilizers.

5/ Includes nitrate of potash and mixed sodium-potassium nitrate.

6/ Measured by sales plus imports minus exports.

7/ Data rounded to within 200,000 tons to avoid disclosing proprietary data.

TABLE 2
PRODUCTION OF CRUDE ORE IN NEW MEXICO

(Thousand metric tons)

Period	Crude salts 1/ (mine production)	
	Gross weight	K2O equivalent
Crop year 2001:		
July - December 2000 2/	6,000	700
January - June 2001 2/	6,000	700
Total	12,000	1,400
Crop year 2002:		
July - December 2001 2/	5,000	700
January - June 2002 2/	6,000	600
Total	11,000	1,300

1/ Sylvinites and langbeinites.

2/ Data rounded to no more than one significant digit.

TABLE 3
PRICES OF U.S. POTASH, BY TYPE AND GRADE 1/ 2/

(Dollars per metric ton of K2O equivalent)

Type and grade	2000		2001		2002
	January - June	July - December	January - June	July - December	January - June
Muriate, 60% K2O minimum:					
Standard	155	160	165	165	155
Granular	165	160	160	150	150

1/ Average prices, f.o.b. mine, based on sales.

2/ Data are rounded to the nearest \$5.

TABLE 4
SALES OF NORTH AMERICAN POTASH TO U.S. CUSTOMERS, BY GRADE 1/

(Thousand metric tons of K₂O equivalent)

Grade	2000		2001		2002	July 2000 to	July 2001 to
	January - June	July - December	January - June	July - December	January - June	June 2001	June 2002
Agricultural:							
Muriate of potash:							
Standard	125	85	113	61	94	198	155
Coarse	1,070	1,020	1,020	1,060	1,030	2,040	2,090
Granular	1,040	652	917	697	976	1,570	1,670
Soluble	234	173	231	175	211	404	386
Total	2,480	1,930	2,280	1,990	2,320	4,210	4,310
Nonagricultural:							
Standard muriate	285	293	305	300	255	598	555
Soluble muriate	66	81	74	67	74	155	141
Total	351	374	379	367	329	753	696

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

Source: Potash & Phosphate Institute.

TABLE 5
U.S. EXPORTS OF POTASH 1/

(Metric tons, unless otherwise specified)

	Approximate average K ₂ O content (percent)	July - December 2001		January - June 2002		Year ending June 30, 2002	
		K ₂ O		K ₂ O		K ₂ O	
		Product	equivalent e/	Product	equivalent e/	Product	equivalent e/
Potassium chloride, all grades	61	149,000	90,700	228,000	139,000	377,000	230,000
Potassium nitrate	45	4,080	1,840	3,290	1,480	7,370	3,320
Potassium sulfate	51	103,000	52,700	79,400	40,500	183,000	93,200
Potassium magnesium sulfate 2/	22	161,000	35,500	229,000	50,400	390,000	85,900
Total	XX	417,000	181,000	540,000	232,000	957,000	412,000

e/ Estimated. XX Not applicable.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Contains exports listed under Harmonized Code Category 3104.10.0000.

Source: U.S. Census Bureau, as adjusted by the U.S. Geological Survey.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF POTASH 1/

(Metric tons, unless otherwise specified)

	Approximate average K2O content (percent)	July - December 2001			January - June 2002			Year ending June 30, 2002		
		Product	K2O equivalent e/	Customs value (thousands)	Product	K2O equivalent e/	Customs value (thousands)	Product	K2O equivalent e/	Customs value (thousands)
Potassium chloride 2/ 3/	61	3,330,000	2,030,000	\$227,000	3,900,000	2,380,000	\$285,000	7,220,000	4,410,000	\$512,000
Potassium sulfate	51	37,500	19,100	6,900	85,500	43,600	15,100	123,000	62,700	22,000
Potassium nitrate	45	19,300	8,700	5,010	40,700	18,300	11,500	60,100	27,000	16,500
Potassium nitrate mixtures	14	13	2	10	6,010	841	2,610	6,020	843	2,620
Total	XX	3,380,000	2,060,000	239,000	4,030,000	2,440,000	314,000	7,410,000	4,500,000	554,000

e/ Estimated. XX Not applicable.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Purchases of muriate by U.S. companies were subtracted from imports to prevent double counting due to conversion to sulfate of potash.

3/ Contains imports listed under Harmonized Code number 3104.10.0000.

Source: U.S. Census Bureau, as adjusted by the U.S. Geological Survey.

TABLE 7
U.S. IMPORTS FOR CONSUMPTION OF POTASH, BY COUNTRY 1/ 2/

(Metric tons)

Country	Potassium chloride		Potassium sulfate		Potassium nitrate		Potassium sodium nitrate		Total		Total value (thousands)		C.i.f.	
	2001	2002	2001	2002	2001	2002	2001	2002	2001	2002	Customs		2001	2002
												2001	2002	
Belarus	196,000	187,000	--	--	--	--	--	--	196,000	187,000	\$16,100	\$15,200	\$18,000	\$16,900
Belgium	--	--	21	10,200	--	7	--	--	21	10,200	7	1640	11	1720
Canada	6,960,000	6,740,000	16,700	16,500	38	19	222	188	6,980,000	6,760,000	477,000	477,000	495,000	501,000
Chile	--	150	13,400	10,100	44,400	46,800	15,400	5,820	73,200	62,900	16,000	15,400	17,900	17,400
Denmark	--	--	--	--	2,100	4,940	--	--	2,100	4,940	721	1,770	934	2,350
Germany	689	5,600	67,900	85,600	728	1720	32	12	69,400	92,900	12,700	16,000	13,500	18,100
Israel	20	71300	--	--	2900	5260	--	--	2,920	76,600	758	7990	1060	9240
Japan	333	--	758	346	891	906	--	--	1,980	1,250	846	666	956	747
Lithuania	--	9710	--	--	--	--	--	--	--	9,710	--	811	--	939
Poland	--	--	--	--	131	74	--	--	131	74	73	38	84	45
Russia	322,000	211,000	--	--	--	--	--	--	322,000	211,000	27,700	17,200	30,800	19,000
United Kingdom	668	43	--	--	1	2	--	--	669	45	385	55	479	64
Other 3/	95	47	96	147	367	339	--	6	558	539	250	250	276	279
Total	7,480,000	7,220,000	98,900	123,000	51,500	60,100	15,600	6,020	7,650,000	7,410,000	553,000	554,000	579,000	588,000

-- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Crop year 2001 contains data from July 1, 2000 to June 30, 2001 and crop year 2002 contains data from July 1, 2001 to June 30, 2002.

3/ Potassium chloride includes China, India (2001), Slovakia, Switzerland (2001); potassium sulfate includes the Dominican Republic (2001), France, India (2001), Mexico (2002), the Netherlands (2001), Switzerland (2001); potassium nitrate includes China (2002), the Dominican Republic (2001), Hong Kong (2002), India, Mexico, the Netherlands (2002); potassium sodium nitrate includes the Netherlands (2002).

Source: U.S. Census Bureau, adjusted by the U.S. Geological Survey.