

Mineral Industry Surveys

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MARKETABLE PHOSPHATE ROCK AND POTASH—CROP YEAR 2015

Because the growth cycles for most agricultural commodities do not coincide with the calendar year, the fertilizer industry tracks fertilizer use by crop year (July 1–June 30 of two consecutive years). Taking that into account, the U.S. Geological Survey compiles phosphate rock and potash data by calendar year and crop year.

Marketable Phosphate Rock

U.S. production of marketable phosphate rock was 26.1 million metric tons (Mt) in crop year 2015, which ended June 30, 2015, compared with 28.0 Mt in crop year 2014.

Marketable phosphate rock used was 26.6 Mt, compared with 27.4 Mt in crop year 2014. No sales of phosphate rock were reported because all phosphate rock is used internally by the companies that mine it. The manufacturing of wet-process phosphoric acid for fertilizers and animal feed supplements was estimated to have accounted for more than 95% of phosphate rock consumption. The remainder was used to produce elemental phosphorus, or defluorinated phosphate rock.

Phosphate rock data for this report were collected through semi-annual canvasses of U.S. phosphate rock producers. All companies that produced phosphate rock in the United States participated in the voluntary surveys, representing 100% of the production, use, and value data shown in the tables.

Domestic apparent consumption decreased by 7% to 28.4 Mt in crop year 2015, from 30.4 Mt in crop year 2014, because of lower phosphoric acid and fertilizer production. Producers' stocks decreased by 13% to 6.89 Mt in crop year 2015.

The average unit value of marketable phosphate rock used in the United States was \$72.94 per metric ton, compared with \$80.97 per metric ton in crop year 2014. Imports of phosphate rock decreased by 41% to 1.76 Mt compared with 2.99 Mt in crop year 2014, owing mainly to the closure of Mississippi Phosphates Corp. fertilizer plant in November 2014, after the

company declared bankruptcy (Green Markets, 2014a). No exports of phosphate rock were reported by mining companies in crop year 2015.

Potash

U.S. production of potash was 660,000 metric tons (t) K₂O equivalent in crop year 2015 compared with 870,000 t in crop year 2014. Sales of potash were 750,000 t in crop year 2015 compared with 910,000 t in crop year 2014. Production and sales decreased owing in part to the decision by The Mosaic Company to produce only sulfate of potash magnesia and stop production of muriate of potash at its New Mexico mine (Green Markets, 2014b).

Exports of potash decreased by 79% to 38,000 t from 183,000 t in crop year 2014. Imports decreased slightly to 5.93 Mt. The total customs value of potash imports increased by 2% to \$3.09 billion from \$3.02 billion in crop year 2014.

Potash data for this report were collected through semi-annual canvasses of U.S. potash producers. All companies that produced potash in the United States participated in the voluntary surveys, representing 100% of the production, use, and value data show in the tables.

Apparent consumption of all forms of potash decreased slightly to 6.60 Mt from 6.70 Mt in crop year 2014.

References Cited

- Green Markets, 2014a, Miss Phos puts liabilities at \$140.9 M, *assets* at \$98.8 M; DAP production idled: Green Markets, v. 38, no. 50, December 15, p. 1, 16.
Green Markets, 2014b, Mosaic to end Carlsbad MOP production, cut 185 jobs: Green Markets, v. 38, no. 30, July 28, p. 1, 15.

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TABLE 1
SALIENT U.S. PHOSPHATE ROCK STATISTICS¹

(Thousand metric tons and thousand dollars)

	Crop year ²	
	2014	2015
Mine production (crude ore)	124,000	119,000
Marketable phosphate rock production	28,000	26,100
P ₂ O ₅ content	7,930	7,310
Value	2,250,000	1,830,000
Average, dollars per metric ton ³	80.60	70.09
Used by producers	27,400	26,600
P ₂ O ₅ content	7,720	7,530
Value	2,220,000	1,940,000
Average, dollars per metric ton ³	80.97	72.94
Imports for consumption: ⁴	2,990	1,760
Cost, insurance, and freight value	333,000	193,000
Average, dollars per metric ton	111.24	109.71
Consumption ⁵	30,400	28,400
Stocks, June 30, producers ¹	7,940	6,870

¹Data are rounded to no more than three significant digits, except prices.

²July 1– June 30.

³Average value is based on used values.

⁴Source: U.S. Census Bureau.

⁵Expressed as used plus imports.

TABLE 2
PRODUCTION OF PHOSPHATE ROCK IN THE UNITED STATES¹

(Thousand metric tons and thousand dollars)

Period	Mine production, crude ore		Marketable production, beneficiated			Stocks, end of period, rock
	Rock	P ₂ O ₅ content	Rock	P ₂ O ₅ content	Value ²	
Crop Year 2014	124,000	13,000	28,000	7,930	2,250,000	7,940
Crop Year 2015:						
July–December 2014	54,700	5,970	12,300	3,430	988,000	5,880
January–June 2015	64,300	8,030	13,800	3,880	842,000	6,870
Total	119,000	14,000	26,100	7,310	1,830,000	XX

XX Not Applicable.

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

²Based on the per ton sold or used values.

TABLE 3
PHOSPHATE ROCK USED BY PRODUCERS
IN THE UNITED STATES¹

(Thousand metric tons and thousand dollars)

Period	Rock	P ₂ O ₅	Value ²
		content	
Crop Year 2014	27,400	7,720	2,220,000
Crop Year 2015:			
July–December 2014	13,800	3,910	1,160,000
January–June 2015	12,800	3,620	788,000
Total	26,600	7,530	1,940,000

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

²Free on board mine.

TABLE 4
SALIENT POTASH STATISTICS^{1,2}

(Thousand metric tons and thousand dollars unless otherwise specified)

	Year ending June 30	
	2014	2015
United States:		
Production: ³		
Gross weight	1,900 ^r	1,700
K ₂ O equivalent	870 ^r	660
Sales by producers:		
Quantity: ³		
Gross weight	2,000 ^r	1,700
K ₂ O equivalent	910 ^r	750
Value ^{3,4}	644,000 ^r	620,000
Average value: ⁵		
Gross weight dollars per metric ton	325 ^r	360
K ₂ O equivalent do.	705 ^r	830
Exports:		
Gross weight	307	69
K ₂ O equivalent	183	38
Imports for consumption: ^{6,7}		
Quantity:		
Gross weight	9,900 ^r	9,780
K ₂ O equivalent	6,020 ^r	5,930
Value, customs	3,020,000 ^r	3,090,000
Consumption, apparent: ^{3,8}		
Gross weight	12,000 ^r	11,400
K ₂ O equivalent	6,700 ^r	6,600

^rRevised. do. Ditto.

¹Includes muriate of potash, sulfate of potash, potassium magnesium sulfate, and some parent salts. Excludes other chemical compounds that contain potassium.

²Data are rounded to no more than three significant digits unless otherwise specified.

³Data are rounded to no more than two significant digits.

⁴Free on board mine.

⁵Rounded to the nearest \$5 to avoid disclosing proprietary data.

⁶Excludes potassium chemicals and mixed fertilizers.

⁷Includes nitrate of potash.

⁸Calculated from sales plus imports minus exports.

TABLE 5
PRICES OF U.S. POTASH, BY TYPE AND GRADE^{1,2}

(Dollars per metric ton of K₂O equivalent)

Type and grade	Crop Year 2014		Crop Year 2015	
	July– December 2013	January– June 2014	July– December 2014	January– June 2015
<u>Muriate, 60% K₂O minimum:</u>				
Standard	620 ^r	570 ^r	595	605
Granular	530	555	555	595

^rRevised.

¹Average prices, free on board mine, based on sales.

²Data rounded to nearest \$5.

TABLE 6
U.S. EXPORTS OF POTASH IN CROP YEAR 2015¹

(Metric tons, unless otherwise specified)

Type	Approximate average K ₂ O content (percent)	July-December 2014		January-June 2015		Year ending June 30, 2015	
		Product	K ₂ O equivalent ^e	Product	K ₂ O equivalent ^e	Product	K ₂ O equivalent ^e
Potassium chloride, all grades	61	18,800	11,500	16,400	10,000	35,200	21,500
Potassium nitrate	45	4,100	1,850	4,300	1,940	8,400	3,780
Potassium sulfate	51	10,400	5,300	14,800	7,550	25,200	12,900
Total	XX	33,300	18,600	35,500	19,500	68,800	38,100

^eEstimated. XX Not applicable.

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

Source: U.S. Census Bureau.

TABLE 7
U.S. IMPORTS FOR CONSUMPTION OF POTASH IN CROP YEAR 2015¹

(Metric tons, unless otherwise specified)

Type	Approximate average K ₂ O content (percent)	July–December 2014			January–June 2015			Year ending June 30, 2015		
		Product	K ₂ O equivalent ^e	Customs value (thousands)	Product	K ₂ O equivalent ^e	Customs value (thousands)	Product	K ₂ O equivalent ^e	Customs value (thousands)
Potassium chloride	61	5,100,000	3,110,000	\$1,460,000	4,420,000	2,700,000	\$1,460,000	9,520,000	5,810,000	\$2,920,000
Potassium sulfate	51	51,500	26,300	27,000	79,500	40,500	38,600	131,000	66,800	65,600
Potassium nitrate	45	58,000	26,100	43,500	71,100	32,000	55,300	129,000	58,100	98,800
Potassium nitrate mixtures	14	900	126	400	1,200	168	400	2,100	294	800
Total	XX	5,210,000	3,160,000	1,530,000	4,570,000	2,770,000	1,550,000	9,780,000	5,930,000	3,090,000

^eEstimated. XX Not applicable.

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

Source: U.S. Census Bureau.