

POTASH

(Data in thousand metric tons of K₂O equivalent unless otherwise noted)

Domestic Production and Use: In 2014, the production value of marketable potash, f.o.b. mine, was about \$700 million. Potash was produced in New Mexico and Utah. Most of the production was from southeastern New Mexico, where two companies operated four mines. New Mexico sylvinitic and langbeinitic ores were beneficiated by flotation, dissolution-recrystallization, heavy-media separation, or combinations of these processes, and provided more than 75% of total U.S. producer sales. In Utah, which has three operations, one company extracted underground sylvinitic ore by deep-well solution mining. Solar evaporation crystallized the sylvinitic 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 (sulfate of potash or SOP), and byproducts.

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

| Salient Statistics—United States: | 2010 | 2011 | 2012 | 2013 | 2014^e |
|--|-------------|-------------|-------------|-------------|-------------------------|
| Production, marketable ¹ | 930 | 1,000 | 900 | 960 | 850 |
| Sales by producers, marketable ¹ | 1,000 | 990 | 980 | 880 | 950 |
| Imports for consumption | 4,760 | 4,980 | 4,240 | 4,650 | 4,600 |
| Exports | 297 | 202 | 234 | 289 | 100 |
| Consumption: ^{1, 2} | 5,500 | 5,800 | 5,000 | 5,200 | 5,500 |
| Price, dollars per metric ton of K ₂ O, average, muriate, f.o.b. mine ³ | 630 | 745 | 765 | 720 | 730 |
| Employment, number: | | | | | |
| Mine | 650 | 660 | 750 | 750 | 740 |
| Mill | 700 | 620 | 740 | 740 | 720 |
| Net import reliance ⁴ as a percentage of apparent consumption | 83 | 83 | 82 | 82 | 84 |

Recycling: None.

Import Sources (2010–13): Canada, 85%; Russia, 10%; Israel, 2%; Chile, 2%; and other, 1%.

| Tariff: | Item | Number | Normal Trade Relations |
|----------------|-----------------------------------|---------------|-------------------------------|
| | | | 12–31–14 |
| | Potassium nitrate | 2834.21.0000 | Free. |
| | Potassium chloride | 3104.20.0000 | Free. |
| | Potassium sulfate | 3104.30.0000 | Free. |
| | Potassic fertilizers, other | 3104.90.0100 | Free. |
| | Potassium-sodium nitrate mixtures | 3105.90.0010 | Free. |

Depletion Allowance: 14% (Domestic and foreign).

Government Stockpile: None.

Events, Trends, and Issues: In 2014, domestic and world consumption, sales, and trade increased from those of 2013. Asia and South America were the regions that showed the highest increases in consumption. World production was estimated to have increased owing primarily to increased production in Belarus and Russia. Production in the United States was lower because of the closure of a mine in Michigan in late 2013 and lower production in New Mexico.

A producer in New Mexico announced plans to stop production of MOP in late 2014, because of decreasing ore quality and the age of the processing facility. The company would continue to produce SOPM in New Mexico.

The other active producer in New Mexico began production from a new solar solution mine in 2014. The company planned to ramp up to full production levels of 150,000 to 200,000 tons per year in 2015.

A Canadian company received approval from the U.S. Bureau of Land Management to begin construction of a new underground potash mine in southeastern New Mexico that would produce SOP only. The company planned to begin production in 2017 or 2018, with an annual production capacity of 714,000 tons of SOP.

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In 2014, development of new mines and expansions of existing facilities continued in Argentina, Brazil, Canada, Congo (Brazzaville), Eritrea, Ethiopia, Russia, Turkmenistan, the United Kingdom, and Uzbekistan. Many projects however have been delayed to beyond 2018 because of excess production capacity and lower prices. World potash production capacity was projected to increase to about 61 million tons in 2018 from 55 million tons in 2015. Most of the increases would be from new mines in Canada and Russia and expansions of mines in Belarus, Canada, China, and Russia. Consumption of potash for all uses was projected to increase to 38 million tons in 2018 from 36 million tons in 2015.

Following the dissolution of the marketing agreement between potash producers from Belarus and Russia in July 2013, world potash prices decreased gradually from around \$400 per ton MOP to around \$300 per ton MOP in April 2014. The price remained level until the fourth quarter of 2014, when prices began to increase slightly.

World Mine Production and Reserves: Reserves for Belarus are from official Government sources and may not be comparable to the reserves definition in Appendix C. Reserves for Brazil, Canada, Russia, the United Kingdom, and the United States were from company reports. Reserves for other countries were revised to include Argentina, Congo (Brazzaville), Ethiopia, Laos, and Uzbekistan. The previous report contained reserves data in either recoverable ore or K₂O content, depending on the source. To remain consistent with previously reported data, recoverable ore data and K₂O equivalent are included in reserves when available. Some countries only publish data as K₂O equivalent.

| | Mine production | | Reserves ⁵ | |
|----------------------------|-----------------|-------------------|-----------------------|-----------------------------|
| | 2013 | 2014 ^e | Recoverable ore | K ₂ O equivalent |
| United States ¹ | 960 | 850 | 1,700,000 | 200,000 |
| Belarus | 4,240 | 4,300 | 3,300,000 | 750,000 |
| Brazil | 430 | 350 | 300,000 | 50,000 |
| Canada | 10,100 | 9,800 | 4,700,000 | 1,100,000 |
| Chile | 1,050 | 1,100 | NA | 150,000 |
| China | 4,300 | 4,400 | NA | 210,000 |
| Germany | 3,200 | 3,000 | NA | 150,000 |
| Israel | 2,100 | 2,500 | NA | ⁶ 40,000 |
| Jordan | 1,080 | 1,100 | NA | ⁶ 40,000 |
| Russia | 6,100 | 6,200 | 2,800,000 | 600,000 |
| Spain | 420 | 420 | NA | 20,000 |
| United Kingdom | 470 | 470 | NA | 70,000 |
| Other countries | — | 150 | 250,000 | 90,000 |
| World total (rounded) | 34,500 | 35,000 | NA | 3,500,000 |

World Resources: Estimated domestic potash resources total about 7 billion tons. Most of these lie 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 Manitoba and Saskatchewan, Canada. The Paradox Basin in Utah contains resources of about 2 billion tons, mostly at depths of more than 1,200 meters. The Holbrook Basin of Arizona contains resources of about 0.7 to 2.5 billion tons. A large potash resource lies about 2,100 meters under central Michigan and contains more than 75 million tons. Estimated world resources total about 250 billion tons.

Substitutes: No substitutes exist 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.

^eEstimated. NA. Not available. — Zero.

¹Data are rounded to no more than two significant digits to avoid disclosing company proprietary data.

²Defined as sales + imports – exports.

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

⁴Defined as imports – exports.

⁵See Appendix C for resource/reserve definitions and information concerning data sources.

⁶Total reserves in the Dead Sea are arbitrarily divided equally between Israel and Jordan for inclusion in this tabulation.