

## SALT

(Data in thousand metric tons unless otherwise noted)

**Domestic Production and Use:** Domestic production of salt was estimated to have decreased by 7% in 2016 to 42 million tons. The total value of salt sold or used was estimated to be about \$2.0 billion. Twenty-nine companies operated 64 plants in 16 States. The top producing States, in alphabetical order, were Kansas, Louisiana, Michigan, New York, Ohio, Texas, and Utah. These seven States produced about 95% of the salt in the United States in 2016. The estimated percentage of salt sold or used was, by type, rock salt, 44%; salt in brine, 38%; solar salt, 9%; and vacuum pan salt, 9%.

Highway deicing accounted for about 44% of total salt consumed. The chemical industry accounted for about 36% of total salt sales, with salt in brine accounting for 88% of the salt used for chemical feedstock. Chlorine and caustic soda manufacturers were the main consumers within the chemical industry. The remaining markets for salt were, in declining order of use, distributors, 8%; agricultural, 3%; food processing, 3%; other uses combined with exports, 3%; general industrial, 2%; and primary water treatment, 1%.

<b>Salient Statistics—United States:</b> <sup>1</sup>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016<sup>e</sup></b>
Production	37,200	39,900	45,300	<sup>e</sup> 45,000	42,000
Sold or used by producers	34,900	43,100	46,000	<sup>e</sup> 42,000	39,000
Imports for consumption	9,880	11,900	20,100	21,600	12,500
Exports	809	525	940	839	650
Consumption:					
Apparent <sup>2</sup>	44,000	54,500	65,200	<sup>e</sup> 62,800	50,900
Reported	36,900	47,600	55,000	<sup>e</sup> 53,000	50,000
Price, average value of bulk, pellets and packaged salt, dollars per ton, f.o.b. mine and plant:					
Vacuum and open pan salt	169.93	172.09	180.61	<sup>e</sup> 185.00	190.00
Solar salt	71.87	78.04	83.90	<sup>e</sup> 89.00	90.00
Rock salt	36.89	47.22	48.11	<sup>e</sup> 47.00	45.00
Salt in brine	8.44	8.49	9.08	<sup>e</sup> 9.25	9.40
Employment, mine and plant, number <sup>e</sup>	4,100	4,100	4,200	4,200	4,100
Net import reliance <sup>3</sup> as a percentage of apparent consumption	22	22	29	33	23

**Recycling:** None.

**Import Sources (2012–15):** Chile, 38%; Canada, 33%; Mexico, 11%; The Bahamas, 4%; and other, 14%.

<b>Tariff:</b>	<b>Item</b>	<b>Number</b>	<b>Normal Trade Relations</b>
			<b>12–31–16</b>
	Salt (sodium chloride)	2501.00.0000	Free.

**Depletion Allowance:** 10% (Domestic and foreign).

**Government Stockpile:** None.

**Events, Trends, and Issues:** In 2015–16, winter was warmer than average for the first time in several years, and the amount of frozen precipitation and the number of winter weather events was below average in many parts of the United States, requiring less salt for highway deicing. Rock salt production and imports in 2016 decreased significantly from the levels in 2014 and 2015 because of decreased demand from many local and State transportation departments. The majority of local and State governments in cold regions reportedly had rebuilt their stockpiles and had large supplies of rock salt available for the winter of 2015–16. As winter ended, many rock salt users had substantial stockpiles of salt remaining as they considered purchasing less salt for the next winter season. Owing to the greatly decreased demand for deicing salt, rock salt unit prices decreased.

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For the winter of 2016–17, the National Oceanic and Atmospheric Administration predicted a La Niña weather pattern of cooler and snowier weather for the traditional snowbelt in the northern tier of the United States, with average or above-average winter precipitation and average to cooler temperatures. The southern part of the United States was expected to be warmer and dryer than average. This would likely increase consumption of salt slightly for deicing compared to the past winter season because only part of the country was expected to be cooler. It was anticipated that the salt industry would be able to provide adequate salt supplies from domestic and foreign sources for emergency use in the event of harsher than anticipated winter weather.

Demand for salt brine used in the chloralkali industry was expected to increase as demand and prices for caustic soda experienced global growth, especially in Asia. Exports from India increased to satisfy the growing demand for caustic soda in China.

### World Production and Reserves:

	Production		Reserves <sup>4</sup>
	2015 <sup>e</sup>	2016 <sup>e</sup>	
United States <sup>1</sup>	45,000	42,000	Large. Economic (as well as subeconomic) deposits of salt are substantial in principal salt-producing countries. The oceans contain a virtually inexhaustible supply of salt.
Australia	11,000	12,000	
Brazil	7,500	7,500	
Canada	12,500	10,000	
Chile	11,800	11,000	
China	70,000	58,000	
France	6,000	6,000	
Germany	12,500	12,500	
India	17,000	19,000	
Mexico	10,500	10,500	
Poland	4,200	4,200	
Spain	4,300	4,300	
Turkey	6,000	6,000	
Ukraine	6,100	6,100	
United Kingdom	5,000	5,000	
Other countries	<u>42,000</u>	<u>41,000</u>	
World total (rounded)	<u>271,000</u>	<u>255,000</u>	

**World Resources:** World continental resources of salt are vast, and the salt content in the oceans is nearly unlimited. Domestic resources of rock salt and salt from brine are primarily in Kansas, Louisiana, Michigan, New York, Ohio, and Texas. Saline lakes and solar evaporation salt facilities are in Arizona, California, Nevada, New Mexico, Oklahoma, and Utah. Almost every country in the world has salt deposits or solar evaporation operations of various sizes.

**Substitutes:** No economic substitutes or alternatives for salt exist in most applications. Calcium chloride and calcium magnesium acetate, hydrochloric acid, and potassium chloride can be substituted for salt in deicing, certain chemical processes, and food flavoring, but at a higher cost.

<sup>e</sup>Estimated.

<sup>1</sup>Excludes production from Puerto Rico.

<sup>2</sup>Defined as sold or used by producers + imports – exports.

<sup>3</sup>Defined as imports – exports.

<sup>4</sup>See [Appendix C](#) for resource and reserve definitions and information concerning data sources.