SALT

(Data in thousand metric tons unless otherwise specified)

Domestic Production and Use: Domestic production of salt was an estimated 42 million tons in 2023. The quantity of salt sold or used in 2023 was an estimated 41 million tons with a total estimated value of $2.6 billion. Salt was produced by 25 companies that operated 63 plants in 16 States. The top producing States were Kansas, Louisiana, Michigan, New York, Ohio, Texas, and Utah. These seven States produced about 95% of the salt in the United States in 2023. The estimated percentage of salt sold or used was, by type, rock salt, 46%; salt in brine, 33%; vacuum pan salt, 11%; and solar salt, 10%.

Highway deicing accounted for about 41% of total salt consumed. The chemical industry accounted for about 38% of total salt sales, with salt in brine accounting for 86% 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 distributors, 10%; food processing, 4%; agricultural, 3%; general industrial, 2%; miscellaneous, 1%, and primary water treatment, 1%.

Salient Statistics—United States:[1]	2019	2020	2021	2022	2023[e]
Production	44,800	42,600	39,300	[e]41,000	42,000
Sold or used by producers	44,900	39,600	39,800	[e]40,000	41,000
Imports for consumption	18,700	15,800	17,700	17,800	16,000
Exports	1,020	1,250	1,010	890	2,300
Consumption:					
Apparent[2]	62,500	54,200	56,400	[e]57,000	55,000
Reported	51,800	44,000	47,100	[e]47,000	48,000
Price, average unit value of bulk, pellets and packaged salt, free on board (f.o.b.) mine and plant, dollars per metric ton:					
Vacuum and open pan salt	211.57	212.21	203.72	[e]210	220
Solar salt	126.18	122.77	153.52	[e]150	150
Rock salt	59.90	61.71	59.88	[e]60	61
Salt in brine	7.56	8.36	8.14	[e]8.40	8.50
Employment, mine and plant, number[e]	4,100	4,000	4,000	4,100	4,100
Net import reliance[3] as a percentage of apparent consumption	28	27	30	30	25

Recycling: None.

Import Sources (2019–22): Canada, 29%; Chile, 28%; Mexico, 12%; Egypt, 11%; and other, 20%.

Tariff: Item	Number	Normal Trade Relations 12–31–23
Salt (sodium chloride)	2501.00.0000	Free.

Depletion Allowance: 10% (domestic and foreign).

Government Stockpile: None.

Events, Trends, and Issues: Consumption of salt in 2023 remained lower than 2019 levels after the coronavirus disease 2019 (COVID-19) pandemic affected production and consumption of salt throughout the world since 2020. Increased energy costs also negatively affected salt markets as increased processing and especially transportation costs negatively affected the ability to import and export salt at competitive prices for some international transactions.

For much of the 2022–23 winter, temperatures were near or above average with lower or average precipitation throughout most of the traditional U.S. snowbelt. The number of winter weather events including freezing rain, sleet, and snow is a better predictor of demand for rock salt than total snowfall. Several low snowfall or icing events usually require more salt for highway deicing than a single large snowfall event. Rock salt imports in 2023 were estimated to have decreased compared with those in 2022 because demand from many local and State transportation departments was essentially unchanged from the previous year and stockpiles of domestically sourced salt were sufficient to meet demand in many areas.

Prepared by **Wallace P. Bolen [(703) 648–7727, wbolen@usgs.gov]**

SALT

For the 2023–24 winter, the National Oceanic and Atmospheric Administration (NOAA) predicted a El Niño weather pattern for the first time in 4 years. A strong El Niño historically favors a warmer-than-average temperature pattern in the northern tier of the continental United States. NOAA forecasted wetter-than-average conditions for the Gulf Coast, lower Middle Atlantic, the southern Plains, and the Southeast, but drier-than-average conditions across the northern tier of the United States. These forecasts indicate that demand for rock salt could decrease in many locales in the United States.

Demand for salt brine used in the chloralkali industry was expected to increase in 2024 as demand for caustic soda and polyvinyl chloride increases globally, especially in Asia. Salt exports from Australia and especially India have increased in recent years to meet the increasing demand in China, as salt production in China has decreased.

World Production and Reserves:

	Mine production[e]		Reserves[4]
	2022	2023	
United States[1]	41,000	42,000	Large. Economic and subeconomic deposits of salt are substantial in principal salt-producing countries. The oceans contain a virtually inexhaustible supply of salt.
Australia	13,000	14,000	
Belarus	2,000	2,100	
Brazil	6,600	6,600	
Bulgaria	3,300	3,300	
Canada	12,000	12,000	
Chile	9,000	9,200	
China	54,000	53,000	
Egypt	2,300	2,300	
France	5,500	5,600	
Germany	15,000	15,000	
India	30,000	30,000	
Iran	2,700	2,700	
Italy	1,900	2,000	
Mexico	8,700	9,000	
Netherlands	5,900	6,000	
Pakistan	3,000	3,000	
Poland	4,300	4,200	
Russia	8,000	7,000	
Saudi Arabia	2,400	2,500	
Spain	3,900	4,000	
Turkey	9,100	9,000	
United Kingdom	2,400	2,300	
Other countries	26,000	27,000	
World total (rounded)	270,000	270,000	

World Resources:[4] 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.

[e]Estimated.

[1]Excludes production from Puerto Rico.

[2]Defined as sold or used by producers + imports – exports.

[3]Defined as imports – exports.

[4]See Appendix C for resource and reserve definitions and information concerning data sources.