SALT

(Data in thousand metric tons, unless otherwise noted)

Domestic Production and Use: Domestic production of salt decreased slightly in 2002, with total value estimated at $1 billion. Thirty companies operated 68 plants in 15 States. The estimated percentage of salt sold or used, by type, was salt in brine, 48%; rock salt, 35%; vacuum pan, 10%; and solar salt, 7%.

The chemical industry consumed about 41% of total salt sales, with salt in brine representing about 90% of the type of salt used for feedstock. Chlorine and caustic soda manufacture was the main consuming sector within the chemical industry. Salt for highway deicing accounted for 34% of U.S. demand. The remaining markets for salt, in declining order, were distributors, 8%; industrial, 6%; agricultural, 4%; food, 4%; other combined with exports, 2%; and primary water treatment, 1%.

Salient Statistics—United States:[1]	1998	1999	2000	2001	2002[e]
Production	41,200	44,900	45,600	44,800	43,900
Sold or used by producers	40,800	44,400	43,300	42,200	41,200
Imports for consumption	8,770	8,870	8,960	12,900	10,000
Exports	731	892	642	1,120	1,000
Consumption:					
Reported	44,200	50,000	54,000	48,700	50,200
Apparent	48,800	52,400	51,600	54,000	50,200
Price, average value of bulk, pellets and packaged salt, dollars per ton, f.o.b. mine and plant:					
Vacuum and open pan salt	114.93	112.49	113.95	120.02	122.00
Solar salt	37.56	52.08	50.46	52.33	45.00
Rock salt	21.90	22.55	20.67	21.84	20.00
Salt in brine	5.93	6.65	5.70	6.26	6.00
Stocks, producer, yearend[e 2]	400	500	2,300	—	—
Employment, mine and plant, number	4,150	4,100	4,100	4,100	4,000
Net import reliance[3] as a percentage of apparent consumption	17	15	16	22	18

Recycling: None.

Import Sources (1998-2001): Canada, 41%; Chile, 21%; Mexico, 13%; The Bahamas, 9%; and other, 16%.

Tariff: Item	Number	Normal Trade Relations 12/31/02
Iodized salt	2501.00.0000	Free.

Depletion Allowance: 10% (Domestic and foreign).

Government Stockpile: None.

Prepared by **Dennis S. Kostick [(703) 648-7715, dkostick@usgs.gov, fax: (703) 648-7722]**

SALT

Events, Trends, and Issues: A cost/benefit analysis by a government agency in Switzerland and a university in Germany concluded that using sand as a road deicer was six times more costly than using deicing salt. Their study stated that sand, which had been assumed to be environmentally acceptable because it did not contain any salt, was more detrimental to the environment. As a result, several European cities are reducing their use of sand.

Three new salt plants, two in Spain and one in Portugal, were constructed using new proprietary technology that involves hydromilling, elutriation, hydroclassification, and hydroextraction. The plants in Spain are in Súria and Cardona, and the one in Portugal is near Pombal. Salt is recovered as a byproduct from potassium chloride at the Súria facility and from a salt dome at Cardona. In Pombal, salt is obtained as brine from the solution mining of underground halite in which large cavities are developed to store natural gas.

A major European salt producer announced the closure of its evaporative salt plant in Stade, Germany. The company cited overcapacity, low prices, and rising energy costs as the reasons for the closure. It had also cut back on production and employment at its other salt facility in Hengelo, Netherlands.

In the Ust'-Vym district of the Komi Republic of Russia, construction began on a new $70 million salt brine and evaporative salt facility. About 350,000 tons of high-grade salt are to be produced annually from a solution mining network that uses an interconnected ten-well system.

Domestic consumption of salt in 2003 is expected to be higher than that of 2002. However, weather forecasters indicated that the winter of 2002–03 may be relatively mild because of an El Niño weather episode developing in late 2002. If this occurs, consumption of salt for highway deicing may be less than normal.

World Production, Reserves, and Reserve Base:

	Production		Reserves and reserve base[4]
	2001	2002[e]	
United States[1]	44,800	43,900	Large. Economic and subeconomic deposits of salt are substantial in principal salt-producing countries. The oceans contain an inexhaustible supply of salt.
Australia	9,500	10,000	
Brazil	6,000	7,000	
Canada	12,500	13,000	
China	31,000	35,000	
France	7,000	7,100	
Germany	15,700	15,700	
India	14,500	14,800	
Italy	3,600	3,600	
Mexico	8,900	8,700	
Poland	4,200	4,300	
Russia	2,800	3,000	
Spain	3,200	3,200	
Ukraine	2,300	2,400	
United Kingdom	5,800	5,800	
Other countries	53,200	48,000	
World total (may be rounded)	225,000	225,000	

World Resources: World resources of salt are practically unlimited. Domestic resources of rock salt and salt from brine are in the Northeast, Central Western, and southern Gulf Coast States. Saline lakes and solar evaporation salt facilities are near populated regions in the Western United States. Almost every country in the world has salt deposits or solar evaporation operations of various sizes.

Substitutes: There are no economic substitutes or alternates for salt. 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. — Zero.

[1]Excludes Puerto Rico production.

[2]Reported stock data are incomplete. For apparent consumption and net import reliance calculations, changes in annual stock totals are assumed to be the difference between salt produced and salt sold or used.

[3]Defined as imports - exports + adjustments for Government and industry stock changes.

[4]See Appendix C for definitions.