

SODIUM SULFATE

(Data in thousand metric tons, unless otherwise noted)

Domestic Production and Use: The domestic natural sodium sulfate industry consisted of two producers operating a total of two plants in California and Texas. Total production of natural and synthetic sodium sulfate increased an estimated 5% compared with that of the 1996. Approximately 45% of total production was a byproduct from facilities that manufacture rayon and various chemicals. The total value of sodium sulfate sold was an estimated \$58 million.

Estimates of U.S. sodium sulfate consumption by end use were soap and detergents, 42%; textiles, 15%; pulp and paper, 12%; glass, 11%; and miscellaneous, 20%.

Salient Statistics—United States:	1993	1994	1995	1996	1997^e
Production: Natural	327	298	327	306	320
Synthetic ¹	210	293	318	246	260
Total	537	591	645	551	580
Imports for consumption	163	190	206	177	160
Exports	89	65	66	86	80
Consumption, apparent (natural and synthetic)	616	724	803	639	659
Price: Quoted, sodium sulfate (100% Na ₂ SO ₄), bulk, f.o.b. works, East, dollars per short ton	114.00	114.00	114.00	114.00	114.00
Average sales value (natural source), f.o.b. mine or plant, dollars per metric ton	76.53	81.25	84.55	88.90	90.00
Stocks, producer, yearend, natural	42	34	16	19	20
Employment, well and plant, number	240	240	240	240	240
Net import reliance ² as a percent of apparent consumption	13	18	17	14	12

Recycling: There was some recycling of sodium sulfate by consumers, particularly in the pulp and paper industry, but no recycling by sodium sulfate producers.

Import Sources (1993-96): Canada, 95%; Mexico, 4%; and other, 1%.

Tariff: Item	Number	Most favored nation (MFN) 12/31/97	Non-MFN³ 12/31/97
Disodium sulfate:			
Saltcake (crude)	2833.11.1000	Free	Free.
Other	2833.11.5000	0.4% ad val.	3.6% ad val.
Anhydrous	2833.11.5010	0.4% ad val.	3.6% ad val.
Other	2833.11.5050	0.4% ad val.	3.6% ad val.

Depletion Allowance: 14% (Domestic), 14% (Foreign); for natural only.

Government Stockpile: None.

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Events, Trends, and Issues: The domestic sodium sulfate market remained strong in 1997 as sales to the detergent and textile sectors increased. Sodium sulfate producers situated closer to port facilities took advantage of their strategic location to cater to the export market while inland producers increased product sales to domestic customers. Foreign growth continued in sodium sulfate consumption, especially in Mexico, resulting in a decision by the Mexican sodium sulfate producer to increase capacity by 20%.

A synthetic sodium sulfate demand manufacturer in North Carolina completed its project in June to modify its processing technology to recover high-purity, detergent-grade sodium sulfate. The company anticipated selling material to interested detergent customers beginning in 1998.

The outlook for sodium sulfate in 1998 is forecast to be slightly higher than that estimated for 1997, with detergents remaining the largest sodium sulfate-consuming sector. World production and consumption of sodium sulfate is expected to grow in the next few years, especially in Asia and South America.

World Production, Reserves, and Reserve Base:

	Production		Reserves ⁴	Reserve base ⁴
	1996	1997 ^e		
Natural:				
United States	306	320	860,000	1,400,000
Argentina	10	10	NA	NA
Canada	315	300	84,000	270,000
China	650	650	NA	NA
Iran	280	280	NA	NA
Mexico	525	550	170,000	230,000
Spain	650	650	180,000	270,000
Turkey	300	300	100,000	NA
Turkmenistan ⁵	100	50	NA	200
Other countries	104	160	100,000	200,000
World total, natural (rounded)	3,200	3,300	⁶ 3,300,000	⁷ 4,600,000
World total, synthetic (rounded)	1,700	1,800	—	—
World total (rounded)	4,900	5,100	—	—

World Resources: Sodium sulfate resources are sufficient to last hundreds of years at the present rate of world consumption. In addition to the countries listed in World Production, the following countries also contain identified resources of sodium sulfate: Botswana, China, Egypt, Italy, Mongolia, Romania, and South Africa. Commercial production from domestic resources is from deposits in California and Texas. The brine in Searles Lake, CA, contains about 450 million metric tons of sodium sulfate resource, representing about 35% of the lake brine. In Utah, about 12% of the dissolved salts in the Great Salt Lake is sodium sulfate, representing about 400 million tons of resource. An irregular, 21-meter-thick mirabilite deposit is associated with clay beds 4.5 to 9.1 meters below the lake bottom near Promontory Point, UT. Several playa lakes in west Texas contain underground sodium sulfate-bearing brines and crystalline material. Other economic and subeconomic deposits of sodium sulfate are near Rhodes Marsh, NV; Grenora, ND; Okanogan County, WA; and Bull Lake, WY. Sodium sulfate can also be obtained as a byproduct from the production of ascorbic acid, boric acid, cellulose, chromium chemicals, lithium carbonate, rayon, resorcinol, and silica pigments. The quantity and availability of byproduct sodium sulfate are dependent on the production capabilities of the primary industries and the sulfate recovery rates.

Substitutes: In pulp and paper, emulsified sulfur and caustic soda (sodium hydroxide) can replace sodium sulfate. In detergents, a variety of products can substitute for sodium sulfate. In glassmaking, soda ash and calcium sulfate have been substituted for sodium sulfate with less-than-perfect results.

^eEstimated. NA Not available.

¹Source: Bureau of the Census. Synthetic production data are revised in accordance with recent updated Census statistics.

²Defined as imports - exports + adjustments for Government and industry stock changes.

³See Appendix B.

⁴See Appendix D for definitions.

⁵Part of the Former Soviet Union. Data are inadequate to formulate reliable estimates for individual countries of the Former Soviet Union.

⁶Excludes Argentina, Iran, and Turkmenistan. Includes nonproducing nations.

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