

SALT

By Dennis S. Kostick

Domestic survey data and tables were prepared by Jeff Milanovich, statistical assistant, and the world production table was prepared by Regina R. Coleman, international data coordinator.

Salt, also known as sodium chloride, has many end uses. Virtually every person in the world has some direct or indirect contact with salt daily. People routinely add salt to their food as a flavor enhancer or apply rock salt to walkways to remove ice in the winter. Salt is used as feedstock for chlorine and caustic soda manufacture; these two inorganic chemicals are used to make many consumer-related end-use products, such as polyvinyl chloride (PVC) plastic made from chlorine and paper-pulping chemicals manufactured from caustic soda.

Production

U.S. production data for salt are developed by the U.S. Geological Survey (USGS) from an annual voluntary survey of U.S. salt-producing sites and company operations. The information and data are fundamental resources for analysis, both within and outside the Government. The salt data and information are needed by the public and private sectors to better understand minerals and materials use, the ultimate disposition of materials in the economy and in the environment, and to develop public and private sector policies and practices that better utilize our mineral and material resources. Some of the clients that use the salt data and information are financial institutions, State and Federal agencies, salt-consuming industries (e.g., agricultural, chemical, food processing), educational institutions, and the general public.

Of the 31 companies to which a survey request was sent, all but 3 responded, representing 96% of the total production shown in this report. Data for nonrespondents were estimated on the basis of their prior responses to previous annual surveys, the 1999 production estimate survey, or brine production capabilities for chloralkali manufacture based upon chlorine production capacities.

Total U.S. salt production increased 9% in 1999 to 44.9 million metric tons (Mt) compared with that of 1998. Of the four types of salt surveyed, rock salt production increased the most; nearly 12%. This increase was because of the rise in consumption of rock salt for highway deicing. This sector had been declining since 1996, with the beginning of extremely mild winter caused by the El Niño weather phenomena; however, salt sales for road deicing in 1999 increased substantially. According to the USGS canvass for 1999, 31 companies operated 69 salt-producing plants in 15 States. Of these totals, 7 companies and 14 plants produced more than 1 Mt each and accounted for 88% and 64%, respectively, of the U.S. total production and 90% and 32%, respectively, of total value. Several companies and plants produced more than one

type of salt. In 1999, 10 companies (15 operations) produced solar-evaporated salt; 6 companies (20 operations), vacuum pan salt; 11 companies (16 operations), rock salt (an 11th company, American Rock Salt Company L.L.C., sold salt from its inventory while completing construction of its new rock salt mine); and 13 companies (27 operations), salt brine (tables 1-3).

The five leading States in terms of total salt sold or used were Louisiana, 37%; Texas, 23%; New York, 10%; Kansas, 6%; and Utah, 4% (table 4). Other Eastern States (Alabama, Michigan, Ohio, Tennessee, and West Virginia) accounted for 17% of the domestic total salt sold or used. Other Western States (Arizona, California, Nevada, New Mexico, and Oklahoma) represented 3%.

Morton International, Inc. was acquired by Rohm and Haas Co., a specialty chemicals manufacturer, for \$4.9 billion including the assumption of \$268 million of net debt. Aside from being a major salt company, Morton International also is a manufacturer of specialty chemicals. In its 1998 fiscal year ending June 30, Morton International had total annual sales of \$2.5 billion, of which \$793 million came from its salt division (Industrial Minerals, 1999c). As a result of the transaction, Rohm and Haas' five business groups are chemical specialties, electronic materials, performance polymers, salt, and surface coatings (Chemical Market Reporter, 1999).

United Salt Corp. completed construction of its vacuum pan salt facility at Baytown, TX. The plant, which has an annual capacity of 181,000 metric tons (t) (200,000 short tons), will evaporate salt brine piped from the Belleview salt dome that is 19 kilometers away. The majority of the brine will be used as feedstock for Bayer Corp.'s new chloralkali facility in Baytown (Chemical Week, 1999a).

IMC Global, Inc., announced it would increase capacity at its vacuum pan facility in Lyons, KS, to 381,000 t (420,000 short tons) and close its other vacuum pan plant in Hutchinson, KS. IMC also planned to increase capacity at its New Johnsonville, TN plant to 163,000 t (180,000 short tons) (Chemical Week, 1999b).

Consumption

In 1999, apparent consumption (salt sold or used, plus imports, minus exports) was 52.4 Mt, whereas reported consumption (sales or use as reported by the salt companies including their imports and exports) was 50.0 Mmt, which was an increase of 13% compared with that of 1998. Although these two measures of consumption are not necessarily supposed to be identical, they normally are similar. The 2.4-Mt

difference between the data for 1999 and 1998, however, can only be explained by stockpiling of imported salt by producers, distributors, and consumers during the year.

The direct and indirect uses of salt number about 14,000 uses, according to industry sources. The USGS annually surveys 8 major categories comprising 29 end uses. The 1999 reported percentage distribution of salt by major end use was chemicals, 45%; ice control, 31%; distributors (grocery and other wholesalers and retailers, etc.), 8%; general industrial, 6%; agricultural, 4%; food processing, 3%; primary water treatment, 2%; and other combined with exports, 1%. Distributors represented a substantial share of salt sales by the salt industry; all the salt, however, is ultimately resold to many end-users, of whom some have specific uses. For a more complete analysis of end-use markets, specific sectors of distribution in table 5 can be combined, such as agricultural and water treatment with agricultural and water conditioning distribution, respectively.

Aside from the different types of salt, there are various distinctions in the packaging and applications of salt. Salt for human consumption is packaged in different sized containers for several specialized purposes. Table salt may contain 0.01% potassium iodide as an additive, which provides a source of iodine that is essential to the oxidation processes in the body. Kosher salt, sea salt, condiment salt, and salt tablets are special varieties of salt.

Water conditioning and animal feed salt are made into 22.7-kilogram (50-pound) pressed blocks. Sulfur, iodine, trace elements, and vitamins are occasionally added to salt blocks to provide missing nutrients not found naturally in the diet of certain livestock. Salt is also compressed into pellets and used for water conditioning.

Chemical.—The largest consumer of salt, primarily salt brine, is the chemical industry. Within this industry, the chloralkali sector has been the major consumer of salt for manufacturing chlorine, coproduct sodium hydroxide, and synthetic soda ash. Since 1986, when the last synthetic soda ash plant closed because of high production costs and competition with less expensive natural soda ash, no synthetic soda ash has been manufactured in the United States; many countries, however, still produce synthetic soda ash and use vast quantities of salt brine as feedstock.

Salt is used as the primary raw material in chlorine manufacture because it is an inexpensive and widely available source of chlorine ions. For sodium hydroxide production, salt is the main source of the sodium ions. About 98% of the domestic chlorine and sodium hydroxide produced is obtained from the electrolysis of salt brine feedstock by using three cell technologies. The types of cells and percentage chlorine manufactured by them are diaphragm, 78%; mercury, 14%; and membrane, 6%; the remaining 2% of chlorine and caustic soda production is recovered as a byproduct from magnesium and sodium metal manufacture.

It takes about 1.75 t of salt to make 1.0 t of chlorine and 1.1 t of coproduct caustic soda. The electrolytic process ionizes the sodium chloride compound and selectively allows the ions to migrate through special membranes. Chlorine gas forms at the anode while sodium ions bond with water molecules at the

cathode to form sodium hydroxide with hydrogen gas evolving.

Chlorine and caustic soda are considered to be the first generation of products made from salt. These two chemicals are further used to manufacture other materials, which are considered to be the second generation of products from salt. Although most salt brine is produced by the same companies that use it, many chloralkali manufacturers now purchase brine from independent brine supply companies. In certain cases, brine is produced by a chemical company that uses some of it and sells the excess to neighboring competitors. According to a survey of domestic salt-base chlorine facilities, about 48% of the salt used to manufacture chlorine was produced by manufacturing companies, and 31% was purchased brine. Solar salt, rock salt, and vacuum pan salt are also used to manufacture many chemicals (tables 5-6).

In 1999, according to the U.S. Census Bureau data, 12.0 Mt of chlorine and 10.7 Mt of sodium hydroxide (caustic soda or lye) were produced. Based on the industry average ratio of 1.75 t of salt required to produce 1.0 t of chlorine and 1.1 t of coproduct sodium hydroxide, the chlorine and caustic soda industry consumed about 21 Mt of salt for feedstock. Reported consumption of total domestic and imported salt for chlorine manufacture was 21.4 Mt (table 5). The difference between the calculated and reported quantities was the amount of salt unreported to the USGS from imports or captive brine production of chloralkali producers.

Salt is also used as a feedstock in chemical establishments that make sodium chlorate (by the electrolysis of an acidified salt brine using hydrochloric acid adjusted to a pH of 6.5), metallic sodium (by the electrolysis of a molten salt mixture containing 33.2% sodium chloride and 66.8% calcium chloride, which is added to reduce the melting temperature of salt), and other downstream chemical operations. In powdered soaps and detergents, salt is used as a bulking agent and a coagulant for colloidal dispersion after saponification. In pharmaceuticals, salt is a chemical reagent and is used as the electrolyte in saline solutions. It is also used as a cofeedstock with sulfuric acid to produce sodium sulfate and hydrochloric acid. This subsector is relatively small, representing only 5% of domestic salt sales for the entire chemical sector and only 2% of total domestic salt consumption.

The consumption of salt for metallic sodium has declined during the past several years. Since the 1970's, the number of producers has decreased from three to one; Ethyl Corp. and RMI Titanium Corp. exited the market in about 1985 and 1992, respectively, leaving E. I. du Pont de Nemours & Co. Inc. as the sole manufacturer of metallic sodium in the United States. In 1998, the domestic market was less than 30,000 t having decreased from about 126,000 t in 1978. The phasing out of tetraethyl lead and tetramethyl lead gasoline additives were the main reasons for the decline in consumption. In 1978, sodium usage in gasoline represented about 80% of the domestic market. Although there is no information about sodium consumption in 1999, the largest use of sodium in 1998 was for sodium borohydride production, which is the feedstock for sodium dithionite that is used as a reductive bleaching agent by the pulp and paper industry; sodium for sodium borohydride manufacture accounted for about 38% of metallic sodium

consumption. Sodium metal also is used to manufacture sodium azide, which is used in automotive air bags. Other promising uses of sodium metal are in the remediation of chemical weapons, pesticides, polychlorinated biphenyls, and chlorofluorocarbons.

Ice Control and Road Stabilization.—The second largest end use of salt is for highway deicing. The developer of the Fahrenheit temperature scale discovered that salt mixed with ice (at a temperature below the freezing point of water) creates a solution (brine) with a lower freezing point than water by itself. The brine forms below the surface of the ice and snow and prevents the water from freezing into ice and bonding with the road surface, thus causing the snow and ice to melt. Salt is an inexpensive, widely available, and effective ice control agent. It does, however, become less effective as the temperature decreases below about -9.5°C to -6.5°C (15°F to 20°F). At lower temperatures, more salt would have to be applied to maintain higher brine concentrations to provide the same degree of melting. Most winter snowstorms and ice storms occur when temperatures are between -4°C and 0°C (25°F and 32°F), the range in which salt is most effective. An anticaking agent, such as ferric ferrocyanide (Prussian Blue) or sodium ferrocyanide (Yellow Prussiate of Soda), is used to prevent the salt from agglomerating. Both additives are nontoxic and harmless to humans. In fact, sodium ferrocyanide is approved for use in food-grade salt by the Federal Food and Drug Administration (Food Chemicals Codex, 1963).

In highway deicing, salt has been associated with corrosion of motor vehicles, bridge decks, unprotected steel structures, and reinforcement bar and wire used in road construction. Surface runoff, vehicle spraying, and windblown actions also affect roadside vegetation, soil, and local surface- and ground-water supplies. Although evidence of environmental loading of salt has been found during peak usage, the spring rains and thaws usually dilute the concentrations of sodium in the area where salt was applied.

Salt is also added to stabilize the soil and to provide firmness to the foundation on which highways are built. The salt acts to minimize the effects of shifting caused by changes in humidity and traffic load in the subsurface.

The quantity of salt consumed for road deicing each year is directly related to the severity or mildness of the winter weather conditions. Long-range forecasting of salt consumption in this application is extremely difficult because of the complexities in long-range forecasting of the weather. Meteorologists, however, are becoming more aware of the dynamics of certain weather phenomena that influence the climate in various parts of the world. One of these phenomena is El Niño, which is now believed to be the largest single weather influence on Earth. The mild winters of 1997 and 1998 were attributed to the El Niño effects. Highway deicing salt sales were the lowest in 1998 since about 1992, which also was an El Niño year (National Broadcast Company, El Niño facts accessed July 15, 1998, at URL <http://wxnet4.nbc.com/elnino.html>).

Distributors.—A tremendous amount of salt is marketed through various distributors, some of which specialize in markets such as agricultural and water treatment services; two sectors where the salt companies sell directly as well (table 5).

Distributor sales also include grocery wholesalers and/or retailers, institutional wholesalers, U.S. Government resale, and other wholesalers and retailers.

General Industrial.—The industrial uses of salt are diverse. They include, in descending order, oil and gas exploration, textiles and dyeing, other industrial, metal processing, pulp and paper, tanning and leather treatment, and rubber manufacture.

In oil and gas exploration, salt is an important component of drilling fluids in well drilling. It is used to flocculate and increase the density of the drilling fluid to overcome high down-well gas pressures. Whenever a drill hits a salt formation, salt is added to the drilling fluid to saturate the solution and to minimize the dissolution within the salt strata. Salt is also used to increase the set rate of concrete in cemented casings.

In textiles and dyeing, salt is used as a brine rinse to separate organic contaminants, to promote "salting out" of dyestuff precipitates, and to blend with concentrated dyes to standardize them. One of its main roles is to provide the positive ion charge to promote the absorption of negatively charged ions of dyes.

In metal processing, salt is used in concentrating uranium ore into uranium oxide (yellow cake). It is also used in processing aluminum, beryllium, copper, steel, and vanadium.

In the pulp and paper industry, salt is used to bleach wood pulp. It also is used to make sodium chlorate, which is added along with sulfuric acid and water to manufacture chlorine dioxide—an excellent oxygen-base bleaching chemical. The chlorine dioxide process, which originated in Germany after World War I, is becoming more popular because of environmental pressures to reduce or eliminate chlorinated bleaching compounds.

In tanning and leather treatment, salt is added to animal hides to inhibit microbial activity on the underside of the hides and to replace some of the moisture in the hides. In rubber manufacture, salt is used to make buna, neoprene, and white types. Salt brine and sulfuric acid are used to coagulate an emulsified latex made from chlorinated butadiene.

Agricultural Industry.—Since prehistoric times, humankind has noticed that animals satisfied their salt hunger by locating salt springs, salt licks, or playa lake salt crusts. Barnyard and grazing livestock need supplementary salt rations to maintain proper nutrition. Veterinarians advocate adding loose salt in commercially mixed feeds or in block forms sold to farmers and ranchers because salt acts as an excellent carrier for trace elements not found in the vegetation consumed by grazing livestock; selenium, sulfur, and other essential elements are commonly added to salt licks, or salt blocks, for free-choice feeding.

Food Processing.—Every person uses some quantity of salt in their food. The salt is added to the food as a flavor enhancer, preservative, binder, fermentation control additive, texture aid, and color developer, by the food processor or by the consumer through free choice. This major category is subdivided, in descending order of salt consumption, into meat packers, canning, other food processing, grain mill products, baking, and dairy.

In meat packing, salt is added to processed meats to promote

color development in bacon, ham, and other processed meat products. As a preservative, salt inhibits the growth of bacteria, which would lead to spoilage of the product. Early pioneers stored their perishable food in salt barrels for protection and preservation. Salt acts as a binder in sausages to form a binding gel composed of meat, fat, and moisture. Salt also acts as a flavor enhancer and a tenderizer.

In the dairy industry, salt is added to cheese as a fermentation-control agent and as a color and texture-control agent. The dairy subsector includes companies that manufacture creamery butter, natural and processed cheese, condensed and evaporated milk, ice cream, frozen desserts, and specialty dairy products.

In canning, salt is primarily added as a flavor enhancer and preservative. It also is used as a dehydrating agent, tenderizer, enzyme inhibitor, and carrier for other ingredients.

In baking, salt is added to control the rate of fermentation in bread dough. It also is used to strengthen the gluten (the elastic protein-water complex in certain doughs) and as a flavor enhancer, such as a topping on baked goods.

The food-processing category also contains grain mill products, which consists of milling flour and rice and manufacturing cereal breakfast food and blended or prepared flour.

In the "other food processing" category, salt is used mainly as a seasoning agent. Other food processing includes miscellaneous establishments that make food for human consumption (e.g., potato chips, pretzels) and for domestic pet consumption (e.g., dog and cat food).

Water Treatment.—Many areas of the United States have "hard" water, which contains excessive calcium and magnesium ions that contribute to the buildup of a scale or film of alkaline mineral deposits in household and industrial equipment. Commercial and residential water-softening units use salt to remove the ions causing the hardness. The sodium ions captured on a resin bed are exchanged for the calcium and magnesium ions. Periodically, the water-softening units must be recharged because the sodium ions become depleted. Salt is added and dissolved, and the brine replenishes the lost sodium ions.

Stocks

Because bulk salt is stored at many different locations, such as at the plants, warehouses, ports, and terminals, data on the quantity of salt stockpiled by the salt industry is not reliable enough to formulate accurate inventory totals; however, yearend stocks of producers were estimated to be 2 Mt and consumer inventories were estimated also to be high. Most of these inventories were imported rock salt and solar salt. Many salt producers, States, municipalities, distributors, and road-deicing contractors stockpiled additional quantities of salt in anticipation of adverse weather conditions. Deicing salt inventories were extremely large by yearend because the mild winter in the domestic snow belt did not require as much salt as had been stockpiled. For the reasons discussed above, salt stocks are assumed to be the difference between salt production and salt sold or used in calculating apparent consumption.

Transportation

Because the locations of the salt supplies are not often near consumers, transportation can become an important cost. Pumping salt brine through pipelines is an economic means of transportation, but cannot be used for dry salt. Large bulk shipments of dry salt in ocean freighters or river barges are low in cost but are restricted in points of origin and consumption. River and lake movement of salt in winter is often severely curtailed because of frozen waterways. As salt is packaged, handled, and shipped in smaller units, the costs are increased and are reflected in higher selling prices.

Transoceanic imports of salt have been increasing in some areas of the United States because they are less expensive with respect to transportation costs than that which could be purchased from domestic suppliers using rail transportation.

Dampier Salt Ltd. of Australia exceeded its export record of 72,000 t of salt by shipping a single load of 90,000 t to Japan (Industrial Minerals, 1999b). Shipping in larger vessels reduces shipping costs, which significantly adds to the price of salt. Usually the problem is that many ports are not deep enough to accommodate the larger ships.

Prices

The four types of salt that are produced have unique production, processing, and packaging factors that determine the selling prices. Generally, salt sold in bulk is less expensive than salt that has been packaged, pelletized, or pressed into blocks. Salt in brine is the least expensive salt sold because mining and processing costs are less. Vacuum pan salt is the most expensive because of the higher energy costs involved in processing and the purity of the product.

Price quotations are not synonymous with average values reported to the USGS. The quotations do not necessarily represent prices at which transactions actually took place or bid and asked prices. Yearend prices for salt are no longer quoted in Chemical Market Reporter; this information was last available for 1997. The average annual values, as collected by the USGS and listed in table 7, represent a national average value for each of the types of salt and the various product forms.

Foreign Trade

Under the Harmonized Tariff Schedule (HTS) nomenclature, imports are aggregated under one category known as "Salt (including table and denatured salt) and pure sodium chloride, whether or not in aqueous solution, seawater." The same classification also applies to exports. The HTS code for salt is 2501.00.0000. The trade tables in this report list the previous and current identification codes for salt. Although several other HTS codes pertain to various salt classifications, the United States aggregates the shipments under one code because the total of individual subclassifications fails to meet the minimum dollar requirements necessary for individual listings.

Based on U.S. Census Bureau data in 1999, the United States exported 892,000 t; this was a 22% increase compared with

that of 1998 (table 8). Salt was shipped to 67 countries through 33 U.S. customs districts; the Detroit, MI, district exported the most and represented 39% of the U.S. total (table 9). In 1999, the majority of exports, or 82% of the total, was to Canada.

Based on U.S. Census Bureau statistics, the United States imported 8.87 Mt of salt from 43 countries in 1999, which was slightly more than was imported during 1998 (table 10). Table 11 lists the imports of salt by custom districts. The quantity of imported salt was about 10 times more than that of exports. This indicates the United States reliance on salt imports. The majority of imported salt was brought into the country by foreign subsidiaries of major U.S. salt producers. Generally, imported salt can be purchased and delivered to many customers at costs lower than the comparable domestic product because production costs are lower abroad, currency exchange rates are more favorable, and ocean freight rates are less expensive than overland rail or truck rates.

World Review

Table 12 lists world salt production statistics for 111 nations based on reported and estimated information. In 1999, total world production increased by nearly 6% compared with that of 1998. The United States remained the world's leading salt-producing country, representing 22% of total world output. The structure of the U.S. salt industry has changed throughout the years. In 1970, 50 companies operated 95 salt-producing plants in the United States. Market competition, energy and labor costs, less expensive imports, currency exchange rates, and an excess of production capacity resulting in the downsizing of the industry through mergers and acquisitions reduced the size of the industry to 31 companies and 69 plants by 1999.

Most countries possess some form of salt production capability with production levels set to meet their own domestic demand requirements with additional quantities available for export. Many developing nations tend to develop their agricultural resources first to feed their population. Development of easily extractable mineral resources follows, and salt is one of the first commodities to be mined. Some countries, such as the United States, import a substantial amount of salt to meet total demand requirements because of economic factors.

Stavely Industries P.L.C., the parent corporation of British Salt Ltd., was dissolved pending the sale of its two divisions that included British Salt. British Salt was the largest salt company in the United Kingdom with 800,000 t of vacuum pan salt capacity among its operations in Middlewich, Cheshire, England (Industrial Minerals, 1999a).

Outlook

Supplies of salt are more than adequate to meet any surge in demand for the foreseeable future. The new rock salt mine in New York that is scheduled to be in production in 2000 and the reopening of the rock salt mine in Michigan in 1998 should increase domestic rock salt production and cause rock salt imports to decline.

References Cited

- Chemical Market Reporter, 1999, R & H inks purchase of Morton International: Chemical Market Reporter, v. 255, no. 26, June 28, p. 5.
Chemical Week, 1999a, Salt addition: Chemical Week, v. 161, no. 36, September 29, p. 54.
———1999b, Warm winters melt the market: Chemical Week, v. 161, no. 22, June 9, p. 38-39.
Food Chemicals Codex, 1963, Sodium chloride: Food Chemicals Codex, National Academy of Science, first ed., p. 613.
Industrial Minerals, 1999a, British Salt for sale as Stavely dissolves: Industrial Minerals, no. 384, September, p. 13-14.
———1999b, Dampier Salt breaks salt export record: Industrial Minerals, no. 376, January, p. 9.
———1999c, Morton Salt merges with Rohm and Haas: Industrial Minerals, no. 379, April, p. 118.

GENERAL SOURCES OF INFORMATION

U.S. Geological Survey Publications

- Evaporites and brines. Ch. in United States Mineral Resources, U.S. Geological Survey Professional Paper 820, 1973.
Salt. Ch. in Mineral Commodity Summaries, annual.¹
Salt. Ch. in Minerals Yearbook, annual.¹

Other

- Handbook of World Salt Resources. S.J. Lefond, Plenum Press, 1969.
Salt. Ch. in Canadian Minerals Yearbook, annual.
Salt. Ch. in Industrial Minerals and Rocks, Society of Mining, Metallurgy, and Exploration, Inc., 6th ed., D.D. Carr, Sr. ed., 1994.
Salt. Ch. in Mineral Facts and Problems, U.S. Bureau of Mines Bulletin 675, 1985.
Salt, in Mining Engineering, annual commodity review.
Sodium Chloride. American Chemical Society Monograph, No. 145, ed. by D.W. Kaufmann, Reinhold Pub. Corp., 1960.
Solution Mining Research Institute. The Chlorine Institute.
The Material Flow of Salt, U.S. Bureau of Mines Information Circular 9343, 1993.
The Salt Institute.

¹Prior to January 1996, published by the U.S. Bureau of Mines.

TABLE 1
SALIENT SALT STATISTICS 1/

(Thousand metric tons and thousand dollars)

| | 1995 | 1996 | 1997 | 1998 | 1999 |
|---------------------------|-------------|-------------|------------|------------|-------------|
| United States: | | | | | |
| Production total: 2/ | 42,100 | 42,200 | 41,400 | 41,200 | 44,900 |
| Brine | 20,600 | 21,500 | 21,400 | 21,100 | 22,700 |
| Rock | 14,000 | 13,500 | 12,900 | 12,900 | 14,400 |
| Solar | 3,540 | 3,270 | 3,170 | 3,190 | 3,580 |
| Vacuum and open pans | 3,950 | 3,920 | 3,980 | 4,040 | 4,190 |
| Sold or used by producers | 40,800 | 42,900 | 40,600 | 40,800 | 44,400 |
| Value | \$1,000,000 | \$1,060,000 | \$993,000 | \$986,000 | \$1,110,000 |
| Exports | 670 | 869 | 748 | 731 | 892 |
| Value | \$34,400 | \$39,300 | \$38,000 | \$35,200 | \$37,000 |
| Imports for consumption | 7,090 | 10,600 | 9,160 | 8,770 | 8,870 |
| Value | \$114,000 | \$167,000 | \$148,000 | \$145,000 | \$137,000 |
| Consumption, apparent 3/ | 47,200 | 52,600 | 49,000 | 48,800 | 52,400 |
| Consumption, reported | 46,500 | 52,800 | 49,500 | 44,200 | 50,000 |
| World: Production | 199,000 r/ | 203,000 r/ | 206,000 r/ | 198,000 r/ | 209,000 e/ |

e/ Estimated. r/ Revised.

1/ Data are rounded to no more than three significant digits.

2/ Excludes Puerto Rico.

3/ Sold or used plus imports minus exports.

TABLE 2
SALT PRODUCED IN THE UNITED STATES, BY TYPE AND PRODUCT FORM 1/

(Thousand metric tons)

| Product form | Vacuum and open pans | | | | Total |
|--------------------|----------------------|-------|--------|--------|--------|
| | Vacuum and open pans | Solar | Rock | Brine | |
| 1998 | | | | | |
| Bulk | 790 | 2,020 | 12,400 | 21,100 | 36,300 |
| Compressed pellets | 1,190 | 289 | XX | XX | 1,480 |
| Packaged | 1,830 | 752 | 447 | XX | 3,030 |
| Pressed blocks | 228 | 130 | 73 | XX | 431 |
| Total | 4,040 | 3,190 | 12,900 | 21,100 | 41,200 |
| 1999 | | | | | |
| Bulk | 816 | 1,910 | 13,800 | 22,700 | 39,300 |
| Compressed pellets | 1,270 | 346 | XX | XX | 1,620 |
| Packaged | 1,900 | 1,160 | 549 | XX | 3,610 |
| Pressed blocks | 208 | 159 | 72 | XX | 439 |
| Total | 4,190 | 3,580 | 14,400 | 22,700 | 44,900 |

XX Not applicable.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

TABLE 3
SALT SOLD OR USED IN THE UNITED STATES, BY TYPE AND PRODUCT FORM 1/ 2/

(Thousand metric tons and thousand dollars)

| Product form | Vacuum and open pans | | Solar | | Rock | | Brine | | Total | |
|-------------------------|----------------------|---------|----------|---------|----------|---------|----------|---------|----------|-----------|
| | Quantity | Value | Quantity | Value | Quantity | Value | Quantity | Value | Quantity | Value |
| 1998: | | | | | | | | | | |
| Bulk | 788 | 39,100 | 1,810 | 30,300 | 12,200 | 250,000 | 21,100 | 125,000 | 35,900 | 445,000 |
| Compressed pellets | 1,200 | 154,000 | 287 | 30,600 | XX | XX | XX | XX | 1,490 | 185,000 |
| Packaged: | | | | | | | | | | |
| Less-than-5-pound units | 217 | NA | 3 | NA | 1 | NA | XX | XX | 221 | XX |
| More-than-5-pound units | 1,600 | NA | 716 | NA | 446 | NA | XX | XX | 2,760 | XX |
| Total | 1,820 | 245,000 | 719 | 44,800 | 447 | 26,000 | XX | XX | 2,980 | 315,000 |
| Pressed blocks: | | | | | | | | | | |
| For livestock | 104 | NA | 121 | NA | 68 | NA | XX | XX | 293 | XX |
| For water treatment | 131 | NA | 7 | NA | 7 | NA | XX | XX | 145 | XX |
| Total | 235 | 22,300 | 128 | 11,600 | 75 | 7,380 | XX | XX | 437 | 41,300 |
| Grand total | 4,040 | 460,000 | 2,940 | 117,000 | 12,700 | 284,000 | 21,100 | 125,000 | 40,800 | 986,000 |
| 1999: | | | | | | | | | | |
| Bulk | 816 | 38,000 | 1,410 | 38,200 | 14,100 | 294,000 | 22,700 | 151,000 | 39,000 | 521,000 |
| Compressed pellets | 1,270 | 162,000 | 299 | 33,300 | XX | XX | XX | XX | 1,570 | 196,000 |
| Packaged: | | | | | | | | | | |
| Less-than-5-pound units | 232 | NA | 3 | NA | 1 | NA | XX | XX | 236 | XX |
| More-than-5-pound units | 1,650 | NA | 954 | NA | 576 | NA | XX | XX | 3,180 | XX |
| Total | 1,890 | 247,000 | 957 | 67,100 | 577 | 36,100 | XX | XX | 3,420 | 350,000 |
| Pressed blocks: | | | | | | | | | | |
| For livestock | 88 | NA | 118 | NA | 68 | NA | XX | XX | 274 | XX |
| For water treatment | 120 | NA | 8 | NA | 6 | NA | XX | XX | 134 | XX |
| Total | 209 | 19,000 | 126 | 11,800 | 73 | 7,280 | XX | XX | 408 | 38,100 |
| Grand total | 4,190 | 466,000 | 2,790 | 150,000 | 14,700 | 337,000 | 22,700 | 151,000 | 44,400 | 1,110,000 |

NA Not available. XX Not applicable.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ As reported at salt production locations, the term "sold or used" indicates that some salt, usually salt brine, is not sold but is used for captive purposes by plant or company. Because data do not include salt imported, purchased, and/or sold from inventory from regional distribution centers, salt sold or used by type may differ from totals shown in tables 5 and 6, which are derived from company totals.

TABLE 4
SALT SOLD OR USED BY PRODUCERS IN THE UNITED STATES, BY STATE 1/ 2/

(Thousand metric tons and thousand dollars)

| State | 1998 | | 1999 | |
|-------------------------|----------|---------|----------|-----------|
| | Quantity | Value | Quantity | Value |
| Kansas | 3,090 | 120,000 | 2,780 | 115,000 |
| Louisiana | 14,900 | 173,000 | 16,500 | 193,000 |
| New York | 4,120 | 198,000 | 4,220 | 209,000 |
| Texas | 9,420 | 83,900 | 10,200 | 97,500 |
| Utah | 1,770 | 68,100 | 1,890 | 92,000 |
| Other Eastern States 3/ | 6,060 | 276,000 | 7,610 | 323,000 |
| Other Western States 4/ | 1,450 | 66,000 | 1,210 | 75,800 |
| Total | 40,800 | 986,000 | 44,400 | 1,110,000 |
| Puerto Rico e/ | 45 | 1,500 | 45 | 1,500 |

e/ Estimated.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ The term "sold or used" indicates that some salt, usually salt brine, is not sold but is used for captive purposes by plant or company.

3/ Includes Alabama, Michigan, Ohio, Tennessee, and West Virginia.

4/ Includes Arizona, California, Nevada, New Mexico, and Oklahoma.

TABLE 5
DISTRIBUTION OF DOMESTIC AND IMPORTED SALT BY PRODUCERS IN THE UNITED STATES
BY END USE AND TYPE 1/ 2/

(Thousand metric tons)

| End use | Standard industrial classification | Vacuum and open pans | | Solar | | Rock | | Brine | | Grand total 3/ | |
|--|------------------------------------|----------------------|-------|-------|------|-------|--------|--------|--------|----------------|--------|
| | | 1998 | 1999 | 1998 | 1999 | 1998 | 1999 | 1998 | 1999 | 1998 | 1999 |
| Chemical: | | | | | | | | | | | |
| Chloralkali producers | 2812 | 24 | 33 | 349 | 374 | 948 | 841 | 19,400 | 20,200 | 20,700 | 21,400 |
| Other chemical | 28 (excludes 2812, 2899) | 285 | 255 | 533 | 233 | 426 | 392 | 114 | 115 | 1,360 | 996 |
| Total | | 310 | 288 | 882 | 608 | 1,370 | 1,230 | 19,500 | 20,300 | 22,000 | 22,400 |
| Food-processing industry: | | | | | | | | | | | |
| Meat packers | 201 | 272 | 268 | 47 | 50 | 122 | 87 | -- | -- | 440 | 405 |
| Dairy | 202 | 116 | 119 | 7 | 6 | 2 | 2 | -- | -- | 125 | 127 |
| Canning | 2091, 203 | 175 | 149 | 49 | 43 | 49 | 32 | 1 | (4/) | 275 | 225 |
| Baking | 205 | 200 | 213 | 4 | 7 | 14 | 15 | -- | -- | 219 | 234 |
| Grain mill products | 204 (excludes 2047) | 94 | 95 | 5 | 6 | 45 | 21 | -- | -- | 144 | 121 |
| Other food processing | 206-208, 2047, 2099 | 383 | 448 | 63 | 70 | 45 | 49 | 1 | 2 | 492 | 569 |
| Total | | 1,240 | 1,290 | 175 | 181 | 277 | 206 | 2 | 2 | 1,690 | 1,680 |
| General industrial: | | | | | | | | | | | |
| Textiles and dyeing | 22 | 173 | 158 | 57 | 55 | 15 | 14 | 6 | 9 | 250 | 235 |
| Metal processing | 33, 34, 35, 37 | 8 | 8 | 17 | 14 | 145 | 131 | -- | (4/) | 170 | 153 |
| Rubber | 2822, 30 (excludes 3079) | 4 | 4 | 1 | 1 | 2 | 1 | 61 | 66 | 68 | 72 |
| Oil | 13, 29 | 33 | 27 | 200 | 174 | 53 | 42 | 2,040 | 2,190 | 2,320 | 2,430 |
| Pulp and paper | 26 | 14 | 15 | 53 | 48 | 30 | 30 | 17 | 19 | 115 | 112 |
| Tanning and/or leather | 311 | 10 | 21 | 28 | 32 | 55 | 50 | -- | -- | 93 | 103 |
| Other industrial | -- | 96 | 99 | 51 | 46 | 71 | 54 | (4/) | (4/) | 219 | 199 |
| Total | | 338 | 331 | 408 | 370 | 370 | 322 | 2,120 | 2,280 | 3,240 | 3,300 |
| Agricultural: | | | | | | | | | | | |
| Feed retailers and/or dealers mixers | 5159 | 350 | 349 | 386 | 383 | 450 | 478 | -- | -- | 1,190 | 1,210 |
| Feed manufacturers | 2048 | 73 | 60 | 122 | 121 | 341 | 353 | -- | -- | 536 | 533 |
| Direct-buying end user | 02 | 6 | 5 | 20 | 19 | 193 | 63 | -- | -- | 219 | 87 |
| Total | | 430 | 413 | 527 | 523 | 984 | 894 | -- | -- | 1,940 | 1,830 |
| Water treatment: | | | | | | | | | | | |
| Government (Federal, State, local) | 2899 | 12 | 17 | 79 | 95 | 85 | 315 | 2 | 4 | 179 | 431 |
| Commercial or other | 2899 | 64 | 129 | 198 | 217 | 88 | 119 | 3 | 2 | 353 | 468 |
| Total | | 76 | 147 | 277 | 312 | 173 | 434 | 5 | 6 | 531 | 899 |
| Ice control and/or stabilization: | | | | | | | | | | | |
| Government (Federal, State, local) | 9621 | 7 | 1 | 483 | 594 | 8,200 | 12,900 | 2 | (4/) | 8,690 | 13,500 |
| Commercial or other | -- | 37 | 6 | 87 | 53 | 671 | 1,760 | -- | -- | 794 | 1,820 |
| Total | | 44 | 7 | 569 | 647 | 8,870 | 14,600 | 2 | (4/) | 9,490 | 15,300 |

See footnotes at end of table.

TABLE 5--Continued
DISTRIBUTION OF DOMESTIC AND IMPORTED SALT BY PRODUCERS IN THE UNITED STATES
BY END USE AND TYPE 1/ 2/

(Thousand metric tons)

| End use | Standard industrial classification | Vacuum and open pans | | Solar | | Rock | | Brine | | Grand total 3/ | | |
|---|------------------------------------|----------------------|-------|-------|-------|--------|--------|--------|--------|----------------|--------|--------|
| | | 1998 | 1999 | 1998 | 1999 | 1998 | 1999 | 1998 | 1999 | 1998 | 1999 | |
| Distributors: | | | | | | | | | | | | |
| Agricultural distribution | 5191 | 92 | 90 | 117 | 116 | 153 | 48 | (4/) | r/ | (4/) | 362 | 254 |
| Grocery wholesalers and/or retailers | 514, 54 | 525 | 529 | 223 | 242 | 59 | 60 | -- | -- | -- | 807 | 831 |
| Institutional wholesalers and end users | 58, 70 | 166 | 171 | 47 | 50 | 31 | 41 | (4/) | (4/) | (4/) | 244 | 263 |
| Water-conditioning distribution | 7399 | 161 | 163 | 408 | 410 | 29 | 27 | -- | -- | -- | 598 | 600 |
| U.S. Government resale | 9199 | (4/) | (4/) | 1 | 1 | 21 | 1 | -- | -- | -- | 22 | 2 |
| Other wholesalers and/or retailers | 5251 | 705 | 774 | 679 | 737 | 1,070 | 404 | (4/) | (4/) | (4/) | 2,460 | 1,920 |
| Total | | 1,650 | 1,730 | 1,480 | 1,560 | 1,360 | 582 | (4/) | (4/) | (4/) | 4,490 | 3,870 |
| Other 5/ | | 137 | 116 | 110 | 54 | 472 | 394 | 47 | 96 | 47 | 766 | 663 |
| Grand total | | 4,220 | 4,320 | 4,430 | 4,250 | 13,900 | 18,700 | 21,600 | 22,700 | 21,600 | 44,200 | 50,000 |

r/ Revised. -- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ The quality of imports included in the total for each type of salt is the amount reported by the U.S. salt industry, not the quantity reported by the U.S. Census Bureau that appears in tables 1, 11, and 12.

3/ Because data include salt imported, produced, and/or sold from inventory from regional distribution centers, salt sold or used by type may differ from totals shown in tables 1, 3, and 4, which are derived from plant reports at salt production locations. Data may differ from totals shown in table 6 because of changes in inventory and/or incomplete data reporting.

4/ Less than 1/2 unit.

5/ Includes exports.

TABLE 6
DISTRIBUTION OF DOMESTIC AND IMPORTED EVAPORATED AND ROCK SALT
IN THE UNITED STATES, BY DESTINATION 1/ 2/

(Thousand metric tons)

| Destination | 1998 | | | | 1999 | | | |
|----------------------|----------------------------|-------|--------|--------|----------------------------|-------|--------|--------|
| | Evaporated | | | Total | Evaporated | | | Total |
| | Vacuum and open pans | Solar | Rock | | Vacuum and open pans | Solar | Rock | |
| Alabama | 72 | 1 | 89 | 162 | 70 | 1 | 78 | 149 |
| Alaska | 4 | 10 | (3/) | 14 | 2 | 5 | (3/) | 7 |
| Arizona | 12 | 91 | 2 | 105 | 13 | 93 | 1 | 107 |
| Arkansas | 50 | 2 | 57 | 109 | 49 | 2 | 55 | 106 |
| California | 173 | 658 | 2 | 834 | 185 | 647 | 2 | 835 |
| Colorado | 16 | 90 | 122 | 228 | 16 | 79 | 107 | 202 |
| Connecticut | 11 | 46 | 74 | 131 | 14 | 134 | 77 | 224 |
| Delaware | 4 | 12 | (3/) | 16 | 4 | 12 | 3 | 19 |
| District of Columbia | (3/) | 1 | 1 | 2 | 1 | 1 | 20 | 21 |
| Florida | 71 | 180 | 8 | 259 | 70 | 190 | 8 | 268 |
| Georgia | 90 | 93 | 57 | 240 | 94 | 100 | 54 | 248 |
| Hawaii | 1 | 2 | -- | 3 | 1 | 3 | (3/) | 3 |
| Idaho | 13 | 104 | 4 | 121 | 16 | 74 | 39 | 129 |
| Illinois | 315 | 163 | 1,220 | 1,690 | 338 | 127 | 1,890 | 2,360 |
| Indiana | 224 | 104 | 486 | 814 | 241 | 118 | 714 | 1,070 |
| Iowa | 161 | 75 | 490 | 726 | 161 | 74 | 473 | 708 |
| Kansas | 94 | 38 | 614 | 746 | 93 | 41 | 722 | 856 |
| Kentucky | 63 | 5 | 333 | 401 | 64 | 6 | 437 | 507 |
| Louisiana | 64 | 1 | 538 | 603 | 59 | 1 | 536 | 597 |
| Maine | 12 | 5 | 171 | 188 | 13 | 7 | 163 | 182 |
| Maryland | 60 | 38 | 71 | 168 | 63 | 61 | 175 | 298 |
| Massachusetts | 37 | 74 | 80 | 191 | 37 | 152 | 208 | 398 |
| Michigan | 252 | 27 | 1,040 | 1,320 | 302 | 36 | 1,720 | 2,050 |
| Minnesota | 154 | 200 | 627 | 980 | 143 | 193 | 523 | 859 |
| Mississippi | 37 | (3/) | 197 | 235 | 36 | (3/) | 213 | 249 |
| Missouri | 131 | 32 | 415 | 578 | 133 | 35 | 587 | 755 |
| Montana | 1 | 41 | 1 | 42 | 1 | 34 | 1 | 36 |
| Nebraska | 80 | 44 | 225 | 349 | 78 | 44 | 163 | 285 |
| Nevada | 2 | 235 | 18 | 255 | 3 | 262 | 15 | 280 |
| New Hampshire | 10 | 54 | 54 | 117 | 11 | 32 | 173 | 217 |
| New Jersey | 119 | 50 | 46 | 215 | 110 | 63 | 51 | 224 |
| New Mexico | 12 | 94 | (3/) | 107 | 11 | 76 | 2 | 89 |
| New York | 239 | 63 | 2,130 | 2,430 | 259 | 78 | 2,430 | 2,770 |
| North Carolina | 128 | 74 | 64 | 266 | 126 | 89 | 74 | 289 |
| North Dakota | 6 | 21 | 12 | 39 | 7 | 23 | 10 | 41 |
| Ohio | 405 | 43 | 1,130 | 1,580 | 413 | 58 | 2,220 | 2,700 |
| Oklahoma | 45 | 22 | 96 | 163 | 41 | 19 | 98 | 157 |
| Oregon | 23 | 154 | (3/) | 178 | 21 | 145 | 1 | 167 |
| Pennsylvania | 197 | 93 | 767 | 1,060 | 181 | 107 | 1,490 | 1,780 |
| Rhode Island | 7 | 58 | 8 | 73 | 7 | 70 | 41 | 118 |
| South Carolina | 32 | 13 | 5 | 50 | 32 | 11 | 6 | 50 |
| South Dakota | 25 | 55 | 37 | 117 | 24 | 53 | 40 | 117 |
| Tennessee | 112 | 4 | 562 | 678 | 110 | 5 | 490 | 605 |
| Texas | 224 | 136 | 179 | 538 | 206 | 125 | 182 | 513 |
| Utah | 10 | 415 | 20 | 445 | 9 | 336 | 96 | 442 |
| Vermont | 5 | 3 | 207 | 215 | 6 | 2 | 275 | 284 |
| Virginia | 86 | 40 | 135 | 261 | 83 | 71 | 278 | 432 |
| Washington | 25 | 470 | 6 | 501 | 23 | 171 | 2 | 196 |
| West Virginia | 15 | 4 | 129 | 148 | 15 | 5 | 225 | 245 |
| Wisconsin | 206 | 124 | 1,020 | 1,350 | 217 | 125 | 1,240 | 1,580 |
| Wyoming | (3/) | 24 | 3 | 27 | (3/) | 23 | 1 | 25 |
| Other 4/ | 86 | 39 | 339 | 465 | 107 | 31 | 291 | 428 |
| Total 5/ | 4,220 | 4,430 | 13,900 | 22,500 | 4,320 | 4,250 | 18,700 | 27,300 |

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Each salt type includes domestic and imported quantities. Brine is excluded because brine is not shipped out of State.

3/ Less than 1/2 unit.

4/ Includes shipments to overseas areas administered by the United States, Puerto Rico, exports, and some shipments to unspecified destinations.

5/ Because data include salt imported, purchased, and/or sold from inventory from regional distribution centers, evaporated and rock salt distributed by State may differ from totals shown in tables 1 and 3, which are derived from plant reports at salt production locations. Data may differ from totals shown in table 5 because of changes in inventory and/or incomplete data reporting.

TABLE 7
 AVERAGE VALUE OF SALT, BY PRODUCT FORM AND TYPE 1/

(Dollars per metric ton)

| Product form | Vacuum and open pans | Solar | Rock | Brine |
|--------------------|----------------------------|---------|---------|--------|
| 1998: | | | | |
| Bulk | \$49.58 | \$16.77 | \$20.57 | \$5.93 |
| Compressed pellets | 128.11 | 106.44 | XX | XX |
| Packaged | 134.54 | 62.36 | 58.23 | XX |
| Average 2/ | 114.93 | 37.56 | 21.90 | 5.93 |
| Pressed blocks | 94.67 | 91.07 | 98.30 | XX |
| 1999: | | | | |
| Bulk | 46.56 | 27.17 | 20.91 | 6.65 |
| Compressed pellets | 127.49 | 111.36 | XX | XX |
| Packaged | 130.88 | 70.15 | 62.60 | XX |
| Average 2/ | 112.49 | 52.08 | 22.55 | 6.65 |
| Pressed blocks | 91.16 | 93.59 | 99.19 | XX |

XX Not applicable.

1/ Net selling value, f.o.b. plant, excluding container costs.

2/ Salt value data previously reported were an aggregate value per ton of bulk, compressed pellets, and packaged salt. For time series continuity, an average of these three types of product forms is presented that is based on the aggregated values and quantities of the product form for each type of salt shown in table 3.

TABLE 8
U.S. EXPORTS OF SALT, BY COUNTRY 1/

(Thousand metric tons and thousand dollars)

| Country | 1998 | | 1999 | |
|----------------------|----------|----------|----------|----------|
| | Quantity | Value 2/ | Quantity | Value 2/ |
| Australia | 1 | 127 | (3/) | 17 |
| Bahamas, The | 1 | 153 | (3/) | 122 |
| Bahrain | 1 | 440 | 1 | 191 |
| Belgium | 4 | 326 | (3/) | 73 |
| Canada | 533 | 19,900 | 730 | 23,200 |
| Chile | 6 | 247 | (3/) | 58 |
| China | (3/) | 102 | 2 | 345 |
| Colombia | 1 | 323 | 1 | 214 |
| Costa Rica | (3/) | 33 | 1 | 74 |
| El Salvador | 1 | 171 | 1 | 192 |
| France | 1 | 120 | (3/) | 29 |
| Germany | 1 | 189 | (3/) | 38 |
| Honduras | 2 | 325 | 4 | 370 |
| Hong Kong | 1 | 96 | 1 | 139 |
| Israel | (3/) | 24 | 1 | 66 |
| Italy | 3 | 170 | 2 | 66 |
| Japan | 1 | 706 | 4 | 584 |
| Kuwait | 1 | 194 | (3/) | 96 |
| Malaysia | 3 | 78 | 1 | 232 |
| Mexico | 87 | 4,070 | 83 | 4,760 |
| Netherlands | 3 | 380 | 1 | 49 |
| Norway | -- | -- | 1 | 36 |
| Panama | 25 | 519 | 27 | 711 |
| Philippines | 1 | 64 | (3/) | 61 |
| Saudi Arabia | 24 | 2,250 | 10 | 883 |
| Singapore | (3/) | 33 | 2 | 113 |
| Sweden | 1 | 36 | -- | -- |
| Taiwan | 1 | 283 | 3 | 752 |
| Thailand | 3 | 100 | -- | -- |
| Togo | 4 | 43 | -- | -- |
| United Arab Emirates | 1 | 363 | (3/) | 185 |
| United Kingdom | 4 | 380 | 10 | 836 |
| Venezuela | 10 | 1,230 | 1 | 655 |
| Other | 6 | 1,800 | 5 | 1,830 |
| Total | 731 | 35,200 | 892 | 37,000 |

-- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Free alongside ship (f.a.s.) value at U.S. ports.

3/ Less than 1/2 unit; included with "Other."

Source: U.S. Census Bureau.

TABLE 9
U.S. EXPORTS OF SALT, BY CUSTOMS DISTRICT 1/

(Thousand metric tons and thousand dollars)

| District | 1998 | | 1999 | |
|--------------------|----------|----------|----------|----------|
| | Quantity | Value 2/ | Quantity | Value 2/ |
| Baltimore, MD | 4 | 368 | 2 | 169 |
| Boston, MA | -- | -- | (3/) | 14 |
| Buffalo, NY | 71 | 4,420 | 25 | 2,870 |
| Charleston, SC | 2 | 117 | 2 | 321 |
| Chicago, IL | 1 | 311 | (3/) | 92 |
| Cleveland, OH | 284 | 4,890 | 209 | 3,700 |
| Columbia-Snake, OR | (3/) | 58 | -- | -- |
| Detroit, MI | 57 | 3,310 | 347 | 8,530 |
| Duluth, MN | (3/) | 29 | (3/) | 3 |
| El Paso, TX | 1 | 73 | 2 | 121 |
| Great Falls, MT | 2 | 121 | 6 | 265 |
| Honolulu, HI | -- | -- | (3/) | 5 |
| Houston, TX | 30 | 4,170 | 12 | 2,000 |
| Laredo, TX | 73 | 3,180 | 74 | 4,040 |
| Los Angeles, CA | 14 | 1,940 | 8 | 2,100 |
| Miami, FL | 2 | 556 | 2 | 381 |
| Mobile, AL | 1 | 62 | 1 | 78 |
| New Orleans, LA | 30 | 1,030 | 30 | 1,110 |
| New York, NY | 14 | 1,220 | 8 | 705 |
| Nogales, AZ | 3 | 164 | 3 | 99 |
| Norfolk, VA | 3 | 206 | 2 | 419 |
| Ogdensburg, NY | 10 | 794 | 25 | 657 |
| Pembina, ND | 2 | 359 | 6 | 532 |
| Philadelphia, PA | (3/) | 109 | (3/) | 407 |
| Port Arthur, TX | -- | -- | (3/) | 33 |
| Portland, ME | (3/) | 7 | (3/) | 25 |
| St. Albans, VT | (3/) | 37 | 1 | 64 |
| St. Louis, MO | 4 | 60 | (3/) | 10 |
| San Diego, CA | 10 | 655 | 4 | 491 |
| San Francisco, CA | 18 | 405 | 12 | 687 |
| San Juan, PR | (3/) | 14 | (3/) | 18 |
| Savannah, GA | 1 | 228 | (3/) | 294 |
| Seattle, WA | 10 | 532 | 13 | 490 |
| Tampa, FL | 1 | 300 | (3/) | 73 |
| Other 4/ | 80 | 5,480 | 98 | 6,150 |
| Total | 731 | 35,200 | 892 | 37,000 |

-- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Free alongside ship (f.a.s.) value at U.S. ports.

3/ Less than 1/2 unit.

4/ Unknown, but assumed to be rail and/or truck shipments to Canada through various points of departure.

Source: U.S. Census Bureau.

TABLE 10
U.S. IMPORTS FOR CONSUMPTION OF SALT, BY COUNTRY 1/

(Thousand metric tons and thousand dollars)

| Country | 1998 | | 1999 | |
|------------------------|----------|----------|----------|----------|
| | Quantity | Value 2/ | Quantity | Value 2/ |
| Australia | 104 | 1,050 | 27 | 617 |
| Bahamas, The | 885 | 11,400 | 946 | 10,400 |
| Bahrain | -- | -- | 5 | 59 |
| Bosnia and Herzegovina | -- | -- | 26 | 411 |
| Brazil | 158 | 1,700 | 101 | 940 |
| Canada | 4,180 | 77,300 | 3,810 | 66,400 |
| Chile | 1,260 | 16,600 | 1,660 | 20,600 |
| China | 2 | 592 | 1 | 715 |
| Dominican Republic | 123 | 976 | 32 | 403 |
| Egypt | 44 | 1,010 | 143 | 1,100 |
| France | 2 | 1,080 | 5 | 1,240 |
| Germany | (3/) | 553 r/ | 1 | 681 |
| Ireland | 14 | 243 | 50 | 347 |
| Israel | 2 | 169 | (3/) | 144 |
| Italy | 4 | 216 | 15 | 261 |
| Japan | 1 | 134 | 1 | 167 |
| Korea, Republic of | 3 | 606 | 1 | 579 |
| Mexico | 1,230 | 19,500 | 1,250 | 19,300 |
| Namibia | 13 | 198 | 12 | 184 |
| Netherlands | 168 | 5,240 | 113 | 3,760 |
| Netherlands Antilles | 163 | 2,850 | 101 | 1,690 |
| Peru | 295 | 2,190 | 538 | 4,280 |
| Spain | 6 | 127 | 2 | 40 |
| Sweden | (3/) | 65 | 2 | 1,760 |
| United Kingdom | 32 | 269 | 8 | 163 |
| Venezuela | 75 | 609 | 18 | 148 |
| Other | (3/) r/ | 178 r/ | 3 | 389 |
| Total | 8,770 | 145,000 | 8,870 | 137,000 |

r/ Revised. -- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Customs value only.

3/ Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 11
U.S. IMPORTS OF SALT, BY CUSTOM DISTRICTS 1/

(Thousand metric tons and thousand dollars)

| District | 1998 | | 1999 | |
|-----------------------|----------|-----------|----------|----------|
| | Quantity | Value 2/ | Quantity | Value 2/ |
| Anchorage, AK | 16 | 463 | 8 | 186 |
| Baltimore, MD | 458 | 7,310 | 723 | 10,500 |
| Boston, MA | 494 | 6,390 | 669 | 6,930 |
| Buffalo, NY | 410 | 8,150 | 499 | 9,110 |
| Charleston, SC | 125 | 3,400 | 142 | 3,520 |
| Chicago, IL | 866 | 17,600 | 615 | 10,900 |
| Cleveland, OH | 236 | 5,130 | 271 | 5,920 |
| Columbia-Snake, OR | 348 | 4,650 | 247 | 3,420 |
| Dallas-Fort Worth, TX | -- | -- | (3/) | 110 |
| Detroit, MI | 989 | 18,100 r/ | 795 | 15,800 |
| Duluth, MN | 154 | 2,330 | 77 | 885 |
| El Paso, TX | -- | -- | 1 | 179 |
| Great Falls, MT | (3/) | 28 | (3/) | 26 |
| Houston-Galveston, TX | (3/) | 207 | (3/) | 165 |
| Laredo, TX | 1 | 108 | 1 | 159 |
| Los Angeles, CA | 109 | 2,280 | 94 | 2,080 |
| Miami, FL | (3/) | 15 | (3/) | 128 |
| Milwaukee, WI | 1,010 | 19,000 | 930 | 16,200 |
| Minneapolis, MN | (3/) | 12 | (3/) | 18 |
| Mobile, AL | -- | -- | (3/) | 14 |
| New Orleans, LA | 294 | 5,360 | 214 | 2,930 |
| New York, NY | 914 | 13,500 | 703 | 9,150 |
| Nogales, AZ | -- | -- | (3/) | 6 |
| Norfolk, VA | 53 | 699 | 114 | 1,180 |
| Ogdensburg, NY | 97 | 1,450 | 143 | 2,890 |
| Pembina, ND | 16 | 626 | 3 | 289 |
| Philadelphia, PA | 285 | 4,050 | 539 | 6,920 |
| Portland, ME | 903 | 9,640 | 915 | 10,600 |
| Providence, RI | 158 | 1,910 | 393 | 4,220 |
| St. Albans, VT | 7 | 258 | 8 | 839 |
| St. Louis, MO | (3/) | 17 | (3/) | 15 |
| San Diego, CA | (3/) | 33 | 1 | 72 |
| San Francisco, CA | (3/) | 80 | (3/) | 110 |
| San Juan, PR | 8 | 254 | 8 | 207 |
| Savannah, GA | 124 | 1,750 | 78 | 1,080 |
| Seattle, WA | 324 | 4,330 | 342 | 5,200 |
| Tampa, FL | 248 | 3,270 | 261 | 3,460 |
| Washington, DC | -- | -- | (3/) | 3 |
| Wilmington, NC | 122 | 2,410 | 73 | 1,430 |
| Total | 8,770 | 145,000 | 8,870 | 137,000 |

r/ Revised. -- Zero.

1/ Data are rounded to no more than three significant digits; may not add to totals shown.

2/ Customs value only.

3/ Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 12
SALT: WORLD PRODUCTION, BY COUNTRY 1/ 2/

(Thousand metric tons)

| Country 3/ | 1995 | 1996 | 1997 | 1998 | 1999 e/ |
|--|--------|----------|-----------|-----------|-----------|
| Afghanistan (rock salt) e/ | 13 | 13 | 13 | 13 | 13 |
| Albania e/ | 10 | 10 | 10 | 10 | 10 |
| Algeria (brine and sea salt) | 178 r/ | 178 r/ | 137 r/ | 172 r/ | 175 |
| Angola e/ | 30 | 30 | 30 | 30 | 30 |
| Argentina: | | | | | |
| Rock salt | (4/) | -- | (4/) | (4/ r/ e/ | (4/) |
| Other salt | 1,009 | 1,096 | 841 r/ | 850 r/ e/ | 850 |
| Total | 1,009 | 1,096 | 841 r/ | 850 r/ e/ | 850 |
| Armenia | 33 | 26 | 26 e/ | 25 r/ | 27 5/ |
| Australia (brine salt and marine salt) | 8,148 | 7,905 | 8,801 r/ | 8,879 | 10,003 5/ |
| Austria: e/ | | | | | |
| Brine salt | 523 5/ | 367 | 400 | 500 | 400 |
| Rock salt | 1 | 1 | 1 | 1 | 1 |
| Total | 524 | 368 | 401 | 501 | 401 |
| Azerbaijan e/ | 3 r/ | 3 r/ | 3 r/ 5/ | 6 r/ 5/ | 6 |
| Bahamas, The e/ | 900 | 900 | 900 | 900 | 900 |
| Bangladesh (marine salt) e/ 6/ | 350 | 350 | 350 | 350 | 350 |
| Belarus | 1 | 1 | 1 | 1 e/ | 1 |
| Benin (marine salt) e/ | (4/) | (4/) | -- | -- | -- |
| Bolivia | 5 | (4/) | 1 r/ | 5 5/ | 4 |
| Bosnia and Herzegovina e/ | 50 | 50 | 50 | 50 | 50 |
| Botswana 7/ | 208 | 94 | 185 | 215 r/ | 200 |
| Brazil: | | | | | |
| Brine salt | 4,460 | 3,870 | 5,064 | 5,353 r/ | 5,400 |
| Rock salt | 1,340 | 1,514 | 1,452 | 1,484 r/ | 1,500 |
| Total | 5,800 | 5,384 | 6,516 | 6,837 r/ | 6,900 |
| Bulgaria | 1,500 | 1,600 | 1,600 r/ | 2,400 r/ | 2,500 |
| Burkina Faso e/ | 7 | 7 | 5 | 5 | 5 |
| Burma e/ 8/ | 35 | 35 | 35 | 35 | 35 |
| Cambodia e/ | 40 | 40 | 40 | 40 | 40 |
| Canada | 10,957 | 12,248 | 13,264 | 13,296 r/ | 12,481 p/ |
| Cape Verde e/ | 4 | 5 | 6 | 7 | 7 |
| Chile | 3,494 | 4,043 | 5,488 | 6,207 | 6,400 |
| China | 29,780 | 29,035 | 30,830 | 22,420 | 28,124 5/ |
| Colombia: | | | | | |
| Marine salt | 103 r/ | 153 r/ | 141 r/ | 165 r/ | 160 |
| Rock salt | 132 r/ | 424 r/ | 232 r/ | 330 r/ | 330 |
| Total | 235 r/ | 577 r/ | 373 r/ | 495 r/ | 490 |
| Costa Rica (marine salt) e/ | 32 | 37 | 37 | 37 | 37 |
| Croatia | 22 | 19 | 17 | 31 r/ | 18 5/ |
| Cuba e/ | 180 | 180 | 180 | 180 | 180 |
| Denmark (sales) e/ | 603 5/ | 600 | 600 | 600 | 600 |
| Dominican Republic: | | | | | |
| Marine salt | 42 | 50 | 50 e/ | 50 e/ | 50 |
| Rock salt | 11 | 11 | 12 e/ | 12 e/ | 12 |
| Total | 53 | 61 | 62 e/ | 62 e/ | 62 |
| Ecuador e/ | 224 5/ | 110 | 100 | 100 | 100 |
| Egypt | 1,990 | 1,530 | 2,024 r/ | 2,387 r/ | 2,400 |
| El Salvador (marine salt) | 30 e/ | 31 e/ | 95 r/ | 89 r/ | 90 |
| Eritrea: | | | | | |
| Marine salt e/ | 253 | 198 | 252 r/ 5/ | 114 r/ 5/ | 100 |
| Rock salt e/ | 2 | 2 | -- | -- | -- |
| Total | 255 | 200 | 252 r/ | 114 r/ | 100 |
| Ethiopia (rock salt) e/ 6/ | 5 | 5 | 1 | 1 | 1 |
| France: | | | | | |
| Brine salt | 1,491 | 1,460 | 1,475 | 1,500 e/ | 1,500 |
| Marine salt | 1,473 | 1,970 | 1,188 | 1,200 e/ | 1,200 |
| Rock salt | 165 | 160 e/ | 371 | 300 e/ | 300 |
| Salt in solution | 4,410 | 4,273 | 4,051 | 4,000 e/ | 4,000 |
| Total | 7,539 | 7,860 e/ | 7,085 | 7,000 e/ | 7,000 |
| Germany: | | | | | |
| Marine salt | 617 | 731 | 700 e/ | 700 e/ | 700 |
| Rock salt and other | 14,607 | 15,176 | 15,087 | 15,000 e/ | 15,000 |
| Total | 15,224 | 15,907 | 15,787 | 15,700 e/ | 15,700 |

See footnotes at end of table.

TABLE 12--Continued
SALT: WORLD PRODUCTION, BY COUNTRY 1/ 2/

(Thousand metric tons)

| Country 3/ | 1995 | 1996 | 1997 | 1998 | 1999 e/ |
|-------------------------------------|-----------|-------------|-----------|-------------|-----------|
| Ghana e/ | 50 | 50 | 50 | 50 | 50 |
| Greece | 143 | 147 | 150 | 150 e/ | 150 |
| Guadelope e/ | 200 | 200 | 200 | 200 | 200 |
| Guatemala e/ | 48 | 48 | 48 | 48 | 50 |
| Honduras e/ | 25 | 25 | 25 | 25 | 25 |
| Iceland e/ | 4 | 4 | 4 | 4 | 4 |
| India: | | | | | |
| Marine salt e/ | 12,500 r/ | 14,500 r/ | 14,200 r/ | 12,000 r/ | 14,400 |
| Rock salt | 2 | 2 | 3 e/ | 2 r/ e/ | 3 |
| Total | 12,544 r/ | 14,466 r/ | 14,251 r/ | 11,964 r/ | 14,453 5/ |
| Indonesia e/ | 670 | 670 | 680 | 650 | 680 |
| Iran 9/ | 936 | 1,000 r/ e/ | 1,180 r/ | 1,450 r/ e/ | 1,500 |
| Iraq e/ | 250 | 250 | 250 | 250 | 300 |
| Israel e/ | 900 | 800 | 800 | 800 | 900 |
| Italy: | | | | | |
| Brine salt and rock salt | 2,952 | 2,941 | 2,910 | 3,000 e/ | 3,000 |
| Marine salt, crude e/ 10/ | 600 | 600 | 600 | 600 | 600 |
| Total | 3,552 | 3,541 | 3,510 | 3,600 e/ | 3,600 |
| Jamaica | 20 | 18 | 16 r/ | 16 r/ | 15 |
| Japan e/ | 1,351 5/ | 1,390 | 1,400 | 1,400 | 1,400 |
| Jordan e/ | 25 | 25 | 61 r/ | 199 r/ | 200 |
| Kenya (crude salt) e/ | 71 | 41 | 6 r/ 5/ | 22 r/ | 25 |
| Korea, North e/ | 600 | 590 | 590 | 550 | 500 |
| Korea, Republic of e/ | 770 | 770 | 770 | 780 | 800 |
| Kuwait e/ | 100 | 100 | 100 | 100 | 100 |
| Laos (rock salt) e/ | 8 | 14 | 18 | 39 r/ 5/ | 40 |
| Lebanon e/ | 3 | 4 | 4 | 4 | 4 |
| Leeward and Windward Islands e/ | 1 | 1 | 1 | -- | -- |
| Libya e/ | 30 | 30 | 30 | 30 | 30 |
| Madagascar e/ | 51 5/ | 50 | 50 | 50 | 50 |
| Mali e/ | 5 | 6 | 5 | 6 | 6 |
| Malta (marine salt) e/ | (4/) | (4/) | (4/) | (4/) | (4/) |
| Martinique e/ | 200 | 200 | 200 | 200 | 200 |
| Mauritania e/ | 6 | 6 | 6 | 6 | 6 |
| Mauritius e/ | 6 | 6 | 6 | 6 | 6 |
| Mexico | 7,670 | 8,508 | 7,933 | 8,412 | 8,500 |
| Mongolia (mine output) | 1 | 1 | 1 | 1 e/ | 1 |
| Morocco (marine salt and rock salt) | 180 r/ | 171 r/ | 258 r/ | 148 r/ | 150 |
| Mozambique (marine salt) e/ | 40 | 60 | 60 | 60 | 60 |
| Namibia (marine salt) | 304 | 356 | 493 | 536 r/ | 550 |
| Nepal e/ 11/ | 7 | 7 | 7 | 6 r/ | 6 |
| Netherlands | 4,976 | 5,530 | 5,000 e/ | 5,500 | 5,000 |
| Netherlands Antilles | 424 | 366 | 432 | 487 r/ | 500 |
| New Zealand e/ | 50 | 67 | 67 | 65 | 65 |
| Nicaragua (marine salt) e/ | 15 | 15 | 14 r/ 5/ | 15 r/ 5/ | 15 |
| Niger e/ | 3 | 3 | 3 | 2 | 2 |
| Pakistan: 6/ | | | | | |
| Marine salt | 17 | 18 e/ | 19 r/ | 15 r/ | 16 5/ |
| Rock salt | 935 | 940 e/ | 1,042 r/ | 1,038 r/ | 1,019 5/ |
| Total | 952 | 958 e/ | 1,061 r/ | 1,053 r/ | 1,035 5/ |
| Panama (marine salt) e/ | 22 | 22 | 22 | 23 | 23 |
| Peru | 126 | 293 | 79 | 80 e/ | 80 |
| Philippines (marine salt) | 535 | 492 | 492 | 495 e/ | 490 |
| Poland: | | | | | |
| Rock salt | 812 | 923 | 791 r/ | 748 r/ | 750 |
| Other salt | 3,402 | 3,240 | 3,068 | 3,257 r/ | 3,250 |
| Total | 4,214 | 4,163 | 3,859 r/ | 4,005 r/ | 4,000 |
| Portugal (rock salt) | 545 | 610 | 600 e/ | 600 e/ | 600 |

See footnotes at end of table.

TABLE 12--Continued
SALT: WORLD PRODUCTION, BY COUNTRY 1/ 2/

(Thousand metric tons)

| Country 3/ | 1995 | 1996 | 1997 | 1998 | 1999 e/ |
|---|------------|------------|------------|------------|-----------|
| Romania: | | | | | |
| Rock salt | 669 | 350 | 350 e/ | 68 r/ | 70 |
| Other salt | 1,820 | 2,339 | 2,300 e/ | 2,152 r/ | 2,000 |
| Total | 2,489 | 2,689 | 2,650 e/ | 2,220 r/ | 2,070 |
| Russia | 3,100 | 2,100 | 2,100 | 2,000 e/ | 2,000 |
| Senegal e/ | 120 | 120 | 120 | 130 | 130 |
| Serbia and Montenegro | 14 | 22 | 28 | 78 r/ | 65 |
| Sierra Leone e/ | -- | 50 | 10 | -- | -- |
| Slovakia | 100 | 107 | 101 r/ | 100 e/ | 100 |
| Slovenia e/ | 3 5/ | 5 | 5 | 5 | 5 |
| Somalia e/ | 1 | 1 r/ | 1 r/ | 1 r/ | 1 |
| South Africa | 311 r/ | 253 | 322 r/ | 356 r/ | 365 5/ |
| Spain: e/ | | | | | |
| Marine salt and other evaporated salt | 1,282 5/ | 1,500 | 1,500 | 1,500 | 1,200 |
| Rock salt | 3,494 5/ | 2,500 | 2,500 | 2,000 | 2,000 |
| Total | 4,776 5/ | 4,000 | 4,000 | 3,500 | 3,200 |
| Sri Lanka e/ | 60 | 65 | 65 | 70 | 70 |
| Sudan e/ | 75 | 50 | 50 | 45 r/ | 50 |
| Switzerland e/ | 300 | 300 | 300 | 300 | 300 |
| Syria | 111 | 72 | 70 e/ | 163 r/ | 150 |
| Taiwan (marine salt) | 221 | 233 | 62 | 7 r/ | 8 |
| Tanzania | 105 | 87 | 90 e/ | 90 e/ | 90 |
| Thailand: | | | | | |
| Rock salt | 381 | 530 | 555 | 546 r/ | 550 |
| Other e/ | 100 | 100 | 100 | 100 | 100 |
| Total | 481 | 630 | 655 | 646 r/ | 650 |
| Tunisia (marine salt) | 481 | 478 | 394 | 473 r/ | 475 |
| Turkey | 1,444 | 2,068 | 2,344 r/ | 2,170 r/ | 2,200 |
| Turkmenistan | 277 | 256 | 217 | 215 e/ | 215 |
| Uganda e/ | 10 | 10 | 10 | 5 | 5 |
| Ukraine e/ | 3,000 | 2,800 | 2,500 | 2,500 | 2,500 |
| United Kingdom: | | | | | |
| Brine salt e/ 12/ | 1,300 | 1,300 | 1,300 | 1,300 | 1,300 |
| Rock salt e/ | 1,800 | 1,800 | 1,800 | 1,800 | 1,500 |
| Other salt 12/ | 3,548 | 3,512 | 3,500 e/ | 3,500 e/ | 3,000 |
| Total e/ | 6,650 | 6,610 | 6,600 | 6,600 | 5,800 |
| United States including Puerto Rico: | | | | | |
| United States: | | | | | |
| Brine | 20,600 | 21,500 | 21,400 | 21,100 | 22,700 5/ |
| Rock salt | 14,000 | 13,500 | 12,900 | 12,800 | 14,400 5/ |
| Solar salt | 3,540 | 3,270 | 3,170 | 3,190 | 3,580 5/ |
| Vacuum pan and open pan | 3,950 | 3,920 | 3,980 | 4,040 | 4,190 5/ |
| Puerto Rico e/ | 45 | 45 | 45 | 45 | 45 |
| Total e/ | 42,200 | 42,300 | 41,500 | 41,300 | 45,000 |
| Venezuela e/ | 350 | 350 | 350 | 350 | 350 |
| Vietnam e/ | 375 | 375 | 390 | 400 | 400 |
| Yemen e/ | 125 r/ | 135 r/ | 146 r/ | 147 r/ | 147 |
| Grand total | 199,000 r/ | 203,000 r/ | 206,000 r/ | 198,000 r/ | 209,000 |

e/ Estimated. p/ Preliminary. r/ Revised. -- Zero.

1/ World totals, U.S. data, and estimated data are rounded to no more than three significant digits; may not add to totals shown.

2/ Table includes data available through July 14, 2000.

3/ Salt is produced in many other countries, but quantities are relatively insignificant and reliable production data are not available. Some salt brine production data for manufacture of chlorine, caustic soda, and soda ash are not reported because of incomplete data reporting by many countries.

4/ Less than 1/2 unit.

5/ Reported figure.

6/ Year ending June 30 of that stated.

7/ From natural soda ash production.

8/ Brine salt is produced as reported by the Burmese Government in metric tons, was as follows: 1995--81,156; 1996--71,350; 1997--97,276 (revised); 1998--91,992 (revised); and 1999--61,674.

9/ Year beginning March 21 of that stated.

10/ Does not include production from Sardinia and Sicily, estimated at 200,000 metric tons per year.

11/ Year ending July 15 of that stated.

12/ Data captioned "Brine salt" for the United Kingdom are the quantities of salt obtained from the evaporation of brine; that captioned "Other salt" is the salt content of brines used for purposes other than production of salt.