DEPARTMENT OF COMMERCE
NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST)
OFFICE OF STANDARDS SERVICES

PRODUCT STANDARD PS14-69
Salt Packages

Product Standard PRODUCT STANDARD PS14-69 Salt Packages was withdrawn by the Department of Commerce on February 3, 1978.

This product standard was replaced by ANSI Z353.1, American National Standard for Salt Packages.

The Salt Institute is the sponsor of this ANSI Standard and can provide additional information and assistance

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federal register

National Bureau of Standards

VOLUNTARY PRODUCT STANDARDS ACTION ON PROPOSED WITHDRAWAL

In accordance with section 10.12 of the Department's "Procedures for the Development of Voluntary Product Standards" (15 CFR Part 10), notice is hereby given of the withdrawal of Voluntary Product Standard PS 14-69, "Salt Packages."

It has been determined that this standard is technically inadequate and that revision would serve no useful purpose. The subject matter of PS 14-69 is adequately covered by the American National Standards Institute's standard ANSI Z353.1, "American National Standard for Salt Packages." This action is taken in furtherance of the Department's announced intentions as set forth in the public notice appearing in the FEDERAL REGISTER of October 18, 1977 (42 FR 55632) to withdraw this standard.

→ The effective date for the withdrawal of this standard will be February 3, 1978. This withdrawal action terminates the authority to refer to this standard as a voluntary standard developed under the Department of Commerce procedures.

Dated: November 29, 1977.

ERNEST AMBLER,
Acting Director.

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A UNITED STATES DEPARTMENT OF COMMERCE PUBLICATION

DO NOT REMOVE
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NBS Voluntary Product Standard

WITHDRAWN

PS 14-69

U.S.
DEPARTMENT
OF
COMMERCE

National
Bureau
of
Standards

PRODUCT STANDARDS

Product Standards are published voluntary standards that establish (1) dimensional requirements for standard sizes and types of various products, (2) technical requirements for the product, and (3) methods of testing, grading, and marking these products. The objective of a *Product Standard* is to establish product requirements which are in accordance with the principal demands of the industry and, at the same time, are in the interest of the consumer.

Development of a PRODUCT STANDARD

The Bureau's Office of Engineering Standards Services works closely with business firms, trade organizations, testing laboratories, and other appropriate groups to develop *Product Standards*. The Bureau has the following role in the development process: It (1) acts as an unbiased coordinator in the development of the standard; (2) provides editorial assistance in the preparation of the standard; (3) supplies such assistance and review as is required to assure the technical soundness of the standard; (4) sees that the standard is representative of the views of producers, distributors, users, and consumers; (5) seeks satisfactory adjustment of valid points of disagreement; and (6) publishes the standard. Industry, on the other hand, (1) initiates and participates in the development of a standard; (2) provides technical counsel on a standard; and (3) promotes the use of, and support for, the standard. (A group interested in developing a *Product Standard* may submit a written request to the Office of Engineering Standards Services, National Bureau of Standards, Washington, D.C. 20234.)

When the Bureau receives a request for a standard, it must first determine that the standard would be technically feasible and in the public interest. After this is established, a draft of the proposed standard is developed in consultation with interested trade groups and is circulated for industry consideration and comment. Subsequently, a Standard Review Committee is established to review the proposed standard for conformance with the Department of Commerce procedures. The committee includes qualified representatives of producers, distributors, and users or consumers of the product being standardized. When the committee approves a proposal, copies of the recommended standard are distributed for industry consideration and acceptance. When the acceptances show general agreement by all segments of the industry, and when there is no substantive objection deemed valid by the National Bureau of Standards, the Bureau announces approval of the *Product Standard* and proceeds with its publication.

Use of a PRODUCT STANDARD

The adoption and use of a *Product Standard* is voluntary. *Product Standards* are used most effectively in conjunction with legal instrumentalities such as sales contracts, purchase orders, and building codes. When a standard is made part of such a document, compliance with the standard is enforceable by the buyer or the seller along with other provisions of the document. There is no governmental regulation or control involved.

Product Standards are useful and helpful to both purchasers and manufacturers. Purchasers may order products that comply with *Product Standards* and determine for themselves that their requirements are met. Manufacturers may refer to the standards in sales catalogs, advertising, invoices, and labels on their product. Commercial inspection and testing programs may also be employed, together with grade labels and certificates assuring compliance, to promote even greater public confidence. Such assurance of compliance promotes better understanding between buyers and sellers.

Effective Date

Having been passed through the regular procedures of the Office of Engineering Standards Services, National Bureau of Standards, and approved by the acceptors hereinafter listed in part, this Product Standard is issued by the National Bureau of Standards, effective:

August 1, 1969

Nat. Bur. Stand. (U.S.), Prod. Stand. 14–69, 9 pages (May 1970) CODEN: XNPSA

Product Standard PS 14–69

Supersedes Simplified Practice Recommendation 70–54

Salt Packages

Effective August 1, 1969

1. PURPOSE

1.1. The purpose of this Product Standard is to establish, as a standard of practice in production, distribution, and use, the types of packages for the various kinds of salt and the quantities in which such salt is to be packaged. This revision of Simplified Practice Recommendation R 70–54 incorporates changes that are deemed necessary to reflect the current needs and demands of the salt industry, as well as the desires of consumers. The adoption and use of this Standard is voluntary, although widespread conformance to the Standard will allow producers, distributors, retailers, and consumers of salt to benefit from salt package standardization.

2. SCOPE AND CLASSIFICATION

2.1. **Scope**—This Product Standard specifies the recommended salt packages for each kind of salt, the labeled net weight of the packages, and the type and capacity of shipping containers. Definitions and uses for salt are also included. While no attempt is made to list all of the packages, sizes, and containers which might be packed by one or more producer, table 1 includes those items common to the entire industry.

2.2. **Classification**—The chemical term for salt is sodium chloride. Within the industry, salt is classified by methods of production and by the characteristics of the products that are required for particular end uses.

Salt is classified by methods of production as follows: Rock salt, evaporated salt, and solar salt. Rock salt is produced by drilling and blasting natural salt deposits. Evaporated salt is produced by evaporating brine in large covered, steam-heated kettles or pans under vacuum conditions, or in open pans at temperatures less than boiling. Solar salt is produced by pumping brine into shallow ponds for evaporation by the sun and wind.

Salt products are also classified into two major use categories: high grade and common grade. High grade salt products are generally certified or guaranteed to have specific chemical or physical properties or added ingredients that make them especially suitable for certain critical end uses. Included in this category are salts with high sodium chloride content with minimal amounts of impurities. Most high grade salt is produced by the two evaporation methods, although some is produced from solar and rock salt. Common grade salt, while of generally high quality when produced by evaporation or solar methods, is not generally certified or guaranteed to have a specific chemical analysis. Such salt is utilized primarily as a basic chemical (sodium chloride) for a great variety of noncritical end uses.

3. REQUIREMENTS

3.1. **Packaging of salt**—The net weights of the packages of the various kinds of salt are contained in table 1 along with a description

TABLE 1. *Salt packages*

Kind of salt	Primary container		Shipping container [1]	
	Net weight of contents—Pounds	Kind	Capacity [2]	Kind
Table	1⅝ (26 oz)[3]	Round carton	24/1⅝	Case.
Table	5	Pocket [4]	12/5	Case or bale.
Table	100	Bag		
Rock (coarse sizes)	10	Pocket	6/10	Case or bale.
Rock (coarse sizes)	25, 50, 100	Bag		
Rock (fine and granulated)	25, 50, 100	Bag		
Evaporated granulated	25, 50, 100	Bag		
Undried solar	50, 100, 125	Bag		
Dry solar, kiln dried	10	Pocket	6/10	Bale.
Dry solar, kiln dried	50, 100	Bag		
Blocks	50			[5]
Bricks	4		15/4 [6]	Case.
Medium (flake)	25, 50, 100	Bag		
High grade	5	Pocket	12/5	Case or bale.
High grade	100	Bag		
Mineralized	50, 100	Bag		
Compressed water softener	25, 50, 100	Bag		
Popcorn	1⅝ (26 oz)	Round carton	24/1⅝	Case.
Kosher	3	Square carton	12/3	Case.
Hawaiian	1	Bag	12/1	Bale.

[1] Where no shipping container is shown, the primary container also serves as the shipping container.

[2] Capacity indicates the number of primary containers in each shipping container. Thus, 15/4 means 15 four-pound primary containers or packages.

[3] While 1⅝ pound (26 oz) rounds are standard with all producers, table salt is also available in smaller, convenient consumer sizes, including single serving packets.

[4] The term "Pocket" refers to a bag of 10 pounds or less net weight.

[5] Shipping containers are available for 50-lb trace mineralized blocks at customer's option.

[6] 10/5's instead of 15/4's are packaged in the California and Utah salt producing areas.

of the primary container and the capacity and description of the shipping container, where appropriate. Only salt packaged according to the limitations set forth in table 1 shall be deemed to be packaged in conformance with this Product Standard.

4. DEFINITIONS AND USES

4.1. **Table salt**—Salt produced for human consumption, normally is an evaporated granulated salt with a grain size between 0.01 and 0.03 inch. Table salt may contain free-flowing and/or anticaking additives and is available as plain or iodized salt.

4.2. **Rock salt (coarse sizes)**—Mined salt that usually is crushed and screened to sizes from 0.08 to 0.75 inch. Rock salt is the mineral Halite, a natural sodium chloride found in the earth in beds a few feet to several thousand feet in thickness. Rock salt is used in refrigeration systems, in water-softening processes, in chemical manufacture, in the salting of hides, and in highway snow and ice removal operations. It contains approximately 95 percent to 99 percent sodium chloride.

4.3. **Rock salt (fine and granulated)**—Mined rock salt that is crushed to a grain size usually less than 0.08 inch. It is used where a fine grade of rock salt is required, such as in free-choice cattle feeding.

4.4. **Evaporated granulated salt**—Salt produced by vacuum pan evaporation of brine under conditions designed to control crystal size and purity. The crystal structure is cubic. Grain size is less than 0.05 inch, generally ranging between 0.01 and 0.03 inch. The sodium chloride content usually exceeds 98 percent, and the color is opaque white.

Evaporated granulated salt is used by meatpackers for dry salting of meat and for pickling and curing (as a brine); by food processors for the processing of sauerkraut, cucumber pickles, and the like; and by chemical and dye industries. It is used as an ingredient in many prepared foods, in feeds for livestock, and in the zeolite process of water softening.

4.5. **Undried solar salt**—A salt produced by evaporation of sea, salt lake, or underground saline waters by sun and wind in shallow ponds. This salt does not normally contain more than 5 percent moisture. The coarse screenings from this process are suitable for most of the purposes for which the coarse sizes of rock salt are used.

4.6. **Dry solar, kiln-dried salt**—A salt that has been dried to a moisture content of less than 0.5 percent in a rotary kiln. It is used for the same purposes as rock salt, except where moisture is a problem.

4.7. **Salt blocks**—Blocks of salt that are produced from evaporated granulated, crushed solar, or rock salt compressed into a standard block of 50 pounds. These blocks are manufactured in plain, sulfur, iodized, trace mineralized, and mineral supplement forms. Although the 50-pound block of plain salt was originally developed for cattle, it is now widely used in certain types of water softening and refrigeration systems.

4.8. **Salt bricks**—Small blocks similar to "salt blocks," pressed into 4-pound bricks, for animal use.

4.9. **Medium (flake) salt**—Salt ranging in size between 0.01 and 0.05 inch. Medium salt is produced by slow evaporation of brine in open pans at temperatures less than boiling. The crystals are cubic but aggregate into hopper-like shapes which break up into fragments known as flakes. Closely screened medium salt is classified as flake salt. The sodium chloride content usually exceeds 96 percent. Medium is

sold to meatpackers and the agricultural trade. Flake salt is sold primarily for food uses.

4.10. **High grade salt**—An evaporated granulated flake or solar salt which has been selected or processed to provide special features, such as high purity or fewer impurities than are usually found in these types of salt. This salt is used in certain critical applications where a guaranteed analysis is required. The particle sizes are the same as those for evaporated granulated salt.

4.11. **Mineralized salt**—Salt containing trace amounts of minerals. The term "trace mineralized" refers to evaporated granulated solar or rock salts, screened to sizes less than 0.05 inch, to which has been added trace amounts of iron, copper, iodine, cobalt, zinc, manganese, or other compounds to prevent trace mineral deficiencies that may be responsibile for the poor health of farm animals or fowl. The term "mineral supplement" refers to salt products containing calcium and phosphorus and trace minerals which are formulated to supply a balanced ratio of phosphorus and calcium that is necessary for the proper nutrition of livestock.

4.12. **Compressed water softener salt**—A product compressed from evaporated granular or solar salts into "thumbnail" or smaller sizes for regenerating water softening systems. It has the advantage of high quality without the insoluble sediments found in the mined rock salt.

4.13. **Popcorn salt**—Evaporated salt which is finely screened (finer than 0.01 inch), often containing free-flowing agents for ease of application; used in seasoning popcorn.

4.14. **Kosher salt**—A coarse flake salt produced by open pan evaporation under conditions approved by the Orthodox Jewish faith for use in Kosher food.

4.15. **Hawaiian salt**—A solar salt produced by the evaporation of sea water in clay beds. This unwashed salt, used for cooking in Hawaii, contains a small amount of red clay (alae).

5. IDENTIFICATION

5.1. **Labels and literature**—In order that purchasers may identify products complying with the requirements of this voluntary Product Standard, packagers choosing to package such products in compliance with this voluntary Standard may include a statement in conjunction with their name and address on labels, invoices, sales literature, and the like. The following statement is suggested when sufficient space is available:

> This salt is packaged and labeled in accordance with the requirements of Product Standard PS 14–69, developed cooperatively with the industry and published by the National Bureau of Standards under the voluntary Product Standards procedures of the U.S. Department of Commerce. Full responsibility for the conformance of this product with the standard is assumed by (name and address of packager or distributor).

The following abbreviated statement is suggested when available space on labels is insufficient for the full statement:

> Conforms to PS 14–69, a packaging quantity standard (name and address of packager or distributor).

6. HISTORY

6.1. **Previous editions**—A voluntary Standard for salt packages developed under Department of Commerce procedures has existed since 1927, when Simplified Practice Recommendation R 70 was issued. The simplification of the quantities of salt packages was originally initiated at the request of the Salt Producers Association. In 1941, 1942, 1946, and most recently in 1954, the Standard was revised to keep it current with regard to industry's packaging practices. (Additional details regarding the development of previous revisions of this Standard are given in earlier editions of R 70.)

6.2. **Current revision**—The current revision of SPR 70–54 was requested by the Salt Institute, an organization of natural salt producers, and the successor organization of the Salt Producers Association. This revision further updates the Standard by including certain new quantities of salt packages and by deleting other quantities which are no longer recognized as "standard." It also contains minor changes in nomenclature, and sets forth in one table information formerly found in two separate tables.

Copies of the recommended Standard, designated TS 114b, were distributed to the industry for acceptance July 25, 1968. An analysis of the responses indicated a consensus among producers and packagers, distributors, and users of the product as defined in the published procedures. The new edition of the Standard was designated Product Standard PS 14–69, *Salt Packages*, and became effective on August 1, 1969.

Technical Standards Coordinator:

Charles B. Phucas, Product Standards Section, Office of Engineering Standards Services, National Bureau of Standards, Washington, D.C. 20234

7. STANDING COMMITTEE

7.1. The following individuals comprise the membership of the Standing Committee, which is to review, prior to circulation for acceptance, revisions proposed to keep the Standard up to date. Comment concerning the Standard and suggestions for revision may be addressed to any member of the committee or to the Office of Engineering Standards Services, National Bureau of Standards, U.S. Department of Commerce, which acts as secretary for the committee.

Representing Packagers

Mr. John M. Rankin, Morton Salt Company, 110 North Wacker Drive, Chicago, Illinois 60606 (Chairman)

Mr. H. J. Carey, Jr., President, The Carey Salt Co., 180 Carey Boulevard, Post Office Box 1728, Hutchinson, Kansas 67501

Mr. Edson K. Green, Vice President, International Salt Co., Clarks Summit, Pennsylvania 18411

Mr. Edward M. Dodd, Executive Vice President, Diamond Crystal Salt Co., 916 South Riverside Avenue, St. Clair, Michigan 48079

Representing Distributors

Mr. Walter A. Churchill, Churchill Super Markets, Inc., 2845 West Central Avenue, Toledo, Ohio 43606

Mr. Wallace N. Flint, National Association of Food Chains, 1725 Eye Street, N.W., Washington, D.C. 20006

Representing Users

Mr. Lee H. Boyd, Director of Feed Control and Nutrition, American Feed Manufacturers Association, Inc., 1725 K Street, N.W., Washington, D.C. 20006

Mr. Donald MacKenzie, Director, Plant Operations, American Meat Institute, 59 East Van Buren Street, Chicago, Illinois 60605

Mr. Donald E. Mattison, Grain and Feed Dealers National Association, Box 8, Cattaraugus, New York 14719

Mr. Richard Weickart, Technical Director, Water Conditioning Foundation Laboratory, 7009 West Higgins Avenue, Chicago, Illinois 60656

8. ACCEPTORS

8.1. The producers/packagers, distributors, users, consumers, and others listed below have individually indicated in writing their acceptance of this Product Standard prior to its publication. The acceptors have indicated their intention to use the Standard as far as practicable but reserve the right to depart from it when necessary. This list is published to show the extent of recorded public support for the Standard.

PRODUCERS/PACKAGERS

American Salt Corporation, Kansas City, Missouri
Carey Salt Company, The, Hutchinson, Kansas
Cargill, Incorporated, Minneapolis, Minnesota
Cayuga Rock Salt Company, Inc., Myers, New York 14866
Diamond Crystal Salt Company, St. Clair, Michigan
Excelsior Salt Works, Inc., Pomeroy, Ohio
Gordy Salt Company, Incorporated, New Iberia, Louisiana
Hardy Salt Co., St. Louis, Missouri
International Salt Company, Clarks Summit, Pennsylvania
Leslie Foods, Inc., San Francisco, Calif.
Michigan Salt Company, Saint Louis, Michigan
Morton Salt Company, Chicago, Illinois
New Mexico Salt Company, Carlsbad, New Mexico
Redmond Clay & Salt Co., Inc., Redmond, Utah
Solar Salt Co., Salt Lake City, Utah
United Salt Corporation, Houston, Texas
Utah Salt Co., Inc., Salt Lake City, Utah
Watkins Salt Company, Watkins Glen, New York

DISTRIBUTORS

Acme Mkts., Inc., Philadelphia, Pennsylvania
Amana Society, Amana, Iowa
Arnold's Food Market, Inc., Mt. Holly Springs, Pennsylvania
Associated Distributors, Inc., Tampa, Florida
Astor Products, Inc., Jacksonville, Florida
Bailey & Sons, Inc., B. D., Clarksburg, West Virginia
Bisese & Console, Inc., Norfolk, Virginia
Boyd's Super Markets, Sheridan, Wyoming
Brooks (Hawaii) Inc., Honolulu, Hawaii
Carothers & Carothers, Chattanooga, Tennessee
Casey's Super Market Inc., DeFuniak Springs, Florida
Central Markets, Inc., Schenectady, New York
Chatham Supermarkets, Inc., Warren, Michigan
Chief Super Market, Inc., Defiance, Ohio
Consumers Market, Inc., Springfield, Missouri
Cutler-Magner Company, Duluth, Minnesota
Daitch Crystal Dairies Inc., Bronx, New York
Eastern Salt Company, Boston, Massachusetts
Fisher Foods, Inc., Bedford Heights, Ohio
Fodor & Company, A. W., Cleveland, Ohio
Food Fair Stores, Inc., Philadelphia, Pennsylvania
Food Farm, Oakland, California
Forrest Abbott Company, Greenville, South Carolina
Galloway Sales Inc., Wichita, Kansas
Grand Union Company, The, East Paterson, New Jersey
Green Hills Super Markets, Inc., St. Joseph, Missouri
Hal Kelley Grain & Milling Riverside, California
Harris-Teeter Super Markets, Inc., Charlotte, North Carolina
Hudson-Thompson, Inc., Montgomery, Alabama
Hy-Vee Food Stores, Inc., Chariton, Iowa
Hydro-Matic Corporation, Reading, Pennsylvania
In & Out Corporation, Pine Bluff, Arkansas
Iroquois Popcorn Co., Inc. Chicago, Illinois
Island Creek Stores Company, Holden, West Virginia
Kroger Co., The, Cincinnati, Ohio
Lee, F., Fresh Food Broker, Cumberland, Maryland
Little Red Food Stores, Inc., Topeka, Kansas
Lykes Bros. Inc., Plant City, Florida

Mammel Food Stores Co. C. O., Great Bend, Kansas
Marsh Super Markets, Muncie, Indiana
Massey & Fair, Inc., Atlanta, Georgia
Medd's Dairy Market, Inc., Milford, Delaware
Meijers, Inc., Grand Rapids, Michigan
Mick-or-Mack Stores Co. Inc., Salem, Virginia
Miller's Delicatessen, Inc., Providence, Rhode Island
National Cooperatives, Inc., Albert Lea, Minnesota
National Tea Co., Chicago, Illinois
Noel Brokerage Company, Houston, Texas
Okay Food Centers, Pocatello, Idaho
Open Pantry Food Marts of Western Pennsylvania, Inc., Pittsburgh, Pennsylvania
Pick-N-Pay Super Markets, Maple Heights, Ohio
Raley Brothers, Inc., Atlanta, Georgia
Reeves, Paruin & Co., Philadelphia, Pennsylvania
Rosauer's Super Mkts., Spokane, Washington
St. Laurent Bros., Inc., Bay City, Michigan
Salt Supply Company, Inc., Carlsbad, New Mexico
Sampson Supermarkets, Inc., Auburn, Maine
Schultz Sav-O Stores, Inc., Sheboygan, Wisconsin
Snook's Mill Inc., Mifflinburg, Pennsylvania
Stop & Shop, Inc., Boston, Massachusetts
Stop-N-Go Foods Stores, Champaign, Illinois
Supermarkets General, Cranford, New Jersey
Thorofare Markets, Inc., Pittsburgh, Pennsylvania
Thriftway Food, Inc., King of Prussia, Pennsylvania
Vons Grocery Co., El Monte, California
Ward Marketing Company, Kansas City, Missouri
Wentz Markets, Inc., Chico, California
Woodson Associates, Inc., Albuquerque, New Mexico

USERS

A.B.C. Popcorn Co., Inc., Chicago, Illinois
Allied Mills, Inc., Chicago, Illinois
Alton Council Brokerage Co., Fort Smith, Arkansas
American Pop Corn Co., Sioux City, Iowa
Arbogast & Bastian, Inc., Allentown, Pennsylvania
Archway Cookies, Inc., Battle Creek, Michigan
Armour and Company, Chicago, Illinois
Arnold Bakers, Inc., Greenwich, Connecticut
Beavers Packing Co., Inc., Newnan, Georgia
Becker Pretzel Bakery, Baltimore, Maryland
Bumble Bee Seafoods, a Division of Castle & Cooke, Inc., Astoria, Oregon
Campbell Soup Company, Camden, New Jersey
Cole Milling Co., Fayetteville, North Carolina
Commers Soft Water Co., Minneapolis, Minnesota
Continental Baking Company, Rye, New York
Culligan Inc., Northbrook, Illinois
Drake Bakeries Borden Inc., Foods Division, New York, New York
Duffy-Mott Company, Inc., New York, New York
Durr Packing Co. Inc., C. A., Utica, New York
Excel Packing Co., Inc., Wichita, Kansas
Flint & Walling Mfg. Co., Inc., Kendallville, Indiana
Gorton Corporation, The Gloucester, Massachusetts
Green Giant Company, Le Sueur, Minnesota
Grote & Weigel, Inc., Bloomfield, Connecticut
Heinz Company, H. J., Pittsburgh, Pennsylvania
Herman Falter Packing Co., The, Columbus, Ohio
Hillson Nut Co., The, Cleveland, Ohio
Hunt-Wesson Foods, Inc., Fullerton, California
Hunter Packing Company, East St. Louis, Illinois
Hygrade Food Products Corp., Detroit, Michigan
International Supply Co., Eldora, Iowa
Kahn's Sons Co., E., Cincinnati, Ohio
Kraft Foods Division National Dairy Products Corporation, Chicago, Illinois
Krauss, Inc., John, Jamaica, Long Island, New York
La Choy Food Prod, Archbold, Ohio
Lawry's Foods, Inc., Los Angeles, California
Lay Packing Co., Knoxville, Tennessee
Lindsay Co., The, St. Paul, Minnesota
McCormick and Company, Inc., Baltimore, Maryland
McKenzie Packing Co., Inc., John, Burlington, Vermont
Midwestern Beef, Inc., Norfolk, Nebraska
Miller Pretzel Co., Allentown, Pennsylvania
Nissen & Son Packing Co., Webster City, Iowa
Ovaltine Food Products, Villa Park, Illinois
Peet Packing Company, Bay City, Michigan
Pepperidge Farm, Incorporated, Norwalk, Connecticut
Pillsbury Company, The, Minneapolis, Minnesota
Pioneer Industries, Inc., Cleveland, Ohio
Popped Right Corn Co. Marion Ohio
Purity Packing Company, Knoxville, Tennessee
Rainsoft Water Conditioning Co., Elk Grove Village, Illinois
Rath Packing Company, The, Waterloo, Iowa
Red Jacket Manufacturing Co., Davenport, Iowa
Rex Chainbelt Inc., West Conshohocken, Pennsylvania
Rold Gold Foods Division of Frito-Lay, Inc., St. Louis Missouri
Royal Packing Co., National Stockyards, Illinois
Schluderberg-Kurdle Co., Inc., Baltimore, Maryland
Shen Valley Meat Packers, Inc., Timberville, Virginia
Shop Rite Foods, Inc. (Piggly Wiggly), Lubbock, Texas
Tobin Packing Co., Inc., Rochester New York
Universal Foods Corporation, Milwaukee, Wisconsin
Winchester Packing Co. Inc., Hutchinson, Kansas

CONSUMERS

Agan, Tessie, Manhattan, Kansas
Armstrong, Jan, Lafayette, Indiana
Bailey, Betty, Northridge, California
Barron, June, Indianapolis, Indiana
Beard, Doris, Sacramento, California
Birchard, Helen, Saratoga Springs, New York
Bishop, Myra, Knoxville, Tennessee
Brady, Mildred, Chesapeake, Virginia
Brannan, Betty, Gainesville, Florida
Brock, Beatrice, Des Moines, Iowa
Brock, Charles, Rock Hill, South Carolina
Brown, Alma, Dunn, North Carolina
Brown, Clarence, Wichita, Kansas
Champoux, Ellen, Greensboro, North Carolina
Confer, Anne, Chester, Virginia
Cooper, Lucile, Albany, Wisconsin
Cornelius, Charlotte, St. Albans, Vermont
Craig, Karen, Carbondale, Illinois
Dodge, Donna, Columbia, Missouri
Draves, Dorothy, Largo, Florida
Ellis, Mary, Burlington, Vermont
Everson, Katherine, Las Vegas, Nevada
Falck, W., Annapolis, Maryland

Fisher, John, Worthington, Ohio
Fuller, Amelia, Blacksburg, Virginia
Grinker, Rachel, New York, New York
Hallaway, Joann, Kent, Ohio
Hildebrant, Marion, Richmond, California
Johnson, Robert, Lafayette, Indiana
Judge, Jean, New Brunswick, New Jersey
Kingery, Elinor, Denver, Colorado
Kreymborg, Helen, Mitchell, Nebraska
Krofta, Janet, Orono, Maine
Laine, Lora, Athens, Georgia
Langston, Virginia, Hammond, Louisiana
Lease, Jane, Bozeman, Montana
Lee, Stewart, Beaver Falls, Pennsylvania
Leopold, Clara, Lincoln, Nebraska
Lotwin, Gertrude, Trenton, New Jersey
Lund, Lois, St. Paul, Minnesota
Lynch, Jeannette, University Park, Pennsylvania
Marley, Warren, Winona, Minnesota
Martin Flora, Helena, Montana
Marty, Mamie, Durham, New Hampshire
Matson, W. F., Harrisburg, Pennsylvania
Mattison, Donald, Cattaraugus, New York
Maynard, Ruth, Milledgeville, Georgia
McDonald, Rebecca, Newark, Ohio
Means, Gertrude, Stillwater, Oklahoma
Meyer, Frances, Carrollton, Missouri
Miller, Helen, Laramie, Wyoming
Minden, Mary Beth, Washington, D.C.
Nantz, Evelyn, College Park, Maryland
Nealis, Mary Ruth, St. Charles, Illinois
Neufeld, Dorothy, Iola, Kansas
Newman, Sarah, Washington, D.C.
Nichols, Faye, Edgewater, Maryland
Patton, Price, Highland Park, Illinois
Phillips, E., Los Angeles, California
Plonk, Martha, Corvallis, Oregon
Preston, Nathalie, Brooklyn, New York
Redeker, Norma, Hutchinson, Kansas
Reed, Janet, Newark, Dalaware
Rose, Eithel, Auburn, Alabama
Rozier, Justine, Raleigh, North Carolina
Rupert, Lois, Harrisburg, Pennsylvania
Siek, Mildred, McPherson, Kansas
Smith, Georgia, Fargo, North Dakota
Smith, Wilmer, Wilson, Texas
Stam, Frederick, Crystal Lake, Illinois
Taylor, Donald, Corvallis, Oregon
Tegeder, Frances, Atlanta, Georgia
Toya, Chris, Jemez Pueblo, New Mexico
Urquhart, Doris, Yakima, Washington
Wade, Marilyn, Ava, Missouri
Watkins, E., Madison, Wisconsin
Worth, Sara, Mt. Holly, New Jersey

FEDERAL GOVERNMENT

U.S. Bureau of Mines, Mineral Studies, Washington, D.C.

STATE GOVERNMENTS

Alabama Department of Agriculture, Division of Gins and Warehouses, Weights and Measures, Montgomery, Alabama
Arizona Department of Weights and Measures, Phoenix, Arizona
Arkansas State Plant Board, Division of Weights and Measures, Little Rock, Arkansas
California Department of Agriculture, Bureau of Weights and Measures, Sacramento, California
District of Columbia Department of Licenses and Inspections, Weights, Measures, and Markets Branch, Washington, D.C.
Georgia Department of Agriculture, Weights and Measures Division, Atlanta, Georgia
Hawaii Department of Agriculture, Weights and Measures Branch, Honolulu, Hawaii
Iowa Department of Agriculture, Consumer Protection Services, Weights and Measures Division, Des Moines, Iowa
Kansas State Board of Agriculture, Division of Weights and Measures, Topeka, Kansas
Maine Department of Agriculture, Bureau of Weights and Measures, Augusta, Maine
New Hampshire Department of Agriculture, Bureau of Weights and Measures, Concord, New Hampshire
New York Department of Agriculture and Markets, Bureau of Weights and Measures, Albany, New York
Pennsylvania Bureau of Standard Weights and Measures, Harrisburg, Pennsylvania
South Dakota Department of Agriculture, Division of Inspections, Pierre, South Dakota
Tennessee Department of Agriculture, Division of Marketing, Nashville, Tennessee
Washington Department of Agriculture, Weights and Measures Section, Olympia, Washington
West Virginia Department of Labor, Divisdon of Consumer Protection, Charleston, West Virginia
Wisconsin Department of Agriculture, Bureau of Weights and Measures, Madison, Wisconsin

ASSOCIATIONS

National Independent Meat Packers Association, The, Washington, D.C.
Salt Institute, Alexandria, Virginia

American National Standard

for salt packages

american national standards institute, inc.
1430 broadway, new york, new york 10018

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American National Standard for Salt Packages

Sponsor

Salt Institute

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American National Standards Institute, Inc

American National Standard

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Foreword

(This Foreword is not a part of American National Standard for Salt Packages, Z353.1-1977.)

This standard was sponsored by the Salt Institute with the objective of establishing requirements for salt packages that are in accordance with the principal demands of the industry as well as in the interest of the consumer.

The Salt Institute is a nonprofit association supported by the world's major salt producers. Its members are located in the United States, Canada, Mexico, and Europe, and together they account for most of the world's salt production. The Institute's U.S. members produce 95% of America's evaporated, rock, and solar salt output.

The organization was founded in 1914 as the Salt Producers' Association. In 1963, the corporate name was changed to Salt Institute. The Institute's activities include research, information services, government relations, member services, and field services to users of salt.

This standard was developed in cooperation with the American National Standards Institute through the canvass method.

Comments concerning the standard and suggestions for improvement will be welcome. They should be sent to the Salt Institute, 206 North Washington Street, Alexandria, Va. 22314.

The following organizations recognized as having an interest in the standardization of salt packages were contacted prior to the approval of this standard. Inclusion in this list does not necessarily imply that the organization concurred with the submittal of the proposed standard to ANSI.

American Frozen Food Institute
Brand Names Foundation
Cooperative Food Distributors of America
Grocery Manufacturers of America, Inc
National Association of Convenience Stores, Inc
National Broiler Council
National Canners Association
National Food Brokers Association
National Independent Meat Packers Association
Super Market Institute
United Fresh Fruit and Vegetable Association

The Standing Committee, which was responsible for the development of this standard and which will review subsequent revisions proposed to keep the standard up-to-date, had the following members:

Packagers

Joe B. Allen
(Carey Salt Company)
Charles D. Cronenworth
(Diamond Crystal Salt Company)
Daniel A. Gescheidle
(Morton Salt Company)
John L. Ryon
(International Salt Company)

Distributors

Walter A. Churchill
(Churchill Super Markets, Inc)
Wallace N. Flint
(National Association of Food Chains)

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(American Feed Manufacturers Association, Inc)
Richard Lyng
(American Meat Institute)
Donald E. Mattison
(Grain and Feed Dealers National Association)
Richard Weickart
(Water Conditioning Foundation Laboratory)

Contents

American National Standard for Salt Packages

1. Purpose

The purpose of this standard is to establish uniform practices in the production and distribution of salt packages by specifying types of packages for the various kinds of salt and the quantities in which such salt is to be packaged. This document is intended to reflect the current needs and demands of the salt industry, as well as the desires of consumers. The adoption and use of this standard is voluntary, although widespread conformance to its specifications will allow producers, distributors, retailers, and consumers of salt to benefit from salt package standardization.

2. Scope and Classification

2.1 **Scope.** This standard specifies the recommended salt packages for each kind of salt, the labeled net weight of the packages, and the type and capacity of shipping containers. Definitions and uses for salt are also included. While no attempt is made to list all sizes and types of packages and containers that might be used by one or more producers. Table 1 includes those items common to the entire industry.

2.2 **Classification.** The chemical term for salt is sodium chloride. Within the industry salt is classified by methods of production and by product characteristics required for particular end uses.

Salt is classified by methods of production as follows: rock salt, evaporated salt, and solar salt. Rock salt is produced by drilling and blasting natural salt deposits. Evaporated salt is produced by evaporating brine in large, sealed, steam-heated kettles or pans under vacuum conditions, or in open pans at temperatures below boiling. Solar salt is produced by pumping brine into shallow ponds for evaporation by the sun and wind.

Salt products are also classified into two major use categories: high grade and common grade. High-grade salt products are generally certified or guaranteed to have specific chemical or physical properties or added ingredients that make them especially suitable for certain critical end uses. Included in this category are salts with high sodium chloride content and minimal amounts of impurities. Most high-grade salt is produced by the two evaporation methods from solar and rock salt. Common grade evaporated salt, while of generally high quality, is not generally certified or guaranteed to have a specific chemical analysis. Solar or rock salt is used primarily as a basic chemical (sodium chloride) for a great variety of noncritical end uses.

3. Packaging Requirements

The net weights of the packages of the various kinds of salt are contained in Table 1, along with a description of the primary container and the capacity and description of the shipping container, where appropriate. Only salt packaged according to the limitations set forth in Table 1 shall be deemed to be packaged in conformance with this standard.

4. Definitions and Uses

4.1 Table Salt. Salt produced for human consumption. Table salt is normally evaporated granulated salt with a grain size between a No. 40 and a No. 60 mesh sieve. Table salt may contain 2% aluminum calcium silicate, calcium silicate, magnesium silicate, sodium aluminosilicate (sodium silicoaluminate), sodium calcium aluminosilicate, hydrated (sodium calcium silicoaluminate), or tricalcium silicate [Code of Federal Regulations (CFR), Section 121.101(d)(1)] and 13 ppm yellow prussiate of soda (CFR 121.1032) or 25 ppm ferric ammonium citrate (CFR 121.1190) as an anticaking agent. It is available as plain or iodized salt containing 0.01% potassium iodide [CFR 121.101(5)] with a stabilizer consisting of 0.1% calcium hydroxide and 0.1% sodium thiosulfate or other suitable agents that are equally effective in preventing the loss of iodine. The regulations for labeling containers are given under CFR 1.8c and 3.87.

4.2 Rock Salt (Coarse Sizes). Mined salt that is usually crushed and screened through a ½-in sieve. Rock salt is the mineral halite, a natural sodium chloride found in the earth in beds a few feet to several thousand feet in thickness. Rock salt is used in (1) refrigeration systems, (2) water-softening processes, (3) chemical manufacture, (4) the salting of hides, and (5) highway snow and ice removal operations. It contains approximately 95% sodium chloride.

Table 1
Salt Packages

Kind of Salt	Primary Container: Net Weight of Contents: Pounds	Primary Container: Net Weight of Contents: Kilograms	Primary Container: Kind	Secondary Container*: Capacity†	Secondary Container*: Kind	Palletized Shipping Unit: Units per Layer	Palletized Shipping Unit: Number of Layers	Palletized Shipping Unit: Total Units	Approximate Net Weight: Pounds	Approximate Net Weight: Kilograms
Table	1-5/8 (26 oz)‡	0.74	Round carton	24/1 5/8	Case	14	4	56	2184	991
Table	5	2.30	Bag	12/5	Case or bale	9	4	36	2160	980
						6**	6**	36	2160	980
Table	25	11.30	Bag			9	10	90	2250	1021
						10**	9**	90	2250	1021
Rock (coarse sizes)	10	4.50	Bag	6/10		9	4	36	2160	980
						6**	6**	36	2160	980
Rock (coarse sizes)	25	11.30	Bag			9	10	90	2250	1021
						10**	9**	90	2250	1021
	50	22.70	Bag			7	7	49	2450	1111
	80	36.30	Bag			5	6	30	2400	1090
Rock (fine and granulated)	50	22.70	Bag			7	7	49	2450	1111
	80	36.30	Bag			5	6	30	2400	1090
Evaporated granulated	50	22.70	Bag			7	7	49	2450	1111
	80	36.30	Bag			4	6	24	1920	1090
						5	6	30	2400	1090
Undried solar	50	22.70	Bag			7	7	49	2450	1111
	80	36.30	Bag			5	6	30	2400	1090
Solar, kiln dried	10	4.50	Bag	6/10	Bale	9	4	36	2160	980
						6**	6**	36	2160	980
	50	22.70	Bag			7	7	49	2450	1111
	80	36.30	Bag			5	6	30	2400	1090
Blocks	50	22.70			(§)	20	2	40	2000	907
						20**	3**	60	3000	1361
						24**	2**	48	2400	1090
Bricks	4	1.80		15/4		8	5	40	2400	1090
Medium (flake)	50	22.70	Bag			7	7	49	2450	1111
	80	36.30	Bag			5	6	30	2400	1090
High grade	5	2.30	Bag	12/5	Case or bale	9	4	36	2160	1021
	10	4.50	Bag	6/10		9	4	36	2160	1021
High grade	80	36.30	Bag			5	6	30	2400	1090
Mineralized	50	22.70	Bag			7	7	49	2450	1111
	80	36.30	Bag			5	6	30	2400	1090
Compressed water softener	50	22.70	Bag			7	7	49	2450	1111
	80	36.30	Bag			5	6	30	2400	1090
Popcorn	1-1/2 (24 oz)	0.68	Round carton	24/1½	Case	14	4	56	2016	914

*Where no secondary is shown, the primary container also serves as the shipping container.

†Capacity indicates the number of primary containers in each secondary container. Thus, 15/4 means 15 four-pound primary containers or packages.

‡While 1-5/8 (26 oz) rounds are standard with all producers, table salt is also available in smaller, convenient consumer sizes, including single serving packets.

**Alternate.

§ Secondary containers are available for various types of blocks.

4.3 Rock Salt (Fine and Granulated). Mined rock salt that is screened to a grain size usually less than a No. 8 mesh sieve. It is used where a fine grade of rock salt is required, such as in free-choice cattle feeding.

4.4 Evaporated Granulated Salt. Salt produced by vacuum pan evaporation of brine under conditions designed to control crystal size and impurity. The crystal structure is cubic. The sieve size is greater than No. 16, generally ranging between a No. 20 and a No. 70 mesh sieve. The sodium chloride content usually exceeds 98%, and the color is opaque white.

Evaporated granulated salt is used by meatpackers for dry salting of meat and for pickling and curing (as a brine); by food processors for the processing of sauerkraut, cucumber pickles, and the like; and by chemical and dye industries. It is used as an ingredient in many prepared foods, in feeds for livestock, and in the zeolite process of water softening.

4.5 Undried Solar Salt. A salt produced by evaporation of sea, salt lake, or underground saline waters by sun and wind in shallow ponds. This salt does not normally contain more than 5% moisture. The coarse screenings from this process are suitable for most of the purposes for which the coarse sizes of rock salt are used.

4.6 Dry Solar, Kiln-Dried Salt. A salt that has been dried to a moisture content of less than 0.5% in a rotary kiln. It is used for the same purposes as rock salt, except where moisture is a problem.

4.7 Salt Blocks. Blocks of salt that are produced from evaporated granulated, crushed solar, or rock salt compressed into a standard block of 50 lb. These blocks are manufactured in plain, sulfur, iodized, trace mineralized (CFR 582.80), and mineral supplement (CFR 582.5997, 582.6203, 582.6215, 582.6219, 582.6285, and 582.6290) forms. Although the 50-lb block of plain salt was originally developed for cattle, it is now widely used in certain types of water softening and refrigeration systems. The regulations for labeling animal food are given under CFR Part 501.

NOTE: CFR 582.80 gives trace minerals added to animal feeds. It does not give the level at which these additives are added but does state: "These substances added to animal feeds as nutritional dietary supplements are generally recognized as safe when added at levels consistent with good feeding practice."

4.8 Salt Bricks. Small blocks similar to "salt blocks," pressed into 4-lb bricks, for animal use.

4.9 Medium (Flake) Salt. Salt ranging in size between a No. 20 and a No. 50 mesh sieve. Medium salt is produced by slow evaporation of brine in open pans at temperatures less than boiling. The crystals are cubic but aggregate into hopper-like shapes that break up into fragments known as flakes. Closely screened medium salt is classified as flake salt. The sodium chloride content usually exceeds 96%. Medium salt is sold to meatpackers and the agricultural trade. Flake salt is sold primarily for food uses.

4.10 High-grade salt. An evaporated granulated flake or solar salt that has been selected or processed to provide special features, such as high purity or fewer impurities than are usually found in these types of salt. This salt is used in certain critical applications where a guaranteed analysis is required. The particle sizes are the same as those for evaporated granulated salt.

4.11 Mineralized Salt. Salt containing trace amounts of minerals for domestic animals. The term "trace mineralized" refers to evaporated granulated, solar, or rock salts, screened to sizes less than a No. 8 mesh sieve, to which have been added trace amounts of iron, copper, iodine, cobalt, zinc, manganese (CFR 582.80), or other compounds to prevent trace mineral deficiencies that may be responsible for the poor health of farm animals or fowl. The term "mineral supplement" refers to salt products containing calcium and phosphorus (CFR 582.5997, 582.6203, 582.6215, 582.6219, 582.6285, 582.6290) and trace minerals, which are formulated to supply a balanced ratio of phosphorus and calcium that is necessary for the proper nutrition of livestock. Ferric ammonium citrate at a level of 25 ppm (CFR 573.560) or yellow prussiate of soda (CFR 573.1020) at a level of 13 ppm may be used as an anticaking agent.

NOTE: CFR 582.80 gives trace minerals added to animal feeds. It does not give the level at which these additives are added but does state: "These substances added to animal feeds as nutritional dietary supplements are generally recognized as safe when added at levels consistent with good feeding practice."

4.12 Compressed Water Softener Salt. A product compressed from evaporated granular or solar salts into "thumbnail" or smaller sizes for regenerating water softening systems. It has the advantage of high quality without the insoluble sediments found in the mined rock salt.

4.13 Popcorn Salt. Evaporated salt that is finely screened (finer than No. 60 mesh), often containing free-flowing agents for ease of application, used in seasoning popcorn.

4.14 Kosher Salt. A coarse flake salt produced by open pan evaporation under conditions approved by the Orthodox Jewish faith for use in kosher food.

4.15 Hawaiian Salt. A solar salt produced by the evaporation of seawater in clay beds. This unwashed salt, used for cooking in Hawaii, contains a small amount of red clay (alae).

American National Standards

The standard in this booklet is one of nearly 8500 standards approved to date by the American National Standards Institute.

The Standards Institute provides the machinery for creating voluntary standards. It serves to eliminate duplication of standards activities and to weld conflicting standards into single, nationally accepted standards under the designation "American National Standards."

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