Bureau of Standards

HOUSEHOLD INSECTICIDE
(LIQUID SPRAY TYPE)

COMMERCIAL STANDARDS CS72–38

Effective Date, June 10, 1938

A RECORDED STANDARD OF THE INDUSTRY

UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1938

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On September 20, 1937, the National Association of Insecticide and Disinfectant Manufacturers, Inc., proposed the establishment of a Commercial Standard for Household Insecticide (Liquid Spray Type). Accordingly, after preliminary conferences with other interested organizations, including the Federal Food and Drug Administration, the proposal was submitted on March 23, 1938, to manufacturers, distributors, and users for the approval of all concerned. The industry has since accepted and approved for promulgation by the United States Department of Commerce, through the National Bureau of Standards, the standard as shown herein.

The standard became effective on June 10, 1938.

Promulgation recommended.

Promulgated.

Promulgation approved.

I. J. Fairchild,
Chief, Division of Trade Standards.

Lyman J. Briggs,
Director, National Bureau of Standards.

Daniel C. Roper,
Secretary of Commerce.
HOUSEHOLD INSECTICIDE (LIQUID SPRAY TYPE)

COMMERCIAL STANDARD CS72–38

PURPOSE

1. The purpose of this commercial standard is to provide a specification for quality, as a basis for understanding and voluntary guarantees between producers, distributors, and users in the purchase of this commodity, and as a foundation for confidence on the part of purchasers that the efficacy of the material is that which may be expected of liquid spray type household insecticide manufactured in conformity with a nationally recognized specification.

SCOPE

2. This standard covers the methods of test, biological, physical, and chemical properties, and certification of quality of liquid spray type household insecticide.

GENERAL REQUIREMENTS

3. The killing power of the liquid spray type household insecticide shall be determined by the Official Peet-Grady Method in conjunction with the Official Test Insecticide of the National Association of Insecticide and Disinfectant Manufacturers, Inc.

4. The killing power of the insecticide shall be designated by letter and shall be in accordance with the following grading system:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Difference between 24-hour &quot;percentage kill&quot; of insecticide and that of the OTI</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA</td>
<td>+16 or greater.</td>
</tr>
<tr>
<td>A</td>
<td>+6 to +15.</td>
</tr>
<tr>
<td>B</td>
<td>−5 to +5.</td>
</tr>
</tbody>
</table>

5. This insecticide shall be harmless to man and warm-blooded household animals when used as directed.

6. When sprayed as directed, it shall not stain fabrics, wall paper, and general household furnishings that are not stained by dry-cleaning fluids.

7. When used in the customary manner, it shall not contaminate closed packages of food materials commonly found in homes.

8. It shall not corrode metals.

9. It shall have no objectionable odor, and no particular odor shall be specified.

10. It shall have a flash point not less than 125° F when tested in the Tagliabue closed cup.
METHODS OF TEST

11. Peet-Grady method.—The Peet-Grady method of determining efficiency of contact liquid insecticides is subject to variations that necessitate close attention to details of equipment and procedure to obtain comparable results. Refinements that result in higher precision are being developed by constant research and are incorporated in the official method from time to time. A copy of the official method setting forth the necessary details is available from the National Association of Insecticide and Disinfectant Manufacturers, Inc., 110 East 42d Street, New York, N. Y., or from the distributor of the "Official Test Insecticide." The following resumé is intended for general information of those not actively engaged in conducting the test:

11a. Official Test Insecticide.—To equalize variables not otherwise controlled, such as varying resistance of insects, grading is based on the killing power of the "Official Test Insecticide" prepared by the National Association of Insecticide and Disinfectant Manufacturers, Inc., and made available to all laboratories.

11b. Test insect.—House flies (Musca domestica, L.) are used. Healthy individuals are reared under prescribed conditions and used when not less than 3 nor more than 5 days old. Such insects are in general more resistant than wild house flies to insecticides.

11c. Peet-Grady test chamber.—The test chamber is a 6-foot (inside) cube, constructed of wood or metal and lined so the inner surface is smooth, relatively nonporous, and free of cracks, projections, ledges, etc. One wall is provided with a tight fitting door large enough for a man to enter conveniently, with the interior side flush with the wall when closed. The other walls and ceiling are provided with glass windows for observation and lighting; various openings are provided for admitting insects and the insecticide, and for ventilation after test.

11d. Test procedure.—Approximately 100 flies are transferred to the thoroughly cleaned Peet-Grady chamber. All ports and entrances are closed and 12 ml of the insecticide are introduced by means of a special type atomizer. The chamber is kept closed for 10 minutes beginning from the time the spray is started. At the end of this time, the ventilating ports are opened and the exhaust fan turned on. The number of flies clinging to the ceiling and walls, together with any still flying, are counted and considered unaffected by the insecticide. The flies which have fallen to the floor are carefully transferred to observation cages. At the end of 24 hours, the insects are counted and the number dead, plus those that have revived, are added to the number unaffected, to obtain the total number of flies used. The number of flies dead in the observation cage after 24 hours multiplied by 100 and divided by the total number used gives the "percentage kill." To be counted as dead, an insect must show no signs of life upon being disturbed.

11e. Grading.—The insecticide tested is graded by comparing the percentage kill with that obtained on flies of the same culture by the Official Test Insecticide. (See paragraph 4.)


1 American Society for Testing Materials, 260 South Broad Street, Philadelphia, Pa.
14. The following form of statement on labels, invoices, etc., is recommended:

The _______________ Company certifies this household insecticide (liquid spray type) to conform to all requirements of the standard adopted by the **National Association of Insecticide and Disinfectant Manufacturers, Inc.**, and recorded as Commercial Standard CS72–38 by the National Bureau of Standards of the United States Department of Commerce.
Grade ______

**EFFECTIVE DATE**

The standard became effective on June 10, 1938.

**STANDING COMMITTEE**

The following comprises the membership of the Standing Committee, which is to review, prior to circulation for acceptance, revisions proposed to keep the standard abreast of progress. Comment concerning the standard and suggestions for revision may be addressed to any member of the committee or to the Division of Trade Standards, National Bureau of Standards, which acts as secretary for the committee.

**Manufacturers:**
- L. D. Benedict, Midway Chemical Co., 5235 W. 65th St., Chicago, Ill.
- Wallace Thomas, Gulf Oil Corporation, Gulf Bldg., Pittsburgh, Pa.

**Distributors:**
- F. A. Hoyt, Frederick Disinfectant Co., Box 1556, Atlanta, Ga.
- Ellis Davidson, Ellis Davidson Co., Inc., 38 West 21st St., New York, N. Y.

**Users:**
- Dr. Stroud Jordan, Department of Purchase, City of New York, New York, N. Y.
- M. M. Donohue, Bureau of Standards, Department of Property and Supplies, Commonwealth of Pennsylvania, Harrisburg, Pa.
- Dr. C. C. McDonnell, Insecticide Division, Food and Drug Administration, U. S. Department of Agriculture, Washington, D. C.

**General interest:**
- F. W. Reynolds (secretary), Division of Trade Standards, National Bureau of Standards, Washington, D. C.

**HISTORY OF PROJECT**

On September 20, 1937, the National Association of Insecticide and Disinfectant Manufacturers, Inc., requested the establishment of a commercial standard for household insecticide (liquid spray type), and submitted as a basis for such a standard, a specification adopted officially by the Association and followed by a large proportion of the membership.

The Division of Trade Standards consulted other interested individuals and organizations, and led the discussion of the proposed commercial standard at a convention of the Association in New York City on December 6, 1937. After discussion, the convention voted to recommend establishment of a commercial standard through the regular procedure of the National Bureau of Standards.
In view of the large consumer and distributor participation during the Association convention and subsequent review of the proposed commercial standard by the Federal Food and Drug Administration, it appeared that the purpose of a public hearing had been accomplished and the situation did not warrant the calling of a general conference for further consideration of the specification.

Accordingly, on March 23, 1938, the recommended commercial standard was circulated to the industry for written acceptance by producers, distributors, and users. Following satisfactory acceptance and in the absence of active opposition, the establishment of the standard was announced June 10, 1938.
ACCEPTANCE OF COMMERCIAL STANDARD

This sheet properly filled in, signed, and returned will provide for the recording of your organization as an acceptor of this commercial standard.

Date ____________________  

Division of Trade Standards,  
National Bureau of Standards,  
Washington, D. C.

Gentlemen:

Having considered the statements on the reverse side of this sheet, we accept the Commercial Standard CS72-38 as our standard of practice in the

Production 1  
Distribution 1  
Use 1

of household insecticide (liquid spray type).

We will assist in securing its general recognition and use, and will cooperate with the standing committee to effect revisions of the standard when necessary.

Signature of individual officer ____________________ (In ink)

(Kindly typewrite or print the following lines)

Name and title of above officer ____________________

Company ____________________ (Fill in exactly as it should be listed in pamphlet)

Street address ____________________

City and State ____________________

1 Please designate which group you represent by drawing lines through the other two. Please file separate acceptances for all subsidiary companies and affiliates which should be listed separately as acceptors. In the case of related interests, trade papers, colleges, etc., desiring to record their general approval, the words “in principle” should be added after the signature.
TO THE ACCEPTOR

The following statements answer the usual questions arising in connection with the acceptance and its significance:

1. Enforcement.—Commercial standards are commodity specifications voluntarily established by mutual consent of the industry. They present a common basis of understanding between the producer, distributor, and consumer and should not be confused with any plan of governmental regulation or control. The United States Department of Commerce has no regulatory power in the enforcement of their provisions, but since they represent the will of the industry as a whole, their provisions through usage soon become established as trade customs, and are made effective through incorporation into sales contracts by means of labels, invoices, and the like.

2. The acceptor’s responsibility.—The purpose of commercial standards is to establish for specific commodities, nationally recognized grades or consumer criteria and the benefits therefrom will be measurable in direct proportion to their general recognition and actual use. Instances will occur when it may be necessary to deviate from the standard and the signing of an acceptance does not preclude such departures; however, such signature indicates an intention to follow the commercial standard where practicable, in the production, distribution, or consumption of the article in question.

3. The Department’s responsibility.—The major function performed by the Department of Commerce in the voluntary establishment of commercial standards on a Nation-wide basis is fourfold: first, to act as an unbiased coordinator to bring all branches of the industry together for the mutually satisfactory adjustment of trade standards; second, to supply such assistance and advice as past experience with similar programs may suggest; third, to canvass and record the extent of acceptance and adherence to the standard on the part of producers, distributors, and users; and fourth, after acceptance, to publish and promulgate the standard for the information and guidance of buyers and sellers of the commodity.

4. Announcement and promulgation.—When the standard has been endorsed by companies representing a satisfactory majority of production, the success of the project is announced. If, however, in the opinion of the standing committee of the industry or the Department of Commerce, the support of any standard is inadequate, the right is reserved to withhold promulgation and publication.
SUPPLEMENTARY LIST OF ACCEPTORS TO ACCOMPANY COMMERCIAL STANDARD CS72-38

(June 28, 1940)

The manufacturers, distributors, and consumers listed below indicated in writing their acceptance of Commercial Standard for Household Insecticide (Liquid Spray Type), CS72-38, during the interval between the first and second printing of this publication.

FIRMS

Albany Laboratories, Inc., Albany, N. Y.
Antrol Laboratories, Inc., Los Angeles, Calif.
Apex Chemical Co., Apex, N. C.
Bingo Co., The, Houston, Tex.
Brilco Laboratories, Inc., New York, N. Y.
C-Z Chemical Co., Beloit, Wis.
Cenol Co., Chicago, Ill.
Commercial Laboratories, Dayton, Ohio.
Creosote Products Co., Cincinnati, Ohio.
Dr. Ward’s Medical Co., Winona, Minn.
Drexel Co., The, St. Louis, Mo.
Gateway Chemical Co., Inc., Kansas City, Mo.
Guardian Chemical Co., Atlanta, Ga.
Huge Co., The, St. Louis, Mo.
Ins-Ex Manufacturing Co., New York, N. Y.
Killant Chemical Co., Fort Worth, Tex.
Master Supply Co., New York, N. Y.
McConnon & Co., Winona, Minn.
McCormick & Co., Inc., Baltimore, Md.
Midland Chemical Laboratories, Inc., Dubuque, Iowa.
Midway Chemical Co., Chicago, Ill.

Murphy Products Co., Washington, D. C.
Ohio Oil Co., The, Findlay, Ohio.
Owensboro Chemical Co., Frankfort, Ky.
Pacific Drexel Service, Oakland, Calif.
Parsons Chemical Works, Grand Ledge, Mich.
Powders Chemical Co., Milwaukee, Wis.
Pro-Tex-All Co., Inc., Evansville, Ind.
Royal Manufacturing Co. of Duquesne, Chicago, Ill.
Ruether Co., Carl H., Chicago, Ill.
Sanco Products Co., Inc., Greenville, Ohio.
Shell Oil Co., Inc., New York, N. Y.
Slagter Oil & Grease Co., Milwaukee, Wis.
Smith & Co., H. V., St. Paul, Minn.
Solarine Co., Baltimore, Md.
Teepee Chemical Co., New York, N. Y.
Thompson’s Janitor Supply Co., Dayton, Ohio.
 Trojan Products & Manufacturing Co., Chicago, III.
U. S. Sanitary Specialites Corporation, Chicago, Ill.
White Prince Products Co., Joliet, Ill.
Wyoming Valley Chemical Co., Wilkes-Barre, Pa.
Yale Oil Corporation, Billings, Mont.

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U. S. GOVERNMENT PRINTING OFFICE: 1940
ACCEP TO RS

The organizations and individuals listed below have accepted this specification as their standard of practice in the production, distribution, and use of liquid spray type household insecticide. Such endorsement does not signify that they may not find it necessary to deviate from the standard, nor that producers so listed guarantee all of their products to conform with the requirements of this standard. Therefore, specific evidence of quality certification should be obtained where required.

ASSOCIATIONS
American College of Surgeons, Chicago, Ill.
American Hospital Association, Committee on Simplification and Standardization of Hospital Furnishings, Supplies, and Equipment, Chicago, Ill.
American Hotel Association of the United States and Canada, New York, N. Y. (In principle.)
American Sanatorium Association, New York, N. Y.
Associated Industries, Ashton, Md.
National Council of Women, Consumer Interests, Belmont, Mass.
Overlook Hospital Association, Summit, N. J.

FIRMS
Abbott Co., The, Milwaukee, Wis.
Ace Supply Co., Detroit, Mich.
Acme Chemical Co., Milwaukee, Wis.
Acme Refining Co., The, Cleveland, Ohio.
Acme Sanitary Supply Co., Denver, Colo.
Adams Co., The E. B., Washington, D. C.
Advanced Exterminating Service, Chicago, Ill.
Allen & Vickers, Atlanta, Ga. (In principle.)
Allott Hardware Co., Alliance, Ohio.
Alpha Chemical Co., Inc., Baltimore, Md.
Amazon Chemical Co., Utica, Ill.
American Brush Co., Portland, Oreg.
American Desk Manufacturing Co., Temple, Tex.
American Disinfectant Co., Washington, D. C.
American Disinfecting Co., Inc., Sedalia, Mo.
American Fluoride Corporation, New York, N. Y.
American Oil and Disinfectant Corporation, New York, N. Y.
Antiseptic Products Co., The, Denver, Colo.
Antrol Laboratories, Inc., Los Angeles, Calif.
Apex Soap and Sanitary Corporation, Pittsburgh, Pa.
Apothecaries Hall Co., Waterbury, Conn.
Argosy Manufacturing Co., Kansas City, Mo.
Arkansas Paper Co., Little Rock, Ark.
Arnold Drug Co., Topeka, Kans.
Arwell, Inc., Waukegan, Ill.
Atkins Manufacturing Co., Columbia, Mo.
Atlas Sanitary Products, Inc., Wildwood, N. J.
Avidan, Inc., Henry G., Freeport, N. Y.
Azuria Chemical Co., Inc., Akron, Ohio.
Baird & McGuire, Inc., Holbrook, Mass., and St. Louis, Mo.
Bamford, Inc., M. W., Reading, Pa. (In principle.)
Banner Manufacturing Co., Denver, Colo.
Baptist State Hospital, Little Rock, Ark.
Barton Chemical Co., Chicago, Ill.
Beek Co., Arthur, Chicago, Ill.
Bell Co., S. H., Pittsburgh, Pa.
Bengal-Union Paint Organization, New
York, N. Y.
Benton Service Co., Cortland, N. Y.
Berger Supply Co., Inc., S. J., Brooklyn,
N. Y.
Bernstein Co., The, Los Angeles, Calif.
Best Chemical Co., Ft. Worth, Tex.
Beuret Chemical Laboratories, Fort
Wayne, Ind.
Birmingham, City of, Birmingham, Ala.
Black & Co., Decatur, Ill.
Black Flag Co., The, Baltimore, Md.
Blue Heven Corporation, The, North
Kansas City, Mo.
Blue Ribbon Sanitary Products, St.
Louis, Mo.
Blum & Co., Inc., D., New York, N. Y.
Bohman Brothers, Inc., Hartford, Conn.
Boren & Malone Co., Wewoka, Okla.
Bradgon Paint Co., M. F., Portland,
Maine.
Buck Laboratories, Inc., Cleveland,
Ohio.
Breslau & Lyndwood Supply Co.,
Plymouth, Pa.
Breuer Electric Manufacturing Co.,
Chicago, Ill. (In principle.)
Brier Lane Laboratories, Penns Grove,
N. J.
Brilliant Chemical Co., Inc., Brooklyn,
N. Y.
Brown, Inc., I. Edward, New York,
N. Y.
Buffalo Scientific Co., Buffalo, N. Y.
Builders’ Specialty Co., Peoria, Ill.
(Building Supply Co., Chicago, Ill.
Burwinkle-Hendershot Co., Louisville,
Ky.
Butler Co., William, Providence, R. I.
By-Nay Chemical Products, Stockton,
Calif.
Cabell Chemical Co., The, Huntington,
W. Va.
Calde Exterminating Co., New York,
N. Y.
Caldwell, Pittsburgh, Pa.
Canadian Germicide Co., Ltd., Toronto,
Canada.
Capitol Paper Co., Hartford, Conn.
(Carman-Roberts Co., Inc., Pittsburgh,
Pa. (In principle.)
Castle Chemical Co., New Castle, Pa.
Centennial Drug and Supply Co.,
Denver, Colo.
Central Chemical Co., Kansas City,
Mo.
Central Mercantile Co., St. Joseph,
Mo.
Central Supply Co., Buffalo, N. Y.
Central Wisconsin Paper Co., Wausau,
Wis.
Certified Products Co., Inc., Birming-
ham, Ala.
Certified Supply Co., New York, N. Y.
Chafee Supply Service, Shelbyville,
Ind.
Chamberlain Chemical Co., T. D.,
Scranton, Pa.
Chapman & Sons Co., W. H., Wheeling,
W. Va. (In principle.)
Charlotte Sanitary Supply Co., Char-
lotte, N. C.
Chemical Products, Inc., Shelton, Conn.
Chemical Specialties Co., Milwaukee,
Wis.
Chemical Spray Co., Minneapolis,
Minn.
Chemical Supply Co., The, Cleveland,
Ohio.
Children’s Country Home, Westfield,
N. J.
Chippewa Products, Co. St. Louis, Mo.
Christman Supply Co., Inc., Fayette-
ville, N. Y.
Cincinnati, City of, Cincinnati, Ohio.
Cities Service Oil Co. (Delaware),
Baltimore, Okla.
City Janitor Supply and Brush Co.,
St. Louis, Mo.
City Service Cleaning Contractors, Inc.,
Pittsburgh, Pa.
Claire Manufacturing Co., Chicago, Ill.
Clark’s Store Fixtures, Flint, Mich.
Clarkson Chemical Co., Inc., South
Williamsport, Pa.
Cody Chemical Co., Manchester, N. H.
Colborn School Supply Co., Grand
Forks, N. Dak.
Conkey Co., The G. E., Cleveland,
Ohio.
Conray Products Co., New York, N. Y.
Consolidated Drug Corporation, New
Orleans, La.
Consumers’ Testing Laboratories, Phila-
delphia, Pa. (In principle.)
Continental Chemical Co., The, Clevel-
dan, Ohio.
Cooper, D. L., Brooklyn, N. Y.
Cooperative G. L. F. Farm Supplies,
Inc., Phelps, N. Y.
Copley Chemical Co., Everett, Mass.
Corkins Chemical Co., The, Cincinnati,
Ohio.
Cotton Products Co., Des Moines, Iowa.
Creco Co., Inc., Long Island City,
N. Y.
Crosetti Bro. & Co., A., San Francisco,
Calif.
Crown Chemical Corporation, Mil-
waukee, Wis.
Crystal Laboratories Co., The, Pitts-
burgh, Pa.
Danville Wholesale Drug Co., Inc.,
Danville, Ill.
Darrow Chemical Co., Kansas City,
Mo.
David & Blankfield, Inc., San Antonio,
Tex.
Household Insecticide

Davies-Young Soap Co., The, Dayton, Ohio.
Deco Products Co., Inc., New York, N. Y.
Delta Chemical Co., New York, N. Y.
DeLuxe Broom Co., Portland, Oreg.
Del-Zo Co., Atlanta, Ga. (In principle.)
Den Wal Mfg. Co., The, Piermont, N. Y.
Dentocide Chemical Co., Baltimore, Md.
Derris, Inc., New York, N. Y.
DeVin Laboratories, Inc., J. F., Goshen, N. Y.
Diamond Chemical and Supply Co., Wilmington, Del.
Dixie Chemical Products Co., Ltd., Birmingham, Ala.
Dixie Disinfesting Co., Dallas, Tex.
Dolge Co., C. B., Westport, Conn.
Dow Chemical Co., The, Midland, Mich. (In principle.)
Draykus Janitor Supply Co., Ponca City, Okla.
Eau Claire Book and Stationery Co., Milwaukee, Wis.
Eckman Chemical Co., Omaha, Nebr.
Ehrlich, J. C., Reading, Pa.
Ellis Products Co., Detroit, Mich.
Empire Chemical Co., Brooklyn, N. Y.
Endo Chemical Co., Columbia, S. C.
Ens-Em Chemical Co., New York, N. Y. (In principle.)
Ephraim, Inc., Jerome W., New York, N. Y.
Exterminator Engineering Corporation, Chicago, Ill.
Farmers Union Central Exchange, Inc., South St. Paul, Minn.
Federal Sanitation Co., Inc., The, Cleveland, Ohio.
Fergusson Co., Alex C., Philadelphia, Pa.
Fischbeek Co., Inc., Charles, New York, N. Y. (In principle.)
Franklin Chemical Co., Rochester, N. Y.
Franklin Drug Store, Port Arthur, Tex.
Franklin Products Corporation, Tampa, Fla.
Franklin Thrift Stores, Co., The, Piqua, Ohio.
Frederick Disinfectant Co., Atlanta, Ga.
Frontier Alkali Corporation, Buffalo, N. Y.
Frye Co., Geo. C., Portland, Maine. (In principle.)
Fuld Brothers, Baltimore, Md.
Furst-McNess Co., Freeport, Ill.
Gakenheimer's Pharmacy, Baltimore, Md.
Gass Co., Inc., W. J., St. Louis, Mo.
Genesee Disinfecting Co., Rochester, N. Y.
Getz Exterminators, Inc., St. Louis, Mo., and other cities.
Giant Products Corporation, Los Angeles, Calif.
Gillam Soap Works, Ft. Worth, Tex.
Givaudan, Delawanna, Inc., New York, N. Y. (In principle.)
Gleam Products Corporation, Bronx, N. Y.
Globe Sanitary Supply Co., Los Angeles, Calif.
Goble Printing Co., The D. H., Greenfield, Ind.
Gordon Chemical Co., Geo. C., Kansas City, Mo.
Government Chemical Co., Cleveland, Ohio.
Grant Laboratories, Oakland, Calif.
Great Falls Paper Co., Great Falls, Mont.
Great Lakes Chemical Utilities, Buffalo, N. Y.
Green Mask Laboratories, Sioux City, Iowa.
Green Oil Soap Co., Chicago, Ill.
Greenbaum Co., Inc., C. D., New York, N. Y.
Griffin Bros., Inc., Portland, Oreg.
Griffin Chemical Co., San Francisco, Calif. (In principle.)
Griffith Laboratories, The, Chicago, Ill.
Gulf Oil Corporation, Pittsburgh, Pa.
Gulf Research and Development Co., Pittsburgh, Pa. (In principle.)
H. & L. Products Co., Linden, N. J. (In principle.)
Haag Laboratories, Inc., The, Chicago, Ill.
Hammond & Son, Inc., W. P., Milwaukee, Wis.
Hart-Shaw Drug Co., Adrian, Mich.
Hartford Sanitary Products Co., The, Hartford, Conn.
Hayner Co., Norman C., Rochester, N. Y.
Heaney Manufacturing Co., Boston, Mass.
Helgren Drug Co., Jamestown, N. Y.
Hercules Powder Co., Naval Stores Department, Wilmington, Del. (In principle.)
Hess & Clark, Inc., Dr., Ashland, Ohio.
Hill Brothers Chemical Co., Los Angeles, Calif.
Hillyard Chemical Co., St. Joseph, Mo.
Hirschberg Brothers, Chicago, Ill.
Hockwald Chemical Co., San Francisco, Calif.
Hoffman Laboratories, Detroit, Mich.
Holecmb Manufacturing Co., J. I., Indianapolis, Ind.
Hospital Bureau of Standards and Supplies, Inc., New York, N. Y.
Household Chemical Products, Brooklyn, N. Y.
Household Products Co., Indianapolis, Ind.
 Hoyt Brothers, Inc., Newark, N. J.
Hub City School Supply Co., Aberdeen, S. Dak.
Hudson Chemical Co., St. Louis, Mo.
Huggins & Son, James, Malden, Mass. (In principle.)
Hughes Chemical Co., Ft. Worth, Tex.
Huisking & Co., Inc., Chas. L., New York, N. Y.
Hunt Manufacturing Co., Cleveland, Ohio.
Hy-Glen Laboratories, Inc., Amesbury, Mass.
Hiysan Products Co., Chicago, Ill.
Imperial Chemical Co., Shenandoah, Iowa.
Imperial Laboratories, Mt. Hope, W. Va.
Imperial Sales Co., Halifax, Mass.
Industrial Chemical Laboratories, Omaha, Nebr.
Industrial Distributors, Inc., New York, N. Y.
Insect Control Service, Pittsburgh, Pa.
Interstate Chemical Manufacturing Co., Jersey City, N. J.
Interstate Sanitation Co., Inc., The, Cincinnati, Ohio.
Iowa Hospitals, State University of, Iowa City, Iowa.
Jacques Beauty Supply, Omaha, Nebr. (In principle.)
James Soap and Chemical Co., Houston, Tex.
Janitorial Supply Co., Passaic, N. J.
Janitor's Supply House, Cranston, R. I.
Johns Hopkins Hospital, The, Baltimore, Md.
Jorgenson & Co., Los Angeles, Calif.
Judson Co., The Dwight R., Hartford, Conn.
Kalo Co., The, Quincy, Ill. (In principle.)
Keller Products Co., Columbus, Ohio.
Kemiko Manufacturing Co., Irvington, N. J.
Kentucky Color and Chemical Co., Louisville, Ky.
Kerr Co., Frank W., Detroit, Mich.
Kessler Chemical Corporation, The, Philadelphia, Pa. (In principle.)
King Chemical Co., Philadelphia, Pa.
King Exterminating Co., Chicago, Ill.
Kretol Co., Inc., Washington, D. C.
Krummenacher Drug Co., Clayton, Mo.
Kuhn Manufacturing Co., The, Macon, Ga.
L. B. Drug Co., The, Gadsden, Ala.
La Maison Products, Inc., Brooklyn, N. Y.
Lambert Chemical Co., Kansas City, Mo.
Lamprey Products Co., St. Paul, Minn.
Lanair Co., Chicago, Ill.
Leader Manufacturing Co., Wilkes-Barre, Pa.
Lee Co., A., Lawrence, Mass.
Lee Co., Geo. H., Omaha, Nebr.
Lehn & Fink Products Corporation, Bloomfield, N. J.
Lehman and Sons, A. J., Harrisburg, Pa.
Lesh Oil Co., Ottawa, Kans.
Lewis Co., Inc., Samuel, New York, N. Y.
Lien Chemical Co., Chicago, Ill.
Lone Star Supply Co., Houston, Tex.
Long Beach, Better Business Bureau of, Long Beach, Calif. (In principle.)
Long Island Sanitary Supply Co., Woodside, Long Island, N. Y.
Los Angeles Chemical Co., Los Angeles, Calif.
Los Angeles, City of, Los Angeles, Calif.
Louisiana Paper Co., Ltd., Shreveport, La.
Loveland Janitor Supply Co., Wichita, Kans.
Lowe Chemical Co., Nashville, Tenn.
Macy-Nair-Dorland Co., Inc., New York, N. Y. (In principle.)
Magicleaner Corporation, New York, N. Y. (In principle.)
Maine Germicide Co., Portland, Maine.
Maintenance Supply and Service Co., Chicago, Ill.
Majestic Wax Co., Denver, Colo.
Marjo Products Co., Chicago, Ill.
Marlowe-Van Loan Corporation, High Point, N. C.
Marvel Products Co., Inc., Jacksonville, Fla.
Massasoit Chemical Co., The, Cincinnati, Ohio.
Master Chemical Co., Milwaukee, Wis.
Masury Young Co., Boston, Mass.
McKone Sales Co., Hartford, Conn.
McLeod Exterminating Service, Rochester, N. Y.
Meyer Chemical Co., Sioux City, Iowa.
Miami Products and Chemical Co., The, Dayton, Ohio.
Midwest Kildew Co., Des Moines, Iowa.
Miller Chemical Co., Inc., Omaha, Nebr.
Miller Products Co., Portland, Oreg.
(Min principle.)
Mil-Wis Chemical Co., Milwaukee, Wis.
Miracle Manufacturing Co., Ft. Wayne, Ind.
Mirax Chemical Products Corporation, St. Louis, Mo.
Missana Laboratories, Inc., Little Rock, Ark.
Monarch Printing and Supply Co., The, Marion, Ohio. (In principle.)
Monroe Exterminating Co., Chicago, Ill.
Moulder-Oldham Co., Inc., Tulsa, Okla.
Murtleough Supply Co., Tacoma, Wash.
Myers Paper Co., Memphis, Tenn.
Nash Medical Co., F. A., Galena, Ill.
National Chemical Co., New Orleans, La.
National Cleaners Products Co., New York, N. Y.
National Disinfecting Co., New York, N. Y.
National Soap Co., Detroit, Mich.
National Theatre Supply Co., Seattle, Wash.
Neway Brush Co., Hartford, Conn. (In principle.)
Newbro Drug Co., Butte, Mont.
Newerking Cleaning Fluid Co., Inc., New York, N. Y. (In principle.)
Newport Industries, Inc., General Naval Stores Division, Pensacola, Fla. (In principle.)
Newton & Co., A. E., Brooklyn, N. Y.
North American Chemical Co., New York, N. Y.
Northern Indiana Supply Co., Inc., Kokomo, Ind.
Northern Laboratories, Mason City, Iowa.
Northern School Supply Co., Fargo, N. D.
Northern School Supply Co., Great Falls, Mont.
Nowland Co., The Geo. H., Cincinnati, Ohio.
Nu-Way Exterminating Co., Newark, N. J.
O'Connor & Kremp, New York, N. Y.
O-Dor-Cide Co., The, Newark, N. J.
Ohio State University, Department of Zoology and Entomology, Columbus, Ohio. (In principle.)
Omaha School Supply Co., Omaha, Nebr.
Oneida Chemical Co., Inc., Utica, N. Y.
Orange Memorial Hospital, Orange, N. J.
Osborn Co., The Charles, Norwich, Conn.
Packer-Scott Co., Portland, Oreg.
Palmer Products, Inc., Waukesha, Wis.
Palmyra Lime Products Co., Clarksville, Tenn.
Panama Paint and Chemical Products Co., Panama City, Fla.
Paramount Laboratories, Inc., Binghamton, N. Y.
Parkin Chemical Co., Newark, N. J.
Paterson General Hospital, Paterson, N. J.
Patterson Laboratories, Inc., Detroit, Mich.
Peabody Anti-Dust Co., Peabody, Mass. (In principle.)
Pearl Supply Co., New York, N. Y.
Peerless Soap and Chemical Co., Detroit, Mich.
Penick & Co., S. B., New York, N. Y.
Penn Waxing and Janitor Supplies, Wilkes-Barre, Pa.
Pennsylvania, Commonwealth of, Department of Property and Supplies, Harrisburg, Pa.
Pennsylvania Hospital, Philadelphia, Pa.
Peripad Co., Inc., The, Indianapolis, Ind.
Phinntas Chemical Co., Inc., New York, N. Y.
Pine-O-Pine Co., Inc. of Texas, Houston, Tex.
Pintell Co., The, New York, N. Y.
Polar Chemical Co., Inc., The, Lewiston, Maine.
Port Huron Detergent Co., Inc., Port Huron, Mich. (In principle.)
Potter Drug and Chemical Corporation, Malden, Mass. (In principle.)
Pottsville Show Case and Fixture Co., Pottsville, Pa.
Powell & Co., Inc., John, New York, N. Y. (In principle.)
Practical Drawing Co., Dallas, Tex.
Premier Institutional Supplies Co., New York, N. Y.
Puro Chemicals, Inc., Cleveland, Ohio.
Quality Products Laboratories, Inc., Richmond, Va.
Range Paper Co., Inc., Virginia, Minn.
Rawleigh Co., The W. T., Freeport, Ill.
Rea's Soap Specialty, Kenton, Ohio.
Republic Chemical Co., Chicago, Ill.
Reynolds & Sons, James T., Lappeer, Mich.
Richmond Stationery Co., Inc., Richmond, Va. (In principle.)
Ridgewood Hardware Co., Inc., Ridgewater, N. J.
Rip Products, Jamaica, Long Island, N. Y.
Roberts & Meek, Inc., Harrisburg, Pa.
Rochester Germicide Co., Rochester, N. Y.
Rochester Janitor Supplies, Inc., Rochester, N. Y.
Rochester Laboratories, Rochester, Minn. (In principle.)
Rockwell Co., The, Pittsfield, Mass.
Rose Exterminator Co. of San Francisco, Calif., San Francisco, Calif.
Roure-Dupont, Inc., New York, N. Y. (In principle.)
Rupp & Bowman Co., The, Toledo, Ohio.
St. John's Hospital, Brooklyn, N. Y.
St. Louis Janitor Supply Co., St. Louis, Mo.
St. Luke's Hospital, Bethlehem, Pa.
Sancamo Disinfecting Co., Springfield, Ill.
Sanitary Appliance Co., Elmira, N. Y.
Satragn & Clemenson, Inc., Sioux City, Iowa.
Savannah Brush Co., Savannah, Ga.
Scientific Exterminating and Fumigating Co., West New York, N. Y.
Scientific Exterminating Research Laboratories, Brooklyn, N. Y.
Scientific Supply Co., Inc., Denver, Colo.
Scranton Better Business Bureau, Scranton, Pa. (In principle.)
Seacoast Laboratories, Inc., New York, N. Y.
Seaver Laboratories, Beloit, Wis. (In principle.)
Selig Co., The, Atlanta, Ga.
Selma Chemical Products Co., New York, N. Y.
Sentinel Chemical Co., Inc., Oakland, Calif.
Sentinel Sanitary Supply Co., Oakland, Calif.
Service Station Supply Co., Charlotte, N. C.
Shearer Co. of California, B. F., San Francisco, Calif.
Shell Petroleum Corporation, St. Louis, Mo.
Shepard Supply Co., M. F., Bayonne, N. J.
Sinclair Refining Co., New York, N. Y.
Sioux Falls Book and Stationery Co., Sioux Falls, S. Dak.
Skinner & Sherman, Inc., Boston, Mass. (In principle.)
Smith & Co., S. A., New York, N. Y.
Snell, Inc., Foster D., Brooklyn, N. Y.
Solvent Compounds Co., Redwood City, Calif.
Southern Chemical Co., Charleston, W. Va.
Southern Products Co., Chattanooga, Tenn.
Southwestern Mill Distributors, El Paso, Tex.
Staneco, Inc., New York, N. Y.
Standard Chemical Co., St. Louis, Mo. (In principle.)
Standard Janitors Supply Co., Inc., New York, N. Y.
Standard Oil Co. of California, San Francisco, Calif.
Standard Oil Co. (Indiana), Chicago, Ill.
Standard Oil Co., The (Ohio), Cleveland, Ohio.
Standard Tar Products Co., Milwaukee, Wis.
Star Chemical Co., Inc., San Antonio, Tex.
Star Drug Store, Galveston, Tex.
Sterling Soap and Chemical Co., Inc., Wilmington, Del.
Styron-Beggs Co., The, Newark, Ohio.
Suhm Co., Inc. (Formerly Cream City Chemical Works), Milwaukee, Wis.
Sun Chemical Co., Cincinnati, Ohio.
Sunrise Supply Co., New York, N. Y.
Superior Chemical Co., Houston, Tex.
Superi Supply Co., Inc., Los Angeles, Calif.
Sweeney, Manufacturer, W. R., Salisbury, Mo.
Sweet Ozone Co., Brooklyn, N. Y.
Household Insecticide

Waleh, William Henry, Chicago, Ill.
Waltham Chemical Co., Waltham, Mass.
Ward, Davis & Dunn, Inc., Los Angeles, Calif.
Wasatch Chemical Co., Salt Lake City, Utah.
Watkins Co., The J. R., Winona, Minn.
West Disinfecting Co., Long Island City, N. Y.
Wetalene Lab. Inc., Columbus, Ohio.
(Inc principle.)
White Co., L. J., Chicago, Ill.
White Tar Co. of N. J., Inc., The, Kearny, N. J.
Whitmire Research Corporation, St. Louis, Mo.
Wholesale Janitors' Supply Co., Chicago, Ill.
Whopper Sales, Buffalo, N. Y.
Wichita Broom and Floor Sweep Co., Wichita Falls, Tex. (Inc principle.)
Wilbur Chemical Co., North Bergen, N. J.
Williams Chemical Laboratories, Springfield, Ill.
Willis Sanitary Products Co., Lincoln, Nebr.
Willis Supply Co., Duluth, Minn.
Winsale Drug Co., Brooklyn, N. Y. (Inc principle.)
Wisconsin, State of, Bureau of Purchases, Madison, Wis. (Inc principle.)
Wollen Chemical and Supply Co., Paterson, N. J.
Wonder Products Co., Salisbury, N. C.
World Spray Co., Inc., Los Angeles, Calif.
Yaege-Jacquin Co., Peoria, Ill.
York Co., The G. W., Madrid, Iowa.
Zahr Soap Manufacturing Co., Kansas City, Mo.

U. S. Government

Agriculture, U. S. Department of, Washington, D. C.
COMMERCIAL STANDARDS

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<thead>
<tr>
<th>CS No.</th>
<th>Item</th>
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<tr>
<td>0-30.</td>
<td>The commercial standards service and its value to business.</td>
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<tr>
<td>2-30.</td>
<td>Mopsticks.</td>
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<tr>
<td>4-29.</td>
<td>Staple porcelain (all-clay) plumbing fixtures.</td>
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<tr>
<td>5-29.</td>
<td>Steel pipe nipples.</td>
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<tr>
<td>7-29.</td>
<td>Standard weight malleable iron or steel screwed unions.</td>
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<tr>
<td>10-29.</td>
<td>Brass pipe nipples.</td>
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<tr>
<td>11-29.</td>
<td>Regain of mercerized cotton yarns.</td>
</tr>
<tr>
<td>14-31.</td>
<td>Boys' blouses, button-on waists, shirts, and junior shirts.</td>
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<tr>
<td>15-29.</td>
<td>Men's pajamas.</td>
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<td>16-29.</td>
<td>Wall paper.</td>
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<tr>
<td>18-29.</td>
<td>Hickory golf shafts.</td>
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<tr>
<td>22-30.</td>
<td>Builders' hardware (nontemplate).</td>
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<tr>
<td>23-30.</td>
<td>Feldspar.</td>
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<tr>
<td>25-30.</td>
<td>Special screw threads.</td>
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<tr>
<td>26-30.</td>
<td>Aromatic red cedar closet lining.</td>
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<td>33-32.</td>
<td>Knit underwear (exclusive of rayon).</td>
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<tr>
<td>35-31.</td>
<td>Plywood (Hardwood and Eastern Red Cedar).</td>
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<tr>
<td>37-31.</td>
<td>Steel bone plates and screws.</td>
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<tr>
<td>38-32.</td>
<td>Hospital rubber sheeting.</td>
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</tbody>
</table>

Notice.—Those interested in commercial standards with a view toward accepting them as a basis of everyday practice in their industry, may secure copies of the above standards, while the supply lasts, by addressing the Division of Trade Standards, National Bureau of Standards, Washington, D. C.