National Bureau of Standards

MAY 3 1 1941

CS70-41 Disinfectant: Phenolic (Emulsifying Type)

Disinfectant: Phenolic (Soluble Type)

U. S. DEPARTMENT OF COMMERCE

JESSE H. JONES, Secretary

NATIONAL BUREAU OF STANDARDS

LYMAN J. BRIGGS, Director

PHENOLIC DISINFECTANT (EMULSIFYING TYPE)

(SECOND EDITION)

COMMERCIAL STANDARD CS70-41 Supersedes Coal Tar Disinfectant (Emulsifying Type), CS70-38

PHENOLIC DISINFECTANT (SOLUBLE TYPE)

Effective Date for New Production From February 1,050 Production February 1,0



RECORDED VOLUNTARY STANDARDS OF THE TRADE

UNITED STATES GOVERNMENT PRINTING OFFICE WASHINGTON: 1941

PROMULGATION

of

COMMERCIAL STANDARD CS70-41

for

PHENOLIC DISINFECTANT (EMULSIFYING TYPE)

(Second Edition)

On September 20, 1937, the National Association of Insecticide and Disinfectant Manufacturers, Inc., proposed the establishment of a Commercial Standard for Coal Tar Disinfectant (Emulsifying Type), which was subsequently accepted in writing by the trade and published as Commercial Standard CS70-38.

On November 5, 1940, with the endorsement of the Standing Committee, a revision of CS70-38, under the title, "Phenolic Disinfectant (Emulsifying Type)," drafted by the Disinfectant Scientific Committee of the National Association of Insecticide and Disinfectant Manufacturers, Inc., was circulated for acceptance. Those concerned have since accepted and approved for promulgation by the United States Department of Commerce, through the National Bureau of Standards, the revised standard as shown herein.

The standard became effective for new production from February 1,

1941.

Promulgation recommended.

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

Promulgated.

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

Promulgation approved.

Jesse H. Jones, Secretary of Commerce.

PHENOLIC DISINFECTANT (EMULSIFYING TYPE)

(Second Edition)

COMMERCIAL STANDARD CS70-41

PURPOSE

1. The purpose of this commercial standard is to provide a minimum specification for quality, as a basis for understanding and voluntary guaranties between producers, distributors, and users in the purchase of the commodities covered by these specifications, and as a foundation for confidence on the part of purchasers that the efficacy of the material is that which may be expected of phenolic disinfectant (emulsifying type), manufactured in conformity with a nationally recognized specification.

SCOPE

2. This standard covers materials, physical and chemical properties, and certification of quality of phenolic disinfectant (emulsifying type).

GENERAL REQUIREMENTS

3. It shall be made from phenols of coal tar or petroleum origin, or combinations of such phenols with coal-tar oils, and an emulsifying agent.

4. It shall contain not less than 65 percent by weight of phenols

and coal-tar oils.

5. It shall contain not over 10 percent of water, by weight.

6. It shall not contain kerosene or any petroleum distillates other than phenols of petroleum origin.

7. The phenol coefficient shall be determined by the Food and Drug Administration method, using B. typhosus as test organism, and shall be clearly stated on the label attached to each shipping container.1

8. It shall make milky emulsions with water of zero hardness at 20° C (68° F) when diluted in the ratio of 5 parts of disinfectant to 95 parts of water for disinfectants having phenol coefficients of 10 or under; and in the ratio of 2 parts of disinfectant to 98 parts of water for disinfectants having phenol coefficients of over 10. These emulsions shall show not more than a trace of oily float or sediment when stored for 5 hours at room temperature.

9. It shall remain limpid, showing no sign of naphthalene crystal-

lization down to 0° C in 3 hours.

10. It shall contain less than 5 percent of benzophenol (phenol, C_6H_5OH).

11. The disinfectant, under normal and reasonable conditions of storage, shall remain stable and show no loss of germicidal value.

¹ This type of disinfectant is available with phenol coefficients ranging from 2 to 30, and higher. Contract buyers should specify the phenol coefficient desired.

CERTIFICATION AND LABELING

12. The following form of statement on labels, invoices, etc., is recommended:

The _____ Company certifies this phenolic disinfectant (emulsifying 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 CS70-41 by the National Bureau of Standards of the U. S. Department of Commerce. Phenol coefficient

EFFECTIVE DATE

The standard became effective for new production from February 1, 1941.

STANDING COMMITTEE

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 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:

GORDON BAIRD (Chairman), Baird & McGuire, Inc., Holbrook, Mass. H. W. Hamilton, The White Tar Co. of New Jersey, Inc., Kearny, N. J. Dr. E. G. Thomssen, The J. R. Watkins Co., Winona, Minn.

Distributors: J. W. Schiffer, The Federal Sanitation Co., Inc., 2340 Euclid Ave., Cleveland,

F. A. Hoyt, Frederick Disinfectant Co., Box 1556, Atlanta, Ga.

ELLIS DAVIDSON, Ellis Davidson Co., Inc., 38 W. 21st St., New York, N. Y. Users:

Dr. A. H. Johnson, Sealtest, Inc., 1403 Eutaw Place, Baltimore, Md. Dr. C. C. McDonnell, Agricultural Marketing Service, U. S. Department of Agriculture, Washington, D. C.

ROBERT S. FUQUA, Johns Hopkins Hospital, Baltimore, Md.

General Interest:

F. W. REYNOLDS (secretary), Division of Trade Standards, National Bureau of Standards, Washington, D. C.

HISTORY OF PROJECT

(For history of this project, see page 7)

ACCEPTORS

The organizations and individuals that have accepted this specification as their standard of practice are listed, with the acceptors of CS71-41, beginning on page 11.

² When used on labels, this statement is in addition to, and not in lieu of, the ingredient statement required by the Insecticide Act of 1910.

PHENOLIC DISINFECTANT (SOLUBLE TYPE)

(SECOND EDITION)

COMMERCIAL STANDARD CS71-41

Supersedes Cresylic Disinfectants, CS71-38

PROMULGATION

of

COMMERCIAL STANDARD CS71-41

for

PHENOLIC DISINFECTANT (SOLUBLE TYPE)

(Second Edition)

On September 20, 1937, the National Association of Insecticide and Disinfectant Manufacturers, Inc., proposed the establishment of a Commercial Standard for Cresylic Disinfectants, which was subsequently accepted in writing by the trade and published as Commercial Standard CS71-38.

On November 5, 1940, with the endorsement of the Standing Committee, a revision of CS71-38, under the title, "Phenolic Disinfectant (Soluble Type)", drafted by the Disinfectant Scientific Committee of the National Association of Insecticide and Disinfectant Manufacturers, Inc., was circulated for acceptance. Those concerned have since accepted and approved for promulgation by the United States Department of Commerce, through the National Bureau of Standards, the revised standard as shown herein.

The standard became effective for new production from February 1, 1941.

941.

Promulgation recommended.

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

Promulgated.

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

Promulgation approved.

Jesse H. Jones, Secretary of Commerce.

PHENOLIC DISINFECTANT (SOLUBLE TYPE)

(Second Edition)

COMMERCIAL STANDARD CS71-41

PURPOSE

1. The purpose of this commercial standard is to provide a minimum specification for quality, as a basis for understanding and voluntary guaranties between producers, distributors, and users in the purchase of the commodity covered by these specifications, and as a foundation for confidence on the part of purchasers that the efficacy of the material is that which may be expected of phenolic disinfectant (soluble type) manufactured in conformity with a nationally recognized specification.

SCOPE

2. This standard covers materials, physical and chemical properties, and certification of quality of phenolic disinfectant (soluble type), classified under two groups as follows:

Group I.—Phenolic disinfectants having phenol coefficients from

1.5 to 5.1

Group II.—Phenolic disinfectants having phenol coefficients above 5.

DETAIL REQUIREMENTS (GROUP I)

3. Group I disinfectants shall be made from cresol or cresylic acid

of coal tar or petroleum origin, and a dissolving agent.

4. Group I disinfectants shall contain not less than 50 percent of cresol or cresylic acid, as determined by the method prescribed in U. S. Pharmacopoeia XI for the assay of cresol in the saponated solution of cresol.

5. Group I disinfectants shall contain not more than 25 percent by weight of inert ingredients (water plus glycerine, and organic

solvents, if any).

6. The phenol coefficient of group I disinfectants shall be determined by the Food and Drug Administration method, using B. typhosus as the test organism, and shall be clearly stated on the label attached to each shipping container.

7. Group I disinfectants shall contain less than 5 percent of benzo-

phenol (phenol, C₆H₅OH).

8. Group I disinfectants shall make clear solutions with water of zero hardness at 20° C (68° F) within the concentration range of from 1 to 4 percent; such solutions, when kept in closed containers, shall remain either practically clear or become only slightly opalescent when allowed to stand for 24 hours at 20° C (68° F) away from direct light.

¹ The disinfectants of group I fall within the type commonly designated "Cresylic disinfectants,"

9. Group I disinfectants shall show no soap separation when cooled down to 0° C and held at this temperature for 3 hours.

DETAIL REQUIREMENTS (GROUP II)

10. Group II disinfectants shall be made from phenols of coal tar or petroleum origin, and a dissolving agent.

11. Group II disinfectants shall contain not less than 50 percent

of phenols.2

12. Group II disinfectants shall contain not more than 25 percent by weight of inert ingredients (water plus glycerine and organic

solvents, if anv).

13. The phenol coefficients of group II disinfectants shall be determined by the Food and Drug Administration method, using B. typhosus as the test organism, and shall be clearly stated on the label attached to each shipping container.

14. Group II disinfectants shall contain less than 5 percent of benzo-

phenol (phenol, C₆H₅OH).

15. Group II disinfectants shall make clear solutions with water of zero hardness at 20° C (68° F) at concentrations of 2 percent or less; such solutions, when kept in closed containers, shall remain either practically clear or become only slightly opalescent when allowed to stand for 24 hours at 20° C (68° F) away from direct light.

16. Group II disinfectants shall show no soap separation when cooled down to 0° C and held at this temperature for 3 hours.

CERTIFICATION AND LABELING

17. The following form of statement on labels, 3 invoices, etc., is recommended:

to conform to all requirements for Group I) of the standard adopted by the NATIONAL ASSOCIATION OF INSECTICIDE AND DISINFECTANT MANUFACTURERS, INC., and recorded as Commercial Standard CS71-41, by the National Bureau of Standards of the U.S. Department of Commerce. The _____ Company certifies this disinfectant Phenol coefficient

EFFECTIVE DATE

The standard became effective for new production from February 1, 1941.

STANDING COMMITTEE

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 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.

A satisfactory method of assay of all possible types of disinfectants comprised by group II is not available, but work on the subject is in progress,

³ When used on labels, this statement is in addition to, and not in lieu of, the ingredient statement required by the Insecticide Act of 1910.

Manufacturers:

GORDON BAIRD (chairman), Baird & McGuire, Inc., Holbrook, Mass. H. W. Hamilton, The White Tar Co. of New Jersey, Inc., Kearny, N. J. Dr. E. G. Thomssen, The J. R. Watkins Co., Winona, Minn.

Distributors:

J. W. Schiffer, The Federal Sanitation Co., Inc., 2340 Euclid Ave., Cleveland, Ohio.

F. A. HOYT, Frederick Disinfectant Co., Box 1556, Atlanta, Ga. Ellis Davidson, Ellis Davidson Co., Inc., 38 W. 21st St., New York, N. Y.

Dr. A. H. Johnson, Sealtest, Inc., 1403 Eutaw Place, Baltimore, Md.

Dr. C. C. McDonnell, Agricultural Marketing Service, U. S. Départment of Agriculture, Washington, D. C.

ROBERT S. FUQUA, Johns Hopkins Hospital, Baltimore, Md.

General interest:

F. W. REYNOLDS (secretary), Division of Trade Standards, National Bureau of Standards, Washington, D. C.

HISTORY OF PROJECTS

On September 20, 1937, the National Association of Insecticide and Disinfectant Manufacturers, Inc., requested the establishment of a commercial standard for coal-tar disinfectant (emulsifying type) and for cresylic disinfectants, and submitted as a basis for such standards, specifications 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 standards at a convention of the Association in New York City on December 6, 1937. After discussion, the convention voted to recommend establishment of commercial standards 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 standards by the Federal Food and Drug Administration, it appeared that the purpose of a public hearing had been accom-plished and the situation did not warrant the calling of a general conference for further consideration of the specifications.

Accordingly, on March 23, 1938, the recommended commercial standards were 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 standards was announced June 10, 1938, designated CS70-38 and

CS71-38, respectively, effective from date of announcement.

First revision.—The development of methods for obtaining phenolic compounds from petroleum led to a desire for revision of CS70-38 and CS71-38 to permit the use of these compounds in disinfectants conforming to the commercial standards. On November 5, 1940, with the endorsement of the standing committees, revisions of CS70-38 and CS71-38, under the titles "Phenolic Disinfectant (Emulsifying Type)" and "Phenolic Disinfectant (Soluble Type)", drafted by the Disinfectant Scientific Committee of the National Association of Insecticide and Disinfectant Manufacturers, Inc., were circulated for acceptance, and their establishment as CS70-41 and CS71-41, respectively, was announced January 17, 1941.



If acceptance has not previously been filed, this sheet properly filled in, signed, and returned will provide for the recording of your organization as an acceptor of the commercial standards checked.

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 Standards checked below as our standard of practice in the Production 1 Distribution ¹ Use 1 of the respective commodities covered. --- Phenolic Disinfectant (Emulsifying Type), CS70-41. --- Phenolic Disinfectant (Soluble Type), CS71-41. We will assist in securing their general recognition and use, and will cooperate with the standing committees to effect revisions of the standards when necessary. Signature of individual officer (Kindly typewrite or print the following lines) Name and title of above officer Organization _____ (Fill in exactly as it should be listed) Street address City and State

Cut on tais ine,

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 those concerned. 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 interested groups 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 interested parties 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 a satisfactory majority of production or consumption in the absence of active, valid opposition, the success of the project is announced. If, however, in the opinion of the standing committee or the Department of Commerce, the support of any standard is inadequate, the right is reserved to withhold promulgation and publication.

ACCEPTORS

The organizations and individuals listed below have accepted Commercial Standards CS70-41 and CS71-41 as their standards of practice in the production, distribution, and use of emulsifying and soluble types of phenolic disinfectants. Such endorsement does not signify that they may not find it necessary to deviate from the standards, nor that producers so listed guarantee all of their products in the respective fields to conform with the requirements of the standard. Therefore, specific evidence of quality certification should be obtained where required.

Notation after the name indicates those who have accepted one standard but not the other. Acceptance of one standard only does not imply necessarily that the organization disapproves the standard not accepted; in most instances it indicates merely that the organization was not engaged, at the time the acceptance was filed, in pro-

duction, distribution, or use of the type not accepted.

ASSOCIATIONS

American Hospital Association, Committee on Simplification & Standardization, Chicago, Ill.

nerican Hotel Association of the United States & Canada, New York, American

N. Y. (CS71-41) American Protestant Hospital Associa-

tion, Little Rock, Ark.
Food, Drug & Cosmetic Institute,
Chicago, Ill. (In principle.)

Hospital Bureau of Standards & Sup-

plies, New York, N. Y.
National Council of Women of the
United States, Inc., New York, N. Y.
National Association of Insecticide & Disinfectant Manufacturers, New York, N. Y.

FIRMS

Abbott Co., The, Milwaukee, Wis. Acme Sanitary Supply Co., Denver, Colo.

Adams & Co., Fred C., Chicago, Ill. Alabama School Supply Co., Mont-

gomery, Ala. bany Laboratories, Albany Inc., Albany, N. Y.

Albany Paper Co., Inc., Albany, Ga. All American Products Corporation, Rutherford, N. J.

Alpha Chemical Co., Inc., Baltimore, Md.

Amazon Chemical Co., Utica, Ill. American Brush Co., Inc., Portland,

Co., American Desk Manufacturing Temple, Tex.

American Disinfecting Co., Inc., Sedalia,

American Fluoride Corporation, New York, N. Y. American Oil & Disinfectant Corpora-

tion, New York, N. Y. (CS70-41). American Seating Co., Grand Rapids,

Mich. American Veterinary Laboratories, Inc.,

Kansas City, Mo. Ames Chemical Works, Inc., M., Glens Falls, N. Y. (In principle.) Ampion Corporation, Long Island City,

N. Y.
Anaco, Inc., Long Island City, N. Y.
Apex Chemical Co., Apex, N. C.
Apothecaries Hall Co., Waterbury,

Conn.

Arizona Janitor Supply Co., Phoenix, Ariz. Arkansas, Baptist State Hospital of,

Little Rock, Ark.

Arkansas Paper Co., Little Rock, Ark. Arnold Drug Co., The, Topeka, Kans. Astor Exterminating Co., Boston, ${
m Mass}.$

Atlas Supply Co., Inc., Atlanta, Ga. Baird & McGuire, Inc., Holbrook, Mass. Baird & McGuire, Inc. of Missouri, St. Louis, Mo.

Baldwin Laboratories, Inc., town, Pa.

Bamberger & Co., L., Newark, N. J. Banner Manufacturing Co., Denver, Colo.

Barada & Page, Inc., Kansas City, Mo. Baren-Malone Co., Wewoka, Okla. Baron Co., Inc., H. J., El Paso, Tex.

Barr-Dawley Corporation, New York, Chrisman Supply Co., Inc., Fayette-

Beck Co., Arthur, Chicago, Ill. (In principle.)

Bell Co., S. H., Pittsburgh, Pa.
Bellevue Chemical Co., Brooklyn, N. Y.
Berger Supply Co., Inc., S. J., Brooklyn,
N. Y. (CS70-41).
Berkshire Mill Supply Co., Pittsfield,

Mass. (CS71-41).
Berlet, Edward B., Baltimore, Md. Best Chemical Co., Ft. Worth, Tex. Beuret Chemical Laboratories, Ft. Wayne, Ind. Birchard System, Inc., The, Hartford,

Conn.

Birmingham, City of, Birmingham, Ala.

Black & Co., Decatur, Ill. (CS71-41). Bliss Exterminator Co., Inc., New York, N. Y.

Bockstanz Brothers Co., Detroit, Mich. Booth & Co., J. M., El Paso, Tex.

Bradley Co., Milton, Springfield, Mass. Braham Laboratories, Inc., Cleveland, Ohio.

Bram Chemical Co., Philadelphia, Pa. Braun Corporation, Los Angeles, Calif. (CS71-41).

Breuer Electric Manufacturing Co., Chicago, Ill. (In principle.)

Bridge Hardware Co., Inc., New York,

N. Y.
Brown, Inc., I. Edward, New York,
N. Y.

Burkart-Schier Chemical Co., Chattanooga, Tenn. Cabell Chemical Co., The, Huntington,

W. Va.

Carter Co., Walter J., Cleveland, Ohio. Carter Sanitary Supply Co., Inc., The, Cincinnati, Ohio. Cenol Co., Chicago, Ill.

Centennial Drug & Supply Co., Denver, Colo.

Central Chemical Co., Kansas City, Mo.

Central Mercantile Co., St. Joseph, Mo.

Central Supply Co., Buffalo, N. Y. Century Chemical Products Co., Detroit, Mich.

Certified Products Co., Birmingham, Ala.

Certified Supply Co., New York, N. Y. Chamberlain Chemical Co., T. D., Scranton, Pa. Chemical Industries, San Francisco,

Chemical Products, Inc., Shelton, Conn. Chemical Specialties Co., Chicago, Ill. Chemical Specialties Co., Milwaukee,

Chemical Supply Co., The, Cleveland, Ohio.

Children's Country Home, Westfield, N. J.

ville, N. Y.

Cincinnati, City of, Department Purchasing, Cincinnati, Ohio. City Janitor Supply & Brush Co., St.

Louis, Mo. Clarkson Chemical Co., Inc., S. Williamsport, Pa.

Laboratory, The, Newark, Clinical N.J.

Colborn School Supply Co., Grand Forks, N. Dak.

Cole Co., Arthur, Gresham, Oreg. Collier & Sons, Inc., H. C., Binghamton,

N. Y. Commercial Laboratories. Dayton.

Ohio.

Conkey Co., The G. E., Cleveland, Ohio. Consolidated Drug Corporation, New

Orleans, La. Consumers' Testing Laboratories, Phila-

delphia, Pa. (In principle.) Continental Chemical Co., Cleveland,

Ohio. Continental Manufacturing Co., Indi-

anapolis, Ind. Continental Sanitary & Exterminator

Co., Springfield, Mo.
Coop, G. L. F. Soil Building Service,
Inc., Ithaca, N. Y.

Distributing Co.. Cooper Brooklyn, N. Y. Cooper & Nephews, William, Chicago,

Ill.

Coopers Creek Chemical Corporation, West Conshohocken, Pa. Copley Chemical Co., Everett, Mass.

Corkins Chemical Co., The, Cincinnati, Ohio.

Cotton Products Co., Des Moines, Iowa.

Cox, Aspden & Fletcher, New York, N. Y.

Creco Co., Inc., Long Island City, N. Y.

Crosetti Bro. & Co., A., San Francisco, Calif.

Crown Zellerbach Corporation, Sanitary Products & Paper Co. Division, Philadelphia, Pa. (CS70-41.) Crystal Soap & Chemical Co., Inc.,

Philadelphia, Pa. anville Wholesale Drug Co., Inc., Danville Danville, Ill.

Darrow Chemical Co., Kansas City, Mo.

Davidson Co., Inc., Ellis, New York,

Davies-Young Soap Co., The, Dayton, Ohio.

De Pree Co., The, Holland, Mich.

Deco Products Co., Inc., New York, N. Y.

Dentocide Chemical Co., Baltimore, Md.

Des Moines Sanitary Supply, Des Getem Moines, Iowa.

DeVine Laboratories, Inc., J. F., Gos-

hen, N. Y. Dix Manufacturing Co., Cincinnati, Ohio.

Dixie Chemical Co., Inc., New Orleans, La.

Disinfecting Co., Dallas, Tex. Dixie (CS70-41.)

Dolge Co., The C. B., Westport, Conn. Dow Chemical Co., The, Midland, Mich. (In principle.)

du Pont de Nemours & Co., Inc., E. I.,

Wilmington, Del. (In principle.)
Durfee Co., The, Grand Rapids, Mich. States Farmers' Exchange, Eastern

Springfield, Mass.
Ecclestone Chemical Co., Inc., The,
Detroit, Mich.
Eckhardt Physicians & Surgeons Supply

Co., Austin, Tex.

Eckman Chemical Co., Inc., Omaha, Nebr.

Educator Supply Co., Mitchell, S. Dak. Elk & Co., Inc., B. R., Garfield, N. J. Ellis Products Co., Detroit, Mich. Engo Chemical Co., Columbia, S. C.

Farmers Union Central Exchange, Inc., South St. Paul, Minn.

Federal Pest Control Service, Atlantic City, N. J.

Federal Sanitation Co., Inc., The. Cleveland, Ohio.

Fergusson Co., Alex C., Philadelphia, Pa. Fidelity Fire Protection Co., Phila-

delphia, Pa. Fort Pitt Chemical Co., Pittsburgh, Pa.

Frank Disinfecting Co., P. M., New York, N. Y. Frankle, Inc., Joseph E., Philadelphia,

Franklin Janitor Supply Co., St. Louis,

Franklin Products Corporation, Tampa, Fla.

Frederick Disinfectant Co., Atlanta,

Friends Hospital, Philadelphia, Pa. Frontier Alkali Corporation, Buffalo, N. Y.

Frontier Products, Buffalo, N. Y. Fuld Bros., Baltimore, Md. Furst-McNess Co., Freeport,

(CS70-41).

Gard Distributors, Portland, Oreg. Gateway Chemical Co., Inc., Kansas City, Mo. General Petroleum Corporation of Cali-

fornia, Los Angeles, Calif. Genesee Disinfecting Co., Rochester,

N. Y. Genesee Glassware & Supply Co., Buf-

falo, N. Y Germalene Chemical Co., Inc., Houston, Tex.

Manufacturing Co., Norfolk, Va. (CS70-41).

Giant Products Corporation, Los Angeles, Calif.

Gillam Soap Works, Ft. Worth, Tex. Gobell Co., John J., New Bedford, Mass.

Good, Inc., James, Philadelphia, Pa. Gordon Chemical Co., George Kansas City, Mo. Government Chemical Co., Cleveland,

Ohio. Great Lakes Chemical Utilities, Buffalo.

N. Y. Greenbaum Co., Inc., C. D., New York, N. Y.

Griffin Chemical Co., San Francisco, (In principle.) Calif.

H. P. Chemical Products Co., Indianapolis, Ind.

Hainsworth Supply Co., Philadelphia,

Harley Soap Co., Philadelphia, Pa. Harrisburg State Hospital, Harrisburg,

Hartford Sanitary Products Co., The, Hartford, Conn.

Harvey Research, Boston, Mass. Hess & Clark, Inc., Dr., Ashland, Ohio. Hewes-Gotham Co., New York, N. Y. Hillyard Sales Co., St. Joseph, Mo. Hilts Laboratories, Ltd., Honolulu,

Т. Н.

Hirschberg Brothers, Chicago, Ill. Hirsh & Son, Leon, New York, N. Y. Hockwald Chemical Co., San Francisco, Calif.

Holcomb Manufacturing Co., J. I., Indianapolis, Ind.

Hub City School Supply Co., Aberdeen, S. Dak.

Hudson Chemical Co., St. Louis, Mo. Huge, Co., The, St. Louis, Mo. Huggins & Son, James, Malden, Mass. Hunt Manufacturing Co., The, Cleve-

land, Ohio. Huntington Laboratories, Inc., Hunt-

ington, Ind. Hysan Products Co., Chicago, Ill. Illinois Farm Supply Co., Chicago, Ill.

Imperial Chemical Co., Shenandoah, Iowa.

Imperial Laboratories, Mt. Hope, W. Vа.

Imperial Products Co., Philadelphia, Pa.

Industrial Chemical Laboratories, Omaha, Nebr.

Industrial Chemical Products Co., Philadelphia, Pa. Industrial Distributors, Inc., New York,

N. Y.

Industrial Materials Co., The, Houston, Tex.

Industrial Soap Co., St. Louis, Mo. Interstate Sanitation Co., Inc., The, Cincinnati, Ohio.

J. E. T. Pharmacal Co., Allentown, Pa. Janitorial Supply Co., Inc., Passaic,

N.J.

Janitor's Supply House, Cranston, R. I. Johnson Co., The George T., South Boston, Mass. Bro., æ Inc., William E., Jordan

Brooklyn, N. Y.
Jordan, Jr. Manufacturing Co., W. H.
& F., Philadelphia, Pa.

Judson Co., The Dwight R., Hartford,

Keller Products Co., Columbus, Ohio. Kemiko Manufacturing Co., Irvington,

Kentucky Color & Chemical Co., Inc., Louisville, Ky

Kerr Co., Frank W., Detroit, Mich. Keystone Sanitary Supply Co., Greens-

burg, Pa. Killant Chemical Co., Ft. Worth, Tex. King Chemical Co., Philadelphia, Pa. Kischel Wholesale Grocery Co., Wau-

sau, Wis.

Kleen Rite Cleaner, Chicago, Ill. Klein Elevator, Blue Island. Ill. (CS70-41).

Knoxall Corporation, Indianapolis, Ind. Knoxville Paper Co., Knoxville, Tenn. (CS70-41).

Korite, Inc., Pawtucket, R. I. (CS70-41).

Krummenacher Drug Co., Clayton, Mo. L. B. Drug Co., The, Gadsden, Ala. (CS71-41).

La Maison Products, Inc., Brooklyn, N. Y.

La Wall & Harrisson, Philadelphia, Pa.

(In principle.) Lambert Chemical Co., Kansas City,

Mo. Lambert Pharmacal Co., St. Louis, Mo.

Lanair Co., Chicago, Ill.

Larkin Co., Inc., Buffalo, N. Y.
Lauber & Co., H., Cincinnati, Olio.
Lavo Co. of America, Milwaukee, Wis.
Lee Co., George H., Omaha, Nebr.
Lehn & Fink Products Corporation,
Bloomfield, N. J.

Lenox Hill Hospital, New York, N. Y. Levenson-Allin Co., San Francisco, Calif.

Lewis Co., Inc., Samuel, New York, N. Y.

Lewis Soap & Chemical Co., Oakland, Calif.

Liberty Lubricating Co., Pittsburgh,

Lien Chemical Co., Chicago, Ill. Linder, Ralph W., Decatur, Ill.

Lone Star Supply Co., Houston, Tex. Los Angeles Chemical Co., Inc., Los Angeles, Calif.

Los Angeles, City of, Los Angeles, Calif.

Louisiana Paper Co., Ltd., Shreveport, La.

Loveland Janitor Supply Co., Wichita,

City, Utah.

Macy & Co., Inc., R. H., New York,
N. Y. Lovinger Disinfectant Co., Salt Lake

Madison Laboratories, Inc., The May-

wood, Ill.

Majestic Wax Co., Denver, Colo.

Maine Germicide Co., Portland, Maine. Maine, State of, Augusta, Maine.

Marine Laboratories of America, Inc., Brooklyn, N. Y. (In principle.) Marlowe-Van Loan Corporation, High Point, N. C.

Mar-Velo Products Co., Ft. Wayne,

Ind. Master Supply Co., New York, N. Y.

Maurer & Son Co., D., Philadelphia, Pa. McCormick & Co., Inc., Baltimore, Md.

McKesson & Robbins, Inc. (Langley Michaels Division), San Francisco, Calif.

McLeod Exterminating Service, Buffalo, N. Y.

Merck & Co., Inc., Rahway, N. J. Mernit, Inc., Ralph, New York, N. Y. Meyer Brothers Drug Co., St. Louis, (CS70-41).Mo.

Meyer Chemical Co., Sioux City, Iowa. Michel & Pelton Co., Oakland (Emery-

ville), Calif.

Midland Chemical Laboratories, Inc., Dubuque, Iowa (CS71-41).

Midwest Kildew Co., Des Moines, Iowa. Mid-West Soap Co., Indianapolis, Ind. Miller Chemical Co., Omaha, Nebr. Miller Co., J. E., Wheeling, W. Va.

Mil-Wis Chemical Co., Milwaukee, Wis.

Miracle Manufacturing Co., Ft. Wayne, Ind. Missanna Laboratories, Inc., Little

Rock, Ark. Mitchellite Laboratories, The, San An-

tonio, Tex. Monarch Chemical Works, Omaha,

Nebr. Montgomery Ward & Co., Chicago, Ill. Moreland Chemical Co., Inc., Spartan-

burg, S. C. Mountain States Chemical Co., Den-

ver, Colo.

Murphy Products Co., Washington, D. C.

National Chemical Co., Inc., New Orleans, La.

National Cleanser Products Co., New York, N. Y.

National Disinfectant Co. of Texas, Dallas, Tex. National Extermination Products Co.,

Kansas City, Mo. National Oil Products Co., Inc., Har-

rison, N. J.

National Oil & Supply Co., Boston, Mass.

National Soap Co., Detroit, Mich. Nason Chemical Co., Dallas, Tex. Neverub Corporation, Chicago, Ill. Neville Co., The, Pittsburgh, Pa.

New England Bag & Paper Co., New Haven, Conn.

New England Disinfectant Co., Inc.,

Boston, Mass. ew Orleans, Inc., Better Business Bureau of, New Orleans, La. (In New principle.)

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Ohio Oil Co., The, Findlay, Ohio.
Oil & Gas Journal, Tulsa, Okla.
Oleum Products Co., Scranton, Pa.
Oneida Chemical Co., Utica, N. Y.
Orange Memorial Hospital, Orange, N. J.

N. J.
Organic Chemical Co., Boston, Mass.
Orient Spray Co., Boston, Mass.
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Packer-Scott Co., Portland, Oreg.
Palmer Products, Inc., Waukesha, Wis.
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Paterson General Hospital, Paterson,

N. J. Pearl Supply Co., New York, N. Y. Peerless Chemical Co., Detroit, Mich. Penn Disinfecting Co., Philadelphia, Pa. Penn Drug & Supply Co., Scranton, Pa. Pennsylvania Hospital, Philadelphia, Pa.

Perrigo Co., L., Allegan, Mich. (CS71-41).

Phinney & Co., F. B., Hyde Park,

Mass.

Phoenix Oil Co., (Chemical Department), Augusta, Ga.
Phoenix Oil Co., The, Cleveland, Ohio. Pilcher Paper Co., Robert, Joliet, Ill. Pine-O-Pine Co. of Texas, Houston,

Tex.Pintell Co., The, New York, N. Y. Poggensee & Co., Tulsa, Okla. Pokadot Chemical Co., Greenville, Pa. Pomeroy, Jno. W., Fargo, N. Dak. Pottsville Show Case & Store Fixture

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Rhein Co., George W., Baltimore, Md. (CS70-41).

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Riverside Chemical Co., Inc., N. Tonawanda, N. Y. Robbins Disinfectant Co., Inc., Geo. B.,

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Ohio. S. & H. Soap & Chemical Co., Cincinnati, Ohio

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Saint Clair Co., Findlay, Ohio. principal.)

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Sameth Exterminating Co., Inc., New York, N. Y.

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Sangamo Disinfecting Co., Springfield, Ill.

Sanitary Appliance Co., Elmira, N. Y. Sanitary Chemical Laboratories, Ltd., Beaumont, Tex. nitary Washed

Wiper Co., Sanitary Indianapolis, Ind. Sayers & Co., Philadelphia, Pa.

Seaboard Chemical Products Co., The, Baltimore, Md.

Seacoast Laboratories, Inc., New York, N. Y.

Sealtest, Inc., Baltimore, Md. principle.)

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Wallace & Co., S. B., Marlinton, W. Va. (CS70-41).

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