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U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
WASHINGTON

Letter Circular LC-707 (Supersedes LC-634)

(October 31, 1942)

RUBBER: LIST OF PUBLICATIONS

By Members of the Staff of the National Bureau of Standards.

CONTENTS

GENERAL INFORMATION

Some of the publications in this list have appeared in the regular series of publications of the Bureau and others in various scientific and technical journals. Unless specifically stated, papers are not obtainable from the National Bureau of Standards.

Where the price is stated, the publication can be purchased from the Superintendent of Documents, Government Printing Office, Washington, D. C. The prices quoted are for delivery to addresses in the United States and its territories and possessions and in certain foreign countries which extend the franking privilege. In the case of all other countries, one-third the cost of the publication should be added to cover postage. Remittances should be made either by coupons (Obtainable from the Superintendent of Documents in sets of 20 for $1.00 and good until used), or by check or money order payable to the "Superintendent of Documents, Government Printing Office" and sent to him with order.

Publications marked "OP" are out of print, but, in general, may be consulted at technical libraries.

For papers in other scientific or technical journals, the name of the journal or of the organization publishing the article is given in abbreviated form, with the volume number (underscored), page, and year of publication, in the order named. The Bureau cannot supply copies of these journals, or reprints from them, and it is unable to furnish information as to their availability or price. They, too, can usually be consulted at technical libraries.

Series letters with serial numbers are used to designate Bureau publications:

S = "Scientific Paper". S1 to S329 are "Reprints" from the "Bulletin of the Bureau of Standards". S330 to S572 were published as "Scientific Papers of the Bureau of Standards". This series was superseded by the "Bureau of Standards Journal of Research" in 1928.

T = "Technologic Paper". T1 to T370. This series was superseded by the "Bureau of Standards Journal of Research" in 1928.

RP = "Research Paper". These are reprints of articles appearing in the "Bureau of Standards Journal of Research" and the "Journal of Research of the National Bureau of Standards", the latter being the title of this periodical since July 1934 (volume 13, number 1).

C = "Circular" of the National Bureau of Standards.

CS = "Commercial Standard".

M = "Miscellaneous Publication" of the National Bureau of Standards.

LC = "Letter Circular" of the National Bureau of Standards. These publications are in mimeograph form and are sent without charge. Requests for them should be sent directly to the National Bureau of Standards.

Circular C24 and supplements, the complete list of the Bureau's publications (1901-1936), is sold by the Superintendent of Documents for 55 cents. Announcement of new publications is made each month in the Technical News Bulletin which is obtainable by subscription at 50 cents per year.

I. GENERAL INFORMATION ON RUBBER

Title	Series	Price
A central organization for fundamental research on rubber. Archibald T. McPherson. India Rubber World 105, 255 (1941). Rubber Chem. Tech. 15, 221 (1942).		
Guide to the literature on rubber (1941). This Letter Circular has been prepared in response to inquiries about sources of information on rubber. It is intended to assist the reader who may be unfamiliar with rubber technology in obtaining recent and authentic information relative to the production, manufacture, and properties of rubber and rubber products. Special attention is paid to publications by the various government agencies.	LC626	Free NBS
Synthetic Rubbers: A review of their composition, properties, and uses. Lawrence A. Wood. Cir. NBS C427 (1940). Rubber Chem. Tech. 13, 861 (1940). India Rubber World 102, No. 4, 33 (1940).	C427	10¢
The examination of materials claimed to be synthetic rubber. Archibald T. McPherson. India Rubber World 101, No. 4, 43 (Jan. 1, 1940).		

II. RUBBER LATEX AND CRUDE RUBBER

Measurement of the pH of latex by the antimony electrode. India Rubber World 87, 45 (Oct. 1932).

Title	Series	Price
Rubber latex (1932) This Letter Circular is intended to give general information on rubber latex and to indicate sources from which special or detailed information may be obtained. Part I is a brief discussion of the production, composition, and properties of latex and its use in manufacture. Part II is a list of recent publications on latex, covering the period 1927-1931.	LC321	Free NBS
Some vulcanization tests of guayule rubber. C. E. Boone and D. Spence. (1927).	T353	5¢

III. PURIFICATION OF RUBBER

Title	Series	Price
Ether-insoluble or gel rubber hydrocarbon, its solution, crystallization, and properties. W. H. Smith, and C. P. Saylor. J. Research NBS <u>13</u>, 453 (1934). Rubber Chem. Tech. <u>8</u>, 214 (1935).	RP719	OP
The preparation and crystallization of pure ether-soluble rubber hydrocarbon: Composition, melting point, and optical properties. W. H. Smith, C. P. Saylor, and H. J. Wing. BS J. Research <u>10</u>, 479 (1933). Rubber Chem. Tech. <u>6</u>, 351 (July 1933).	RP544	OP
A method for the purification of rubber and properties of purified rubber. A. T. McPherson. BS J. Research <u>8</u>, 751 (1932). Rubber Age <u>31</u>, 477 (Sept. 25, 1932). Rubber Chem. Tech. <u>5</u>, 523 (1932).	RP449	5¢
Crystalline rubber hydrocarbon. E. W. Washburn. Physical Rev. <u>38</u>, 1790 (Nov. 1, 1931). Rubber Chem. Tech. <u>5</u>, 119 (1932).		

See also RP585, Section V, 4.

IV. FORMS OF RUBBER; CRYSTALLIZATION AND OTHER TRANSITIONS IN RUBBER

Crystallization of vulcanized rubber. Norman Bekkedahl and Lawrence A. Wood. Ind. Eng. Chem. <u>33</u>, 381 (March 1941).

Influence of the temperature of crystallization on the melting of crystalline rubber. Norman Bekkedahl and Lawrence A. Wood. J. Chem. Phys. <u>9</u>, 193 (Feb. 1941).

Title	Series	Price
Optical and dimensional changes which accompany the freezing and melting of *Hevea* rubber. W. Harold Smith and Charles Proffer Saylor. J. Research NBS 21, 257 (1938). Rubber Chem. Tech. 12, 18 (1939). - - - - - - - - -	RP1129	10¢
Forms of rubber as indicated by the temperature volume relationship. N. Bekkedahl. J. Research NBS 13, 411 (1934). Rubber Chem. Tech. 8, 5 (1935). - - - - - - - - - - - - - -	RP717	5¢

V. CONSTANTS AND PROPERTIES OF RUBBER

Values of the physical constants of rubber. L. A. Wood. Proc. Rubber Technology Confer., p. 933 (Institution of the Rubber Industry, London), 1938. Rubber Chem. Tech. 12, 130 (1939).

1. Aging

Accelerated aging tests for rubber, paper, and weighted silk. W. E. Emley. Int. Assn. Test. Materials, London Congress, 1937, 509.

Effect of antioxidants on the natural and the accelerated aging of rubber. R. F. Tener and W. L. Holt. J. Research NBS 14, 667 (1935) RP795 5¢

Aging of soft rubber goods. R. F. Tener, W. H. Smith, and W. L. Holt. Tech. Pap. BS 21, 353 (1926-27). T342 CP

The aging properties of rubber bands in storage. C. E. Boone. India Rubber World 76, 317 (Sept. 1927).

2. Density and Specific Gravity

The measurement of densities of synthetic rubbers. L. A. Wood, N. Bekkedahl, and Frank L. Roth. J. Research NBS 29, (Dec. 1942). Ind. Eng. Chem. 34, (Nov. 1942) - - - - - RP ¢

Comparison between the observed density of crystalline rubber and the density calculated from X-ray data. W. H. Smith and Nancy P. Hanna. J. Research NBS 27, 229 (1941). Rubber Chem. Tech. 15, 265 (1942). - - - - RP1416 5¢

(Refer to RP760, Sec. V, 7; RP717, Sec. IV; RP449, Sec. III; and S560, Sec. V, 4.)

3. Effect of Heat Upon Rubber

Influence of temperature on the evolution of hydrogen sulphide from vulcanized rubber. A. D. Cummings. BS J. Research 9, 163 (1932). Rubber Chem. Tech. 6, 46 (1933). - - - - - RP464 5¢

Title	Series	Price
Evolution of hydrogen sulphide from vulcanized rubber. Edward Wolesensky. BS J. Research 4, 501 (1930). Rubber Chem. Tech. 3, 386 (1930). - - - - - - - - - - - - - - - - - -	RP162	OP
Tensile properties of soft rubber compounds at temperatures ranging from -70° C to +147° C. R. F. Tener, S. S. Kingsbury, and W. L. Holt. Tech. Pap. BS 22, 367 (1927-28). - - - - - -	T364	10¢

(See also RP760, Section V, 7; RP717, Section IV; and RP585, Section V, 4.)

4. Electrical Properties

The electrical behavior of rubber. Archibald T. McPherson. Chapter XV of Chemistry and Technology of Rubber, edited by Davis and Blake, Reinhold Publishing Corporation, New York. (1937).

Dielectric constant, power factor, and conductivity of the system rubber-calcium carbonate. Arnold H. Scott and Archibald T. McPherson. J. Research NBS 28, 279 (1942).	RP1457	10¢
Effect of pressure on the dielectric constant, power factor and conductivity of rubber-sulphur compounds. Arnold H. Scott. J. Research NBS 15, 13 (1934). - - - - - - -	RP806	5¢
Effect of temperature and frequency on the dielectric constant, power factor, and conductivity of compounds of purified rubber and sulphur. A. H. Scott, A. T. McPherson, and H. L. Curtis. BS J. Research 11, 173 (1933).	RP585	5¢
Change of electrical properties of rubber and gutta-percha during storage under water. Harvey L. Curtis and Arnold H. Scott. BS J. Research 5, 539 (1930). Rubber Chem. Tech. 4, 39 (1931). - - - - - - - - - - - - -	RP213	10¢
Density and electrical properties of the system, rubber-sulphur. H. L. Curtis, A. T. McPherson, and A. H. Scott. BS Sci. Pap. 22, 383 (1927-28). - - - - - - - - - - - - - -	S560	15¢
Carbon black in rubber insulating compounds. H. L. Curtis and A. T. McPherson. Ind. Eng. Chem. 22, 1259 (Nov. 1930).		

Title	Series	Price
Dielectric constant, power factor and resistivity of rubber and gutta-percha. H. L. Curtis and A. T. McPherson. Tech. Pap. BS 19, 669 (1924-25). - - - - - - - - - - - - - - - - - -	T299	20¢

5. Mechanical Properties

Frictional properties of rubber. Frank L. Roth, Raymond L. Driscoll, and William L. Holt. J. Research NBS 28, 439 (1942). - - - - - -	RP1463	10¢
Tensile properties of rubber compounds at high rates of stretch. Frank L. Roth and William L. Holt. J. Research NBS 23, 603 (1939). Rubber Chem. Tech. 13, 348 (1940). - - - -	RP1256	5¢
Secondary increase of length of stretched, chilled rubber. W. Harold Smith and Charles Proffer Saylor. Science 85, 204 (1937).		
Change of volume of rubber on stretching. Effects of time, elongation and temperature. William L. Holt and Archibald T. McPherson. J. Research NBS 17, 657 (1936). Rubber Chem. Tech. 10, 412 (1937). - - - - - - - - - - - -	RP936	5¢
Vulcanization and stress-strain behavior of sol, gel, and total rubber hydrocarbon. W. Harold Smith and W. L. Holt. J. Research NBS 13, 465 (1934). Rubber Chem. Tech. 8, 210 (1935). - - - - - - - - - - - - - - - - - - -	RP720	OP
Behavior of rubber under repeated stresses. W. L. Holt. Ind. Eng. Chem. 23, 1471 (Dec. 1931). Rubber Chem. Tech. 5, 79 (Jan. 1932).		
A method of measuring frictional coefficients of walkway materials. R. S. Hunter. BS J. Research 5, 329 (1930). - - - - - - - - -	RP204	10¢
The alternating behavior of fatty acids in rubber. W. H. Smith and C. E. Boone. Ind. Eng. Chem. 18, 398 (1926).		
Brake performance studies. W. S. James. J. Soc. Automotive Engrs. 14, 236 (1924).		

6. Optical Properties and X-Ray Diffraction

The optical properties of rubber. Lawrence A. Wood. J. Applied Phys. 12, 119 (Feb. 1941).		

Title	Series	Price
X-Ray diffraction patterns of Hevea, Manihot, and other rubbers. George L. Clark, Siegfried T. Gross, and W. Harold Smith. J. Research NBS 23, 1 (1939). Rubber Chem. Tech. 13, 42 (1940). - - - - - - - - - - - - - - - - - -	RP1218	5¢
X-Ray diffraction patterns of crystalline sol rubber prepared from ethereal solution. G. L. Clark, S. T. Gross, and W. H. Smith. J. Research NBS 22, 105 (1939). Rubber Chem. Tech. 12, 482 (1939). - - - - - - - -	RP1170	5¢
X-Ray diffraction patterns of sol, gel, and total rubber when stretched and when crystallized by freezing and from solutions. G. L. Clark, Enno Wolthuis, and W. H. Smith. J. Research NBS 19, 479 (1937). Rubber Age (N.Y.) 42, 35 (1937). Rubber Chem. Tech. 11, 32 (1938).	RP1039	10¢
Photoelastic determination of stresses around a circular inclusion in rubber. W. E. Thibodeau and L. A. Wood. J. Research NBS 20, 393 (1938). - - - - - - - - - - - - - - - - - -	RP1083	5¢
Infrared absorption spectra of plant and animal tissue and various other substances. R. Stair and W. W. Coblentz. J. Research NBS 15, 295 (1935). - - - - - - - - - - - - - - - -	RP830	5¢
Refractive index of rubber. A. T. McPherson and A. D. Cummings. J. Research NBS 14, 553 (1935). Rubber Chem. Tech. 8, 421 (1935). -	RP786	5¢
Photoelastic properties of soft vulcanized rubber. W. E. Thibodeau and A. T. McPherson. J. Research NBS 13, 887 (1934). Rubber Chem. Tech. 8, 183 (1935). - - - -	RP751	5¢

(See also RP544 and RP449, Section III; and T299, Section V, 4.)

7. Thermal and Thermodynamic Properties

Specific heat of the synthetic rubber Hycar OR from 15° to 340° K. N. Bekkedahl and R. B. Scott. J. Research NBS 29, 87 (1942). - -	RP1487	5¢

The beta-anomaly of Ruhemann and Simon in rubber. Lawrence A. Wood. J. Chem. Phys. 10, 403 (1942).

An improved Wiegand Rubber Pendulum. Lawrence A. Wood and Norman Bekkedahl. Rev. Sci. Instruments 10, 51 (Feb. 1939). Rubber Chem. Tech. 12, 529 (1939).

Title	Series	Price
Application of thermodynamics to the chemistry of rubber. Norman Bekkedahl. Proc. Rubber Technology Confer. Inst. Rubber Industry, p. 223, London (1938). Rubber Chem. Tech. 12, 150 (1939).		
Heat capacity entropy and free energy of rubber hydrocarbon. Norman Bekkedahl and Harry Matheson. J. Research NBS 15, 503 (1935). Rubber Chem. Tech. 9, 264 (1936).	RP844	5¢
Heats of reaction of the system: Rubber sulphur. A. T. McPherson and N. Bekkedahl. J. Research NBS 14, 601 (1935). Ind. Eng. Chem. 27, 597 (May 1935). Rubber Chem. Tech. 8, 456 (1935).	RP791	5¢
Specific volume, compressibility, and volume thermal expansivity of rubber-sulphur compounds. A. H. Scott. J. Research NBS 14, 99 (1935). Rubber Chem. Tech. 8, 401 (1935).	RP760	5¢
Heats of combustion of rubber and rubber sulphur compounds. R. S. Jessup and A. D. Cummings. J. Research NBS 13, 357 (1934). Rubber Chem. Tech. 8, 44 (1935).	RP713	5¢
Tentative method of test for comparing the thermal conductivity of solid electrical insulating materials. Proc. Am. Soc. Testing Materials 30, Part I, 1224 (1930).		

8. Permeability to Gases

Permeability of elastic polymers to hydrogen. Theron P. Sager. J. Research NBS 25, 309 (1940).	RP1327	5¢
Permeability of neoprene to gases. Theron P. Sager and Max Sucher. J. Research NBS 22, 71 (1939). Rubber Chem. Tech. 12, 875 (1939).	RP1166	5¢
Permeability of synthetic film-forming materials to hydrogen. T. P. Sager. J. Research NBS 13, 879 (1934).	RP750	OP

Title	Series	Price

9. Molecular Distillation

Behavior of rubber hydrocarbon in a molecular still. W. Harold Smith and Henry J. Wing. J. Research NBS 22, 529 (1939). Rubber Chem. Tech. 12, 789 (1939). - - - - - - - - -RP1202 5¢

VI. CONSTANTS AND PROPERTIES OF ISOPRENE

Heat of combustion of isoprene. Ralph S. Jessup. J. Research NBS 20, 589 (1938). - - - - - - -RP1093 5¢

Entropy of isoprene from heat-capacity measurements. Norman Bekkedahl and Lawrence A. Wood. J. Research NBS 19, 551 (1937). - - -RP1044 5¢

Some physical properties of isoprene. Norman Bekkedahl, Lawrence A. Wood and Mieczyslaw Wojciechowski. J. Research NBS 17, 883 (1936). Rubber Chem. Tech. 10, 451 (1937). India Rubber J. 93, 648 (1937). - - - - - - - RP951 5¢

VII. CHEMICAL ANALYSIS OF RUBBER

Errors in gas analysis arising from loss of gas by solution in rubber connections and stopcock lubricant. J. R. Branham. BS J. Research 12, 353 (1934). - - - - - - - - - - - - RP661 OP

Decomposition of barium sulfate by solutions of sodium carbonate. E. Wolesensky. Ind. Eng. Chem. Anal. Ed. 1, 29 (Jan. 15, 1929).

Determination of sulphur in rubber by the perchloric acid method. E. Wolesensky. Ind. Eng. Chem. 20, 1234 (Nov. 1928). Rubber Chem. Tech. 2, 45 (1929).

Determination of rubber and inorganic materials in soft rubber goods. R. T. Mease and N. P. Hanna. Ind. Eng. Chem. 17, 161 (1925).

An improved method for the determination of total sulphur in rubber goods. M. Levin and S. Collier. Rubber Age and Tire News 9, 47 (1921).

Determination of antimony in rubber goods. S. Collier, M. Levin, and J. A. Scherrer. Rubber Age and Tire News 8, 104 (1920). India Rubber J. 64, 580 (1921).

Title	Series	Price
Detection of glue in rubber goods. S. W. Epstein and W. E. Lange. India Rubber World 61, 216 (1920).		
Determination of cellulose in rubber goods. S. W. Epstein and R. L. Moore. Tech. Pap. BS 13, (1920). Rubber Age and Tire News 6, 289 (1920). -	T154	OP
Extraction of rubber goods. S. W. Epstein and B. L. Gonyo. Tech. Pap. BS 13, (1919-20). Rubber Age and Tire News 6, 445 (1920). - -	T162	OP
Determination of free carbon in rubber goods. A. H. Smith and S. W. Epstein. Tech. Pap. BS 12 (1919). J. Ind. Eng. Chem. 11, 33 (1919). -	T136	OP
Direct determination of India rubber by the nitrosite method. J. B. Tuttle and L. Yurow. Tech. Pap. BS 13, (1919-20). - - - -	T145	OP
Determination of barium carbonate and barium sulphate in vulcanized rubber goods. J. B. Tuttle. Tech. Pap. BS 7 (1916-17). J. Ind. Eng. Chem. 8, 324 (1916). - - - - - - - - - -	T64	OP
A study of some recent methods for the determination of total sulphur in rubber. J. B. Tuttle and A. Isaacs. Tech. Pap. BS 5 (1914-15). J. Wash. Acad. Sci. 5, 235 (1915). J. Ind. Eng. Chem. 7, 658 (1915). - - - - - - - -	T45	OP
Combustion method for the direct determination of rubber. L. G. Wesson. Tech. Pap. BS 4 (1913-14). -	T35	OP
The sampling of rubber goods. J. B. Tuttle. J. Ind. Eng. Chem. 5, 618 (1913).		
An improved extraction apparatus. T. B. Ford. J. Am. Chem. Soc. 34, 552 (1912).		
The determination of total sulphur in India rubber. C. E. Waters and J. B. Tuttle. Sci. Pap. BS 8, 445 (1912). J. Ind. Eng. Chem. 3, 734 (1911). - - - - - - - - - - - - - -	S174	OP

Title | Series | Price

VIII. DIMENSIONAL MEASUREMENTS ON RUBBER SPECIMENS

Application of the interferometer to the measurement of dimensional changes in rubber. Lawrence A. Wood, Norman Bekkedahl, and Chauncey G. Peters. J. Research NBS 23, 571 (1939). Rubber Chem. Tech. 13, 290 (1940). RP1253 5¢

Screw micrometer gauges for rubber specimens. W. L. Holt. BS J. Research 10, 575 (1933). RP549 5¢

Measuring microscope for rubber specimens. R. E. Lofton. Ind. Eng. Chem. Anal. Ed. 4, 439 (Oct. 15, 1932). Rubber Chem. Tech. 6, 151 (1933).

(Dimensional measurements on electrical test specimens are discussed in RP585, S560 and T299, Section V, 4.)

IX. PHYSICAL TESTING OF RUBBER

Toggle clamp for rubber tensile specimens. William L. Holt and Archibald T. McPherson. J. Research NBS 22, 543 (1939). - - - - - -RP1204 10¢

Physical testing of rubber. (In French). Archibald T. McPherson. Vol. 1, Book 3, Chapter 2 of Encyclopedia of Rubber Technology (Encyclopedie Technologique du Caoutchouc), Revue Générale du Caoutchouc, Paris. (1938).

Compression cutting test for rubber. W. L. Holt. BS J. Research 12, 439 (1934). - - - - - - - RP674 5¢

A water bath having submerged individual sample-containers for the accelerated aging of rubber in air. W. L. Holt and A. T. McPherson. Rubber Age 36, No. 3, 121 (Dec. 1934). Rubber Chem. Tech. 8, 302 (April 1935).

A simple abrasion test machine for rubber. P. A. Sigler and W. L. Holt. India Rubber World 82, 63 (Aug. 1, 1930). (A limited number of photostatic copies of this publication are available for distribution by the Bureau of Standards without charge.)

Outline of tentative standard laboratory procedure for the preparation and physical testing of rubber samples. Physical Testing Committee, Rubber Division, Am. Chem. Soc., and F. E. Rupert. Rubber Age (New York) 26, 429 (Jan. 25, 1930). Rubber Chem. Tech. 3, 179 (1930).

Title | Series | Price

Importance of temperature and humidity control in rubber testing: I. Stress-strain and tensile properties. Physical Testing Committee, Rubber Division, Am. Chem. Soc., and F. E. Rupert. Ind. Eng. Chem. 20, 1245 (Nov. 1928); II. Resistance to abrasion. Ind. Eng. Chem. Anal. Ed. 1, 174 (July 15, 1929). Rubber Chem. Tech. 1, 515 (1928) and 2, 680 (1929).

Importance of temperature and humidity control in rubber testing. Physical Testing Committee, Rubber Division, Am. Chem. Soc., and F. E. Rupert. Rubber Age 22, 245 (Dec. 10, 1927).

The testing of rubber goods. Cir. BS, C38 [Ed. 5] (1927). - C38 30¢

This circular describes methods used in 1927 for the testing of rubber goods. The physical tests are described in detail and the machines used for this purpose are illustrated and described. Data are given showing the effect of different conditions on the tensile properties of rubber. The circular also contains a brief outline of the methods of collecting crude rubber and the processes used in the manufacture of various rubber articles. Present methods of test are described in Federal Specification ZZ-K-601a (See Section XI).

Effect of heat generated during stressing upon the tensile properties of rubber. C. E. Boone and J. R. Newman. Ind. Eng. Chem. 18, 539 (May 1926).

X. RUBBER PRODUCTS

1. Tires

Measurement of the tread movement of pneumatic tires and a discussion of the probable relation to tread wear. W. L. Holt and C. M. Cook. BS J. Research 1, 19 (1928). - - - - RP2 OP

Puncture sealing compounds for pneumatic tires. Cir. BS, C320 (1926). - - - - - - - - - - - - C320 5¢

Endurance tests of tires. W. L. Holt and P. L. Wormeley. Tech. Pap. BS 20, 545 (1926). - - T318 10¢

Title	Series	Price
Wearing quality of tire treads as influenced by reclaimed rubber. W. L. Holt and P. L. Wormeley. Tech. Pap. BS 19, 579 (1925). - -	T294	5¢
Effect of tire resistance on fuel consumption. W. L. Holt and P. L. Wormeley. Tech. Pap. BS 19, 213 (1925). - - - - - - - - - - - - - -	T283	5¢
Dynamometer tests of automobile tires. W. L. Holt and P. L. Wormeley. Tech. Pap. BS 17, 559 (1923). - - - - - - - - - - - - - - - - - -	T240	10¢
Power losses in automobile tires. W. L. Holt and P. L. Wormeley. Tech. Pap. BS 16, 451 (1922). -	T213	5¢
2. Hose		
Selection and care of garden hose. Cir. BS, C327 (1926). -	C327	10¢
3. Flooring		
Test of floor coverings for post-office work-rooms. Warren E. Emley and Carl E. Hofer. J. Research NBS 19, 567 (1937). - - - - - -	RP1046	10¢
Rubber floor tile. (1929). - - - - - - - - - - - - - This letter circular presents the conclusions reached as the result of various tests made on samples of rubber floor tile, together with general observations of floor tile in actual use.	LC270	Free NBS
4. Sponge Rubber		
Some properties of sponge rubber. Cir. BS, C377 (1929). -	C377	5¢
5. Foundry Cores		
Rubber binders for foundry cores. (1928). - - -	LC252	Free NBS

Title | Series | Price

6. Solutions of Rubber

Rubber cements. (April 30, 1934). - - - - - - - - LC411 Free NBS
This letter circular was prepared as an answer to inquiries about the composition, preparation, and uses of rubber cements. The information given is presented from the standpoint of individuals not expert in rubber technology.

Consistency of rubber-benzene solutions. Winslow H. Hershel. Ind. Eng. Chem. 16, 927 (Sept. 1924).

(Refer also to LC321, Section II.)

7. Coated Fabrics and Thin Films

The preparation of thin films. T. P. Sager. Ind. Eng. Chem. Anal. Ed. 9, 156 (1937). Rubber Chem. Tech. 10, 639 (1937).

Rubber substitutes as coatings for balloon fabrics. Theron P. Sager. J. of the Aeron. Sci. 3, 63 (Nov. 1935).

8. Dental Rubber

Denture rubber: composition, properties, and a specification. W. T. Sweeney and H. J. Caul. J. Am. Dental Assoc. 27, 1446 (Sept. 1940).

Preliminary tests of some of the newer denture materials. R. Barber. J. Am. Dental Assoc. 21, 1969 (Nov. 1934).

9. Reclaimed Rubber

Reclaimed Rubber. A. T. McPherson. Cir. BS, C393 (1931). - - - - - - - - - - - - - - - - - - - C393 OP
This circular has been prepared to meet requests for information about reclaimed rubber. The aim has been to give a description of processes for the reclaiming of rubber that are in current use in the United States, and to review some of the properties and applications of the material that may be of general interest.

Title	Series	Price
10 Brake Lining		
Effect of Roughness of cast-iron brake drums in wear tests of brake linings. Rolla H. Taylor and William L. Holt. J. Research NBS 27, 395 (1941)	RP1427	5¢
Small inertia-type machine for testing brake lining. Rolla H. Taylor and William L. Holt. J. Research NBS 24, 531 (1940).....	RP1297	5¢
Automotive brake lining. (1939).	LC556	Free NBS

XI. SPECIFICATIONS FOR RUBBER GOODS

1. Directory of Specifications

National Directory of Commodity Specifications, prepared by Clarence W. Ingels under the direction of A. S. McAllister. Misc. Pub. BS M130 (1932)..... M130 $1.75

This directory lists all generally recognized specifications of the industry, and specifications of all branches of the United States Government except the War and Navy Departments. The directory includes the title of each specification, the name of the sponsoring organization, the date of promulgation, and a very brief statement of the nature and scope.

2. Federal Specifications

Federal Specifications for rubber goods are prepared by technical committees on which all interested departments of the Government are represented. They are promulgated by the Director of Procurement, Treasury Department, and are for sale by the Superintendent of Documents. An index of Federal Specifications, including those for rubber products, is published as Section IV, Part I, of the Federal Standard Stock Catalog (Price 5 cents).

3. Other Government Specifications

Federal Specifications are prepared only for products in which two or more departments of the Government are interested. Products used by a single department are covered by specifications issued by that department. The War and the Navy Departments have a considerable number of specifications for rubber products. An index of War Department Specifications is for sale by the Superintendent of Documents, price 25 cents. The index indicates the different branches of the service from which the respective specifications can be obtained. No

Title	Series	Price

charge is made for the individual specifications. An index of Navy Department Specifications and individual specifications can be obtained without charge from the Bureau of Supplies and Accounts, Navy Department, Washington, D. C., and from Navy Yards.-

XII. COMMERCIAL STANDARDS

Three Commercial Standards prepared by the rubber industry have been published by the National Bureau of Standards. These are,

Surgeons' latex gloves. Com. Std. BS CS41 (1932). -	CS41-32	5¢
Surgeons' rubber gloves. Com. Std. BS CS40 (1932). -	CS40-32	5¢
Hospital rubber sheeting. Com. Std. BS CS38 (1932). -	CS38-32	OP