

Tentative Methods of

IDENTIFICATION AND QUANTITATIVE ANALYSIS OF SYNTHETIC ELASTOMERS¹



A.S.T.M. Designation: D 833 - 46 T

ISSUED, 1945; REVISED, 1946.²

These Tentative Methods have been approved by the sponsoring committee and accepted by the Society in accordance with established procedures, for use pending adoption as standard. Suggestions for revisions should be addressed to the Society at 1916 Race St., Philadelphia 3, Pa.

Scope

1. These methods of identification and quantitative analysis of synthetic elastomers³ are classified according to the following three divisions:

- A. Identification of Elastomers,
- B. Quantitative Analysis of Elastomers, and
- C. Determination of Compounding Ingredients.

Method A includes a semi-routine qualitative scheme with confirmatory tests. Method B includes methods of quantitatively analyzing for individual elastomers present in an unknown compound. Method C covers the determination of compounding ingredients in synthetic rubber compounds.

¹ Under the standardization procedure of the Society, these methods are under the jurisdiction of the A.S.T.M. Committee D-11 on Rubber and Rubber-Like Materials.

² Revision accepted by the Administrative Committee on Standards, September 9, 1946.

³ For information concerning the development of these methods, the following references may be consulted:

H. P. Burchfield, "Identification of Natural and Synthetic Rubbers," *Industrial and Engineering Chemistry, Analytical Edition*, Vol. 16, p. 424 (1944).

H. P. Burchfield, "Qualitative Spot Tests for Rubber Polymers," *Industrial and Engineering Chemistry, Analytical Edition*, Vol. 17, p. 806 (1945).

"Identification and Estimation of Natural and Synthetic Rubbers," British Ministry of Supply, Admiralty, Ministry of Aircraft Production (1944).

Definitions

2. (a) *Synthetic Elastomer*.—Any of the synthetic rubber-like materials and some synthetic resins which occasionally occur mixed with these rubber-like materials.

NOTE.—This definition is intentionally made broader than is usual in the strictly scientific sense.

(b) *Chloroprene*.—Polymers of chloroprene with or without co-monomers present.

(c) *Styrene Rubbers*.—Styrene-butadiene copolymers with or without other co-monomers present.

(d) *Nitrile Rubbers*.—Butadiene-acrylonitrile copolymers with or without other co-monomers present.

(e) *Polyisobutylene Rubbers*.—Polymerized isobutylene with or without co-monomers present.

(f) *Thioplasts*.—Any of the polysulfide rubbers consisting of organic radicals linked through sulfur.

(g) *Polyvinyl Plastics*.—Polyvinyl chloride, polyvinyl acetate, or mix-