This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

Designation: D4894 – 19

Standard Specification for Polytetrafluoroethylene (PTFE) Granular Molding and Ram Extrusion Materials [1]

This standard is issued under the fixed designation D4894; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope*

1.1 This specification covers granular resins and test methods for polytetrafluoroethylene (PTFE) that have never been preformed or molded and are normally processed by methods similar to those used in powder metallurgy or ceramics, or by special extrusion processes. These PTFE resins are homopolymers of tetrafluoroethylene, or, in some cases, modified homopolymers containing not more than one percent by weight of other fluoromonomers. The usual methods of processing thermoplastics generally are not applicable to these materials because of their viscoelastic properties at processing temperatures. The materials included herein do not include mixtures of PTFE resin with additives such as colorants, fillers or plasticizers; nor do they include reprocessed or reground resin or any fabricated articles. The methods and properties included are those required to identify the various types of resins. Additional procedures are provided in the Appendix for further characterization of the resins.

1.2 The values stated in SI units as detailed in IEEE/ASTM SI-10 are to be regarded as the standard, and the practices of IEEE/ASTM SI-10 are incorporated herein.

1.3 The following precautionary caveat pertains only to the Specimen Preparation section, Section 9, and the Test Methods section, Section 10, of this specification: *This specification does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.* See Notes 3 and 9 for specific cautionary statements.

NOTE 1—Information in this specification is technically equivalent to related information in ISO 12086-1 and ISO 12086-2.

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D618 Practice for Conditioning Plastics for Testing
D792 Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement
D883 Terminology Relating to Plastics
D1708 Test Method for Tensile Properties of Plastics by Use of Microtensile Specimens
D1895 Test Methods for Apparent Density, Bulk Factor, and Pourability of Plastic Materials
D3295 Specification for PTFE Tubing, Miniature Beading and Spiral Cut Tubing
D3892 Practice for Packaging/Packing of Plastics
D4441 Specification for Aqueous Dispersions of Polytetrafluoroethylene
D4591 Test Method for Determining Temperatures and Heats of Transitions of Fluoropolymers by Differential Scanning Calorimetry
D4745 Classification System and Basis for Specification for Filled Polytetrafluoroethlyene (PTFE) Molding and Extrusion Materials Using ASTM Methods
D4895 Specification for Polytetrafluoroethylene (PTFE) Resin Produced From Dispersion
E11 Specification for Woven Wire Test Sieve Cloth and Test Sieves
E177 Practice for Use of the Terms Precision and Bias in ASTM Test Methods
IEEE/ASTM SI-10 Standard for Use of the International System of Units (SI): The Modern Metric System

2.2 *ISO Standards:*[3]

ISO 12086-1 Plastics—Fluoropolymer Dispersions and Moulding and Extrusion Materials—Part 1: Designation System and Basis for Specification

[1] This specification is under the jurisdiction of ASTM Committee D20 on Plastics and is the direct responsibility of Subcommittee D20.15 on Thermoplastic Materials.

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[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

[3] Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, http://www.ansi.org.

*A Summary of Changes section appears at the end of this standard

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