



Standard Classification System and Basis for Specification for Filled Polytetrafluoroethylene (PTFE) Molding and Extrusion Materials Using ASTM Methods¹

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1. Scope*

1.1 This standard classification system and basis for specification covers polytetrafluoroethylene (PTFE) filled molding compounds made with virgin PTFE resins defined in Specification **D4894**, as Types II and III.

NOTE 1—This system can be used as a model for other PTFE compounds having particulate fillers that can survive the sintering temperatures of PTFE as can those listed in this standard. This system is restricted to virgin PTFE base resin for technical reasons. Recycled or reprocessed material cannot be processed successfully.

NOTE 2—The properties measured on commercially fabricated parts may differ from the listed values for samples prepared by the procedures given in this specification, depending on part geometry and processing parameters.

1.2 The values stated in SI units are to be regarded as standard.

1.3 The following statement applies to the test method portion, Section 11, of this specification: *This standard 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 **Note 5** for a specific warning statement.

NOTE 3—There is no known ISO equivalent to this standard.

2. Referenced Documents

2.1 ASTM Standards:²

- D792** Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement
- D883** Terminology Relating to Plastics
- D1600** Terminology for Abbreviated Terms Relating to Plastics

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.

- D1708** Test Method for Tensile Properties of Plastics by Use of Microtensile Specimens
- D3892** Practice for Packaging/Packing of Plastics
- D4894** Specification for Polytetrafluoroethylene (PTFE) Granular Molding and Ram Extrusion Materials
- IEEE/ASTM SI-10 Standard for Use of the International System of Units (SI): The Modern Metric System³

3. Terminology

3.1 *Definitions*—The terminology given in Terminology **D883** is applicable to this specification unless otherwise specified.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *bulk density, n*—the mass in kilograms per cubic metre of resin compound measured under the conditions of the test.

3.2.2 *filled compound, n*—blend of PTFE resin as the matrix and particulate fillers, generally glass, other inorganic, metallic, or polymeric materials that withstand the sintering temperature of PTFE (327 to 380°C).

3.2.3 *free-flow resins (pelletized), n*—generally made by treatment of finely divided resins to produce free-flowing agglomerates.

3.2.4 *lot, n*—one production run.

3.2.5 *pigmented compound, n*—a compound in which a pigment is added for colorant purposes only.

3.2.6 *standard flow resins (nonpelletized), n*—finely divided resin with an average particle size less than 100 μm .

3.3 *Abbreviations*—Abbreviations are in accordance with Terminology **D1600**. PTFE is the acronym for polytetrafluoroethylene.

4. Classification

4.1 This specification covers the following two types of PTFE compounds:

4.1.1 *Type I*—Standard flow resins (nonpelletized) material, for general-purpose compression molding.

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