



Designation: D3159 – 22

Standard Specification for Modified ETFE Fluoropolymer Molding and Extrusion Materials¹

This standard is issued under the fixed designation D3159; 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.

This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope*

1.1 This specification covers molding and extrusion materials of modified ETFE fluoropolymer. The ETFE resin is a copolymer of ethylene and tetrafluoroethylene. Modified ETFE resin contains no more than 5 mole % of other fluoromonomers.

1.2 The values stated in SI units as detailed in [IEEE/ASTM SI-10](#) are to be regarded as standard. The values given in parentheses are for information only.

NOTE 1—Although this specification and ISO 20568-1 and ISO 20568-2 differ in approach or detail, data obtained using either are technically equivalent.

1.3 The following safety hazards caveat pertains only 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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 Recycled material is not appropriate for this specification because performance requirements cannot be met with recycled material. Therefore, this specification is for virgin material only.

1.5 *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.*

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 (Section D20.15.12).

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2. Referenced Documents

2.1 ASTM Standards:²

- [D150 Test Methods for AC Loss Characteristics and Permittivity \(Dielectric Constant\) of Solid Electrical Insulation](#)
- [D618 Practice for Conditioning Plastics for Testing](#)
- [D638 Test Method for Tensile Properties of Plastics](#)
- [D792 Test Methods for Density and Specific Gravity \(Relative Density\) of Plastics by Displacement](#)
- [D883 Terminology Relating to Plastics](#)
- [D1238 Test Method for Melt Flow Rates of Thermoplastics by Extrusion Plastometer](#)
- [D1600 Terminology for Abbreviated Terms Relating to Plastics](#)
- [D3418 Test Method for Transition Temperatures and Enthalpies of Fusion and Crystallization of Polymers by Differential Scanning Calorimetry](#)
- [D3892 Practice for Packaging/Packing of Plastics](#)
- [E177 Practice for Use of the Terms Precision and Bias in ASTM Test Methods](#)
- [IEEE/ASTM SI-10 Use of the International System of Units \(SI\): The Modern Metric System](#)

2.2 ISO Standards:

- [ISO 20568-1 Plastics—Fluoropolymer Dispersions and Moulding and Extrusion Materials—Part 1](#)
- [ISO 20568-2 Plastics—Fluoropolymer Dispersions and Moulding and Extrusion Materials—Part 2](#)

3. Terminology

3.1 Definitions:

3.1.1 *General*—The terminology given in Terminology [D883](#) is applicable to this specification.

3.1.2 *lot, n*—one production run or a uniform blend of two or more production runs.

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.

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