



Standard Classification System for Nylon Injection and Extrusion Materials (PA)¹

This standard is issued under the fixed designation D 4066; 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 Department of Defense.

1. Scope *

1.1 This classification system covers nylon materials suitable for injection molding and extrusion. Some of these compositions are also suitable for compression molding and application from solution.

1.2 The properties included in this classification system are those required to identify the compositions covered. There may be other requirements necessary to identify particular characteristics important to specialized applications. These may be specified by using the suffixes as given in Section 5.

1.3 This classification system and subsequent line call-out (specification) are intended to provide a means of calling out plastic materials used in the fabrication of end items or parts. It is not intended for the selection of materials. Material selection should be made by those having expertise in the plastic field after careful consideration of the design and the performance required of the part, the environment to which it will be exposed, the fabrication process to be employed, the costs involved, and the inherent properties of the material other than those covered by this classification system.

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

1.5 The following precautionary caveat pertains only to the test methods portion, Section 11, of this classification system. *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.*

NOTE 1—This classification system is similar to ISO 1874-1/-2 1993, although the technical content is significantly different.

NOTE 2—This classification system is being revised to include international 4-mm specimens and test procedures as the standard for compliance. The 3.2-mm specimens; test methods; and Tables PA, A, and B are included in Appendix X3 as a reference for those wishing to use them. It is recommended that the material manufacturer be consulted on all

call-outs against this classification system.

2. Referenced Documents

2.1 ASTM Standards:

D 149 Test Method for Dielectric Breakdown Voltage and Dielectric Strength of Electrical Insulating Materials at Commercial Power Frequencies²

D 150 Test Methods for A-C Loss Characteristics and Permittivity (Dielectric Constant) of Solid Electrical Insulation²

D 256 Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics³

D 257 Test Methods for D-C Resistance or Conductance of Insulating Materials²

D 618 Practice for Conditioning Plastics for Testing³

D 638 Test Method for Tensile Properties of Plastics³

D 648 Test Method for Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position³

D 789 Test Methods for Determination of Relative Viscosity, and Moisture Content of Polyamide (PA)³

D 790 Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials³

D 792 Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement³

D 883 Terminology Relating to Plastics³

D 1600 Terminology for Abbreviated Terms Relating to Plastics³

D 1898 Practice for Sampling of Plastics⁴

D 1999 Guide for Selection of Specimens and Test Parameters for International Commerce⁵

D 3418 Test Method for Transition Temperatures of Polymers by Differential Scanning Calorimetry⁶

D 3641 Practice for Injection Molding Test Specimens of Thermoplastic Molding and Extrusion Materials⁶

D 3892 Practice for Packaging/Packing of Plastics⁶

¹ This classification system is under the jurisdiction of ASTM Committee D20 on Plastics and is the direct responsibility of Subcommittee D20.15 on Thermoplastic Materials (Section D20.15.09).

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² Annual Book of ASTM Standards, Vol 10.01.

³ Annual Book of ASTM Standards, Vol 08.01.

⁴ Discontinued; see 1997 Annual Book of ASTM Standards, Vol 08.01.

⁵ Discontinued; see 1999 Annual Book of ASTM Standards, Vol 08.01.

⁶ Annual Book of ASTM Standards, Vol 08.02.