



Designation: D 2647 – 94 (Reapproved 2000)<sup>ε1</sup>

## Standard Specification for Crosslinkable Ethylene Plastics<sup>1</sup>

This standard is issued under the fixed designation D 2647; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

<sup>ε1</sup> NOTE—Sections 2 and 3 were corrected editorially in November 2000.

### 1. Scope

1.1 This specification covers a general classification system for crosslinkable ethylene plastics compounds (Note 1). The requirements specified herein are not necessarily applicable for use as criteria in determining suitability for the end use of a fabricated product.

NOTE 1—It is to be noted that this specification describes materials that are available commercially in their uncrosslinked form. Therefore, they are crosslinkable compounds despite the fact that measurement of the parameters used for their classification and specification will usually be carried out after curing has been effected.

1.2 Two types of compounds are covered, namely, mechanical types in which mechanical strength properties are of prime importance in applications, and electrical types in which electrical insulating or conducting properties also are of prime importance in applications.

1.3 The parameters used to classify and specify the mechanical types are ultimate elongation, elongation retention after aging, apparent modulus of rigidity, and brittleness temperature.

1.4 The parameters used to classify and specify the electrical types are ultimate elongation, elongation retention after aging, apparent modulus of rigidity, brittleness temperature, dielectric constant, dissipation factor, and volume resistivity.

1.5 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.6 The following safety hazards caveat pertains only to the test methods portion, Section 7, 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.*

NOTE 2—There is no similar or equivalent ISO standard.

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee D20 on Plastics and is the direct responsibility of Subcommittee D20.12 on Olefin Plastics.

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### 2. Referenced Documents

#### 2.1 ASTM Standards:<sup>2</sup>

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

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

D 573 Test Method for Rubber—Deterioration in an Air Oven

D 618 Practice for Conditioning Plastics for Testing

D 638 Test Method for Tensile Properties of Plastics

D 746 Test Method for Brittleness Temperature of Plastics and Elastomers by Impact

D 883 Terminology Relating to Plastics

D 991 Test Method for Rubber Property—Volume Resistivity of Electrically Conductive and Antistatic Products

D 1043 Test Method for Stiffness Properties of Plastics as a Function of Temperature by Means of a Torsion Test

D 1898 Practice for Sampling of Plastics<sup>3</sup>

D 2765 Test Methods for Determination of Gel Content and Swell Ratio of Crosslinked Ethylene Plastics

D 3892 Practice for Packaging/Packing of Plastics

IEEE/ASTM SI-10 Standard for Use of the International System of Units (SI): (The Modernized Metric System)

#### 2.2 Military Standard:

MIL-STD-105 Sampling Procedures and Tables for Inspection by Attributes<sup>4</sup> (Obsoleted 1995)

### 3. Terminology

3.1 *Definitions:* For definitions of plastics terms used in this specification, see Terminology D 883.

3.2 *Abbreviations:* Units, Symbols, and Abbreviations—For units, symbols, and abbreviations used in this specification see IEEE/ASTM SI-10.

<sup>2</sup> 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.

<sup>3</sup> Withdrawn.

<sup>4</sup> Available from Defense Automation and Production Service, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.