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: D4101 – 17

Standard Classification System and Basis for Specification for Polypropylene Injection and Extrusion Materials[1]

This standard is issued under the fixed designation D4101; 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.

INTRODUCTION

This classification system is not intended for the selection of materials but only as a means to call out plastic materials to be used for the manufacture of parts. The selection and specification of these materials is to be made by personnel with expertise in the plastics field where other factors including the use environment, inherent properties of the materials, performance of the part, part design, manufacturing process, and economics are considered.

1. Scope*

1.1 This classification system covers polypropylene materials suitable for injection molding and extrusion. Polymers consist of homopolymer, copolymers, and elastomer compounded with or without the addition of impact modifiers, for example, ethylene-propylene rubber, polyisobutylene rubber, and butyl rubber, colorants, stabilizers, lubricants, or reinforcements.

1.2 This classification system allows for the use of those polypropylene materials that can be recycled, reconstituted, and reground, provided that: (*1*) the requirements as stated in this classification system are met, and (*2*) the material has not been modified in any way to alter its conformance to food contact regulations or similar requirements. The proportions of recycled, reconstituted, and reground material used, as well as the nature and the amount of any contaminant, cannot be practically covered in this classification system. It is the responsibility of the supplier and the buyer of recycled, reconstituted, and reground materials to ensure compliance. (See Guide D7209.)

1.3 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

NOTE 1—The properties included in this classification system are those required to identify the compositions covered. If other requirements are necessary to identify particular characteristics important to specific applications, these shall be designated by using the suffixes given in Section 1.

1.4 The following safety hazards caveat pertains only to the test methods portion, Section 13, 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.*

NOTE 2—This classification system and ISO 19069-1 and -2 address the same subject matter, but differ in technical content.

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.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

C177 Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus

D149 Test Method for Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies

D150 Test Methods for AC Loss Characteristics and Permittivity (Dielectric Constant) of Solid Electrical Insulation

D256 Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics

D257 Test Methods for DC Resistance or Conductance of Insulating Materials

[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.

Current edition approved Dec. 1, 2017. Published January 2018. Originally approved in 1982. Last previous edition approved in 2014 as D4101 - 14$^{\varepsilon 2}$. DOI: 10.1520/D4101-17.

[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**

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