



# Standard Classification System and Basis for Specification for Liquid Crystal Polymers Molding and Extrusion Materials (LCP)<sup>1</sup>

This standard is issued under the fixed designation D5138; 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.

## 1. Scope\*

1.1 This classification system covers liquid crystal polymeric (LCP) materials suitable for injection molding and extrusion. This classification system allows the use of liquid crystal polymers that are recycled, reconstituted, recycled-regrind, recovered, or reprocessed, or a combination thereof, provided that the requirements as stated in this classification system are met. It is the responsibility of the supplier and the buyer of liquid crystal polymers that are recycled, reconstituted, recycled-regrind, recovered, or reprocessed, or a combination thereof, to ensure compliance.

1.2 The properties included in this classification system are those required to identify the compositions covered. Other requirements necessary to identify particular characteristics important to specialized applications are allowed. These shall be agreed upon between the user and the supplier, by using suffixes as given in Section 5.

1.3 This classification system and subsequent line callout (specification) are intended to be a means of calling out plastic materials used in the fabrication of end-use items or parts. It is not intended for the selection of materials. Material selection can be made by those having expertise in the plastics 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 standard.

1.5 The following precautionary caveat pertains only to the test method 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—There is no known ISO equivalent to this standard.

## 2. Referenced Documents

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

- D256 Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics
- D618 Practice for Conditioning Plastics for Testing
- D638 Test Method for Tensile Properties of Plastics
- D648 Test Method for Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position
- D790 Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
- 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
- D3641 Practice for Injection Molding Test Specimens of Thermoplastic Molding and Extrusion Materials
- D3835 Test Method for Determination of Properties of Polymeric Materials by Means of a Capillary Rheometer
- D3892 Practice for Packaging/Packing of Plastics
- D4000 Classification System for Specifying Plastic Materials
- D5630 Test Method for Ash Content in Plastics
- D7209 Guide for Waste Reduction, Resource Recovery, and Use of Recycled Polymeric Materials and Products (Withdrawn 2015)<sup>3</sup>
- E29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications

<sup>1</sup> 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.

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto: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> The last approved version of this historical standard is referenced on [www.astm.org](http://www.astm.org).