



Standard Classification System for Polyketone Injection Molding and Extrusion Materials (PK)¹

This standard is issued under the fixed designation D 5990; 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.

1. Scope *

1.1 This classification system covers polyketone materials suitable for injection molding and extrusion. This classification system does not address recycled polyketone materials.

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 will be agreed upon between the user and the supplier.

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 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 similar or equivalent ISO standard available.

2. Referenced Documents

2.1 ASTM Standards:

- D 256 Test Method for Determining the Pendulum Impact Resistance of Notched Specimens of Plastics²
- D 618 Practice for Conditioning Plastics and Electrical Insulating Materials for Testing²
- D 638 Test Method for Tensile Properties of Plastics²
- D 648 Test Method for Deflection Temperature of Plastics Under Flexural Load²

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 July 10, 2000. Published October 2000. Originally published as D 5990 – 96. Last previous edition D 5990 – 99.

² Annual Book of ASTM Standards, Vol 08.01.

D 790 Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials²

D 792 Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement²

D 883 Terminology Relating to Plastics²

D 1238 Test Method for Flow Rates of Thermoplastics by Extrusion Plastometer²

D 1600 Terminology for Abbreviated Terms Relating to Plastics²

D 3418 Test Method for Transition Temperatures of Polymers by Thermal Analysis³

D 3641 Practice for Injection Molding Test Specimens of Thermoplastic Molding and Extrusion Materials³

D 3892 Practice for Packaging/Packing of Plastics³

D 4000 Classification System for Specifying Plastic Materials³

D 5630 Test Method for Ash Content in Thermoplastics⁴

E 29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications⁵

3. Terminology

3.1 Except for the term defined as follows, the terminology used in this classification system is in accordance with Terminologies D 883 and D 1600.

3.2 Definition:

3.2.1 *polyketone (PK)*, *n*—a linear alternating polymer of carbon monoxide and at least one ethylenically unsaturated hydrocarbon.

4. Classification

4.1 Unreinforced polyketone materials are classified into groups according to their composition. These groups are subdivided into classes and grades as shown in Table PK.

NOTE 2—An example of this classification system is given as follows. The designation PK0112 indicates the following:

PK	=	Polyketone as found in Terminology D 1600,
01	=	Ethylene-propylene copolymer (group),
1	=	General purpose (class), and
2	=	Requirements given in Table PK (grade).

³ Annual Book of ASTM Standards, Vol 08.02.

⁴ Annual Book of ASTM Standards, Vol 08.03.

⁵ Annual Book of ASTM Standards, Vol 14.02.

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