



Designation: D 4000 – 07

Standard Classification System for Specifying Plastic Materials¹

This standard is issued under the fixed designation D 4000; 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 approval. 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 standard provides a classification system for tabulating the properties of unfilled, filled, and reinforced plastic materials suitable for processing into parts.

NOTE 1—The classification system may serve many of the needs of industries using plastic materials. The standard is subject to revision as the need requires; therefore, the latest revision should always be used.

1.2 The classification system and subsequent line callout (specification) is intended to be a means of identifying 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 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 inherent properties of the material not covered in this document, and the economic factors.

1.3 This classification system is based on the premise that plastic materials can be arranged into broad generic families using basic properties to arrange the materials into groups, classes, and grades. A system is thus established which, together with values describing additional requirements, permits as complete a description as desired of the selected material.

1.4 In all cases where the provisions of this classification system would conflict with the referenced ASTM specification for a particular material, the latter shall take precedence.

NOTE 2—When using this classification system the two-letter, three-digit suffix system applies.

NOTE 3—When a material is used to fabricate a part where the requirements are too specific for a broad material callout, it is advisable for the user to consult the supplier to secure callout of the properties to suit the actual conditions to which the part is to be subjected.

1.5 *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 appro-*

priate safety and health practices and determine the applicability of regulatory limitations prior to use.

2. Referenced Documents

2.1 ASTM Standards:²

- D 149 Test Method for Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies
- D 150 Test Methods for AC Loss Characteristics and Permittivity (Dielectric Constant) of Solid Electrical Insulation
- D 256 Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics
- D 257 Test Methods for DC Resistance or Conductance of Insulating Materials
- D 395 Test Methods for Rubber Property—Compression Set
- D 412 Test Methods for Vulcanized Rubber and Thermoplastic Elastomers—Tension
- D 471 Test Method for Rubber Property—Effect of Liquids
- D 495 Test Method for High-Voltage, Low-Current, Dry Arc Resistance of Solid Electrical Insulation
- D 569 Method for Measuring the Flow Properties of Thermoplastic Molding Materials³
- D 570 Test Method for Water Absorption of Plastics
- D 573 Test Method for Rubber—Deterioration in an Air Oven
- D 575 Test Methods for Rubber Properties in Compression
- D 618 Practice for Conditioning Plastics for Testing
- D 624 Test Method for Tear Strength of Conventional Vulcanized Rubber and Thermoplastic Elastomers
- D 635 Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position
- D 638 Test Method for Tensile Properties of Plastics
- D 648 Test Method for Deflection Temperature of Plastics Under Flexural Load in the Edgewise Position
- D 695 Test Method for Compressive Properties of Rigid Plastics

¹ This classification system is under the jurisdiction of ASTM Committee D20 on Plastics and is the direct responsibility of Subcommittee D20.94 on Government/Industry Standardization (Section D20.94.01).

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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.

³ Withdrawn.

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

- D 706** Specification for Cellulose Acetate Molding and Extrusion Compounds
- D 707** Specification for Cellulose Acetate Butyrate Molding and Extrusion Compounds
- D 747** Test Method for Apparent Bending Modulus of Plastics by Means of a Cantilever Beam
- D 785** Test Method for Rockwell Hardness of Plastics and Electrical Insulating Materials
- D 787** Specification for Ethyl Cellulose Molding and Extrusion Compounds
- D 788** Classification System for Poly(Methyl Methacrylate) (PMMA) Molding and Extrusion Compounds
- D 789** Test Methods for Determination of Solution Viscosities of Polyamide (PA)
- D 790** Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
- D 792** Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement
- D 883** Terminology Relating to Plastics
- D 955** Test Method of Measuring Shrinkage from Mold Dimensions of Thermoplastics
- D 1003** Test Method for Haze and Luminous Transmittance of Transparent Plastics
- D 1149** Test Methods for Rubber Deterioration—Cracking in an Ozone Controlled Environment
- D 1203** Test Methods for Volatile Loss From Plastics Using Activated Carbon Methods
- D 1238** Test Method for Melt Flow Rates of Thermoplastics by Extrusion Plastometer
- D 1248** Specification for Polyethylene Plastics Extrusion Materials for Wire and Cable
- D 1430** Classification System for Polychlorotrifluoroethylene (PCTFE) Plastics
- D 1434** Test Method for Determining Gas Permeability Characteristics of Plastic Film and Sheet
- D 1435** Practice for Outdoor Weathering of Plastics
- D 1499** Practice for Filtered Open-Flame Carbon-Arc Exposures of Plastics
- D 1505** Test Method for Density of Plastics by the Density-Gradient Technique
- D 1525** Test Method for Vicat Softening Temperature of Plastics
- D 1562** Specification for Cellulose Acetate Propionate Molding and Extrusion Compounds
- D 1600** Terminology for Abbreviated Terms Relating to Plastics
- D 1693** Test Method for Environmental Stress-Cracking of Ethylene Plastics
- D 1784** Specification for Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds
- D 1822** Test Method for Tensile-Impact Energy to Break Plastics and Electrical Insulating Materials
- D 1929** Test Method for Determining Ignition Temperature of Plastics
- D 2116** Specification for FEP-Fluorocarbon Molding and Extrusion Materials
- D 2137** Test Methods for Rubber Property—Brittleness Point of Flexible Polymers and Coated Fabrics
- D 2240** Test Method for Rubber Property—Durometer Hardness
- D 2287** Specification for Nonrigid Vinyl Chloride Polymer and Copolymer Molding and Extrusion Compounds
- D 2288** Test Method for Weight Loss of Plasticizers on Heating
- D 2565** Practice for Xenon-Arc Exposure of Plastics Intended for Outdoor Applications
- D 2583** Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor
- D 2584** Test Method for Ignition Loss of Cured Reinforced Resins
- D 2632** Test Method for Rubber Property—Resilience by Vertical Rebound
- D 2843** Test Method for Density of Smoke from the Burning or Decomposition of Plastics
- D 2863** Test Method for Measuring the Minimum Oxygen Concentration to Support Candle-Like Combustion of Plastics (Oxygen Index)
- D 2951** Test Method for Resistance of Types III and IV Polyethylene Plastics to Thermal Stress-Cracking³
- D 3012** Test Method for Thermal-Oxidative Stability of Polypropylene Using a Specimen Rotator Within an Oven
- D 3159** Specification for Modified ETFE-Fluoropolymer Molding and Extrusion Materials
- D 3222** Specification for Unmodified Poly(Vinylidene Fluoride) (PVDF) Molding Extrusion and Coating Materials
- D 3275** Classification System for E-CTFE-Fluoroplastic Molding, Extrusion, and Coating Materials
- D 3294** Specification for Polytetrafluoroethylene (PTFE) Resin Molded Sheet and Molded Basic Shapes
- D 3295** Specification for PTFE Tubing, Miniature Beading and Spiral Cut Tubing
- D 3296** Specification for FEP-Fluorocarbon Tube
- D 3307** Specification for Perfluoroalkoxy (PFA)-Fluorocarbon Resin Molding and Extrusion Materials
- D 3350** Specification for Polyethylene Plastics Pipe and Fittings Materials
- D 3418** Test Method for Transition Temperatures and Enthalpies of Fusion and Crystallization of Polymers by Differential Scanning Calorimetry
- D 3595** Specification for Polychlorotrifluoroethylene (PCTFE) Extruded Plastic Sheet and Film
- D 3638** Test Method for Comparative Tracking Index of Electrical Insulating Materials
- D 3713** Test Method for Measuring Response of Solid Plastics to Ignition by a Small Flame³
- D 3801** Test Method for Measuring the Comparative Burning Characteristics of Solid Plastics in a Vertical Position
- D 3892** Practice for Packaging/Packing of Plastics
- D 3895** Test Method for Oxidative-Induction Time of Polyolefins by Differential Scanning Calorimetry

- D 3915** Specification for Rigid Poly(Vinyl Chloride) (PVC) and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds for Plastic Pipe and Fittings Used in Pressure Applications
- D 3935** Specification for Polycarbonate (PC) Unfilled and Reinforced Material
- D 3965** Specification for Rigid Acrylonitrile-Butadiene-Styrene (ABS) Materials for Pipe and Fittings
- D 3985** Test Method for Oxygen Gas Transmission Rate Through Plastic Film and Sheeting Using a Coulometric Sensor
- D 4020** Specification for Ultra-High-Molecular-Weight Polyethylene Molding and Extrusion Materials
- D 4066** Classification System for Nylon Injection and Extrusion Materials (PA)
- D 4067** Classification System for Reinforced and Filled Poly(Phenylene Sulfide) (PPS) Injection Molding and Extrusion Materials Using ASTM Methods
- D 4101** Specification for Polypropylene Injection and Extrusion Materials
- D 4181** Classification for Acetal (POM) Molding and Extrusion Materials³
- D 4203** Specification for Styrene-Acrylonitrile (SAN) Injection and Extrusion Materials
- D 4216** Specification for Rigid Poly(Vinyl Chloride) (PVC) and Related PVC and Chlorinated Poly(Vinyl Chloride) (CPVC) Building Products Compounds
- D 4329** Practice for Fluorescent UV Exposure of Plastics
- D 4349** Classification System for Polyphenylene Ether (PEE) Materials
- D 4364** Practice for Performing Outdoor Accelerated Weathering Tests of Plastics Using Concentrated Sunlight
- D 4396** Specification for Rigid Poly(Vinyl Chloride) (PVC) and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds for Plastic Pipe and Fittings Used in Nonpressure Applications
- D 4441** Specification for Aqueous Dispersions of Polytetrafluoroethylene
- D 4474** Classification System for Styrenic Thermoplastic Elastomer Injection Molding and Extrusion Materials (TES)
- D 4507** Specification for Thermoplastic Polyester (TPES) Materials³
- D 4549** Specification for Polystyrene and Rubber-Modified Polystyrene Molding and Extrusion Materials (PS)
- D 4617** Classification System for Phenolic Compounds (PF)
- D 4634** Specification for Styrene-Maleic Anhydride Materials (S/MA)
- D 4673** Classification System for Acrylonitrile-Butadiene-Styrene (ABS) Plastics and Alloys Molding and Extrusion Materials
- D 4745** Specification for Filled Compounds of Polytetrafluoroethylene (PTFE) Molding and Extrusion Materials
- D 4804** Test Method for Determining the Flammability Characteristics of Nonrigid Solid Plastics
- D 4812** Test Method for Unnotched Cantilever Beam Impact Resistance of Plastics
- D 4894** Specification for Polytetrafluoroethylene (PTFE) Granular Molding and Ram Extrusion Materials
- D 4895** Specification for Polytetrafluoroethylene (PTFE) Resin Produced From Dispersion
- D 4976** Specification for Polyethylene Plastics Molding and Extrusion Materials
- D 4986** Test Method for Horizontal Burning Characteristics of Cellular Polymeric Materials
- D 5021** Specification for Thermoplastic Elastomer-Chlorinated Ethylene Alloy (TECEA)
- D 5033** Guide for Development of ASTM Standards Relating to Recycling and Use of Recycled Plastics
- D 5046** Classification for Fully Crosslinked Elastomeric Alloys (FCEAs)³
- D 5048** Test Method for Measuring the Comparative Burning Characteristics and Resistance to Burn-Through of Solid Plastics Using a 125-mm Flame
- D 5132** Test Method for Horizontal Burning Rate of Polymeric Materials Used in Occupant Compartments of Motor Vehicles
- D 5138** Classification System for Liquid Crystal Polymers (LCP)
- D 5203** Specification for Polyethylene Plastics Molding and Extrusion Materials from Recycled Post-Consumer (HDPE) Sources
- D 5204** Classification System for Polyamide-Imide (PAI) Molding and Extrusion Materials
- D 5205** Classification System for Polyetherimide (PEI) Materials
- D 5260** Classification for Chemical Resistance of Poly(Vinyl Chloride) (PVC) Homopolymer and Copolymer Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds
- D 5279** Test Method for Plastics: Dynamic Mechanical Properties: In Torsion
- D 5336** Specification for Polyphthalamide (PPA) Injection Molding Materials
- D 5420** Test Method for Impact Resistance of Flat, Rigid Plastic Specimen by Means of a Striker Impacted by a Falling Weight (Gardner Impact)
- D 5436** Specification for Cast Poly(Methyl Methacrylate) Plastic Rods, Tubes, and Shapes
- D 5476** Classification System for Thermoplastic Polyurethane Materials (TPU)³
- D 5575** Specification for Copolymers of Vinylidene Fluoride (VDF) with Other Fluorinated Monomers
- D 5593** Classification for Thermoplastic Elastomers—Olefinic (TEO)³
- D 5628** Test Method for Impact Resistance of Flat, Rigid Plastic Specimens by Means of a Falling Dart (Tup or Falling Mass)
- D 5630** Test Method for Ash Content in Plastics
- D 5676** Specification for Recycled Polystyrene Molding and Extrusion Materials³
- D 5857** Specification for Polypropylene Injection and Extrusion Materials Using ISO Protocol and Methodology

- D 5927** Specification for Thermoplastic Polyester (TPES) Injection and Extrusion Materials Based on ISO Test Methods
- D 5990** Classification System for Polyketone Injection Molding and Extrusion Materials (PK)
- D 6314** Specification for Fluorocarbon Perfluoromethoxy (MFA) Resin Molding and Extrusion Materials³
- D 6338** Classification System for Highly Crosslinked Thermoplastic Vulcanizates (HCTPVs)
- D 6339** Specification for Syndiotactic Polystyrene Molding and Extrusion (SPS)
- D 6358** Classification System for Poly (Phenylene Sulfide) Injection Molding and Extrusion Materials Using ISO Methods
- D 6360** Practice for Enclosed Carbon-Arc Exposures of Plastics
- D 6394** Specification for Sulfone Plastics (SP)
- D 6457** Specification for Extruded and Compression Molded Rod and Heavy-Walled Tubing Made from Polytetrafluoroethylene (PTFE)
- D 6585** Specification for Unsintered Polytetrafluoroethylene (PTFE) Extruded Film or Tape
- D 6778** Classification for Polyoxymethylene (POM, Acetal) Molding and Extrusion Materials
- D 6779** Classification System for Polyamide Molding and Extrusion Materials (PA)
- D 6835** Classification System for Thermoplastic Elastomer-Ether-Ester Molding and Extrusion Materials (TEEE)
- E 29** Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications
- E 84** Test Method for Surface Burning Characteristics of Building Materials
- E 96/E 96M** Test Methods for Water Vapor Transmission of Materials
- E 104** Practice for Maintaining Constant Relative Humidity by Means of Aqueous Solutions
- E 119** Test Methods for Fire Tests of Building Construction and Materials
- E 162** Test Method for Surface Flammability of Materials Using a Radiant Heat Energy Source
- E 662** Test Method for Specific Optical Density of Smoke Generated by Solid Materials
- E 1354** Test Method for Heat and Visible Smoke Release Rates for Materials and Products Using an Oxygen Consumption Calorimeter
- F 372** Test Method for Water Vapor Transmission Rate of Flexible Barrier Materials Using an Infrared Detection Technique
- 2.2 *Federal Standard*:⁴
Department of Transportation Federal Motor Vehicle Safety Standard No. 302
- 2.3 *Underwriters Laboratories*:⁵
UL94 Standards for Tests for Flammability for Parts in

- Devices and Appliances
- 2.4 *IEC and ISO Standards*:⁶
- IEC 600093** Recommended Methods of Tests for Volume and Surface Resistivities of Electrical Insulation Materials
- IEC 600112** Recommended Method for Determining the Comparative Tracking Index of Solid Insulation Materials Under Moist Conditions
- IEC 600243** Recommended Methods of Test for Electrical Strength of Solid Insulating Materials at Power Frequencies
- IEC 600250** Recommended Methods for the Determination of the Permittivity and Dielectric Dissipation Factor of Electrical Insulation Materials at Power, Audio, and Radio Frequencies Including Metre Wavelengths
- IEC 60695-2-12** Fire Hazard Testing—Part 2-12: Glowing/Hot-Wire Based Test Methods—Glow-Wire Flammability Test Method for Materials
- IEC 60695-11-10** Fire Hazard Testing—Part 11-10: Test Flames—50 W Horizontal and Vertical Flame Tests
- IEC 60695-11-20** Fire Hazard Testing—Part 11-20: Test Flames—500 W Flame Test Methods
- ISO 62** Plastics—Determination of Water Absorption
- ISO 75-1** Plastics—Determination of Temperature of Deflection Under Load—Part 1: General Principles
- ISO 75-2** Plastics—Determination of Temperature of Deflection Under Load—Part 2: Plastics and Ebonite
- ISO 178** Plastics—Determination of Flexural Properties of Rigid Plastics
- ISO 179** Plastics—Determination of Charpy Impact Strength of Rigid Materials
- ISO 180** Plastics—Determination of Izod Impact Strength of Rigid Materials
- ISO 294-4** Plastics—Injection Moulding of Test Specimens of Thermoplastic Materials—Part 4: Determination of Moulding Shrinkage
- ISO 527-1** Plastics—Determination of Tensile Properties—Part 1: General Principles
- ISO 527-2** Plastics—Determination of Tensile Properties—Part 2: Test Conditions for Moulding and Extrusion Plastics
- ISO 604** Plastics—Determination of Compressive Properties
- ISO 868** Plastics—Determination of Indention Hardness by Means of a Durometer (Shore Hardness)
- ISO 877** Plastics—Determination of Resistance to Change Upon Exposure Under Glass to Daylight
- ISO 974** Plastics—Determination of the Brittleness Temperature by Impact
- ISO 1133** Plastics—Determination of the Melt Mass-Flow Rate (MFR) and the Melt Volume-Flow Rate (MVR) of Thermoplastics
- ISO 1183** Plastics—Methods for Determining the Density and Relative Density of Non-Cellular Plastics
- ISO 2039-2** Plastics—Determination of Hardness—Part 2: Rockwell Hardness

⁴ Available from Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

⁵ Available from Underwriters Laboratories, Inc., Publication Stock, 333 Pfingsten Rd., Northbrook, IL 60062.

⁶ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036.

- ISO 3795** Road Vehicles, Tractors, and Machinery for Agriculture and Forestry—Determination of Burning Behavior of Interior Materials
- ISO 4577** Plastics—Polypropylene and Propylene—Copolymers—Determination of Thermal Oxidative Stability in Air-Oven Method
- ISO 4589** Plastics—Determination of Flammability by Oxygen Index
- ISO 4607** Plastics—Method of Exposure to Natural Weathering
- ISO 4892** Plastics—Methods of Exposure to Laboratory Light Sources
- ISO 4892-4** Plastics—Methods of Exposure to Laboratory Light Sources—Part 4: Open-flame Carbon-arc
- ISO 5659** Plastics—Smoke Regeneration—Part 2: Determination of Optical Density by a Single-Chamber Test
- ISO 6603-1** Plastics—Determination of Multiaxial Impact Behavior of Rigid Plastics—Part 1: Falling Dart Method
- ISO 6721-1** Plastics—Determination of Dynamic Mechanical Properties—Part 1: General Principles
- ISO 6721-2** Plastics—Determination of Dynamic Mechanical Properties—Part 2: Torsion-Pendulum Method
- ISO 9772** Cellular Plastics—Determination of Horizontal Burning Characteristics of Small Specimens Subjected to a Small Flame
- ISO 9773** Plastics—Determination of Burning Behaviour of Thin Flexible Vertical Specimens in Contact with a Small-Flame Ignition Source
- ISO 11357-1** Plastics—Differential Scanning Calorimetry—Part 1: General principles
- ISO 11357-3** Plastics—Differential Scanning Calorimetry—Part 3: Determination of Temperature and Enthalpy of Melting and Crystallization

TABLE 1 Standard Symbols for Generic Families With Referenced Standards and Cell Tables

Standard Symbol	Plastic Family Name	ASTM ^A Standard	Suggested Reference Cell Tables for Materials Without an ASTM Standard ^B	
			Unfilled	Filled
ABA	acrylonitrile-butadiene-acrylate		E	
ABS	acrylonitrile-butadiene-styrene	D 3965, D 4673		
AMMA	acrylonitrile-methyl methacrylate		E	
ARP	aromatic polyester	(see LCP)		
ASA	acrylonitrile-styrene-acrylate		E	
CA	cellulose acetate	D 706		
CAB	cellulose acetate butyrate	D 707		
CAP	cellulose acetate propionate		E	D
CE	cellulose plastics, general		E	D
CF	cresol formaldehyde		H	H
CMC	carboxymethyl cellulose		E	
CN	cellulose nitrate		E	D
CP	cellulose propionate	D 1562		
CPE	chlorinated polyethylene		F	
CPVC	chlorinated poly(vinyl chloride)	D 4396, D 1784, D 5260, D 3915, D 4216		
CS	casein		H	H
CTA	cellulose triacetate		E	D
EC	ethyl cellulose	D 787	E	D
E-CTFE	ethylene-chlorotrifluoroethylene copolymer	D 3275		
EEA	ethylene-ethyl acrylate		F	
EMA	ethylene-methacrylic acid		F	
EP	epoxy, epoxide		H	H
EPD	ethylene-propylene-diene			
EPM	ethylene-propylene polymer		F	D
ETFE	ethylene-tetrafluoroethylene copolymer	D 3159		
EVA	ethylene-vinyl acetate		F	
FCEA	fully crosslinked elastomeric alloy	D 5046		
FEP	perfluoro (ethylene-propylene) copolymer	D 2116		
FF	furan formaldehyde	D 3296	H	H
HCTPV	highly crosslinked thermoplastic vulcanizates	D 6338		
IPS	impact polystyrene	(see PS)		
LCP	liquid crystal polymer	D 5138		
MF	melamine-formaldehyde		H	H
PA	polyamide (nylon)	D 4066, D 6779		
PAEK	polyacryletherketone			
PAI	polyamide-imide	D 5204	G	G
PARA	polyacryl amide			
PB	polybutene-1		F	
PBT	poly(butylene terephthalate)	(see TPES)		
PC	polycarbonate	D 3935		
PCTFE	polymonochlorotrifluoroethylene	D 1430, D 3595		
PDAP	poly(diallyl phthalate)		H	H
PE	polyethylene	D 1248, D 4976, D 3350, D 4020, D 5203		
PEBA	polyether block amide			
PEEK	polyetheretherketone			
PEI	polyether-imide	D 5205		
PEO	poly(ethylene oxide)			

TABLE 1 *Continued*

Standard Symbol	Plastic Family Name	ASTM ^A Standard	Suggested Reference Cell Tables for Materials Without an ASTM Standard ^B	
			Unfilled	Filled
PESU	polyether sulfone	D 6394		
PET	poly(ethylene terephthalate), general	(see TPES)		
PETG	glycol modified polyethylene terephthalate comonomer	(see TPES)		
PF	phenol-formaldehyde	D 4617		
PFA	perfluoro alkoxy alkane	D 3307		
PI	polyimide		G	G
PIB	polyisobutylene		F	
PK	polyketone	D 5990		
PMMA	Poly(methyl methacrylate)	D 788, D 5436		D
PMP	poly(4-methylpentene-1)		F	
POM	polyoxymethylene (acetal)	D 4181, D 6778		
POP	polyphenylene oxide	(see PPE)		
PP	polypropylene	D 4101, D 5857		
PPA	polyphthalamide	D 5336, D 6779		
PPE	polyphenylene ether	D 4349		
PPOX	poly(propylene oxide)			
PPS	poly(phenylene sulfide)	D 4067, D 6358		
PPSU	poly(phenyl sulfone)	D 6394	G	G
PS	polystyrene	D 4549, D 5676		
PSU	polysulfone	D 6394		
PTFE	polytetrafluoroethylene	D 1430, D 3159, D 3222, D 3294, D 3295, D 3307, D 4441, D 4745, D 4894, D 4895, D 5575, D 6314, D 6457, D 6585		
PUR	polyurethane		F	D
PVAC	poly(vinyl acetate)		F	D
PVAL	poly(vinyl alcohol)		F	D
PVB	poly(vinyl butyral)		F	D
PVC	poly(vinyl chloride)	D 2287	F	D
PVDC	poly(vinylidene chloride)		F	D
PVDF	poly(vinylidene fluoride)	D 3222		
PVF	poly(vinyl fluoride)		F	D
PVFM	poly(vinyl formal)		F	D
PVK	poly(vinylcarbazole)		F	D
PVP	poly(vinyl pyrrolidone)		F	D
SAN	styrene-acrylonitrile	D 4203		
SB	styrene-butadiene		E	D
SI	silicone plastics		G	G
S/MA	styrene-maleic anhydride	D 4634		
SMS	styrene-methylstyrene		E	D
SPS	syndiotactic polystyrene	D 6339		
TECEA	thermoplastic elastomer-chlorinated ethylene alloy	D 5021		
TEEE	thermoplastic elastomer, ether-ester	D 6835		
TEO	thermoplastic elastomer-olefinic	D 5593		
TES	thermoplastic elastomer-stryenic	D 4474		
TPE	thermoplastic elastomer	(see individual material)		
TPES	thermoplastic polyester (general)	D 4507, D 5927		
TPU	thermoplastic polyurethane	D 5476		
UF	urea-formaldehyde		H	H
UP	unsaturated polyester			
VDF	vinylidene fluoride	D 5575		

^AThe standards listed are those in accordance with this classification. D __ indicates that a standard is being developed by the subcommittee responsible.

^BCell Tables A and B have been reserved for the referenced standards and will apply to unfilled and filled materials covered in those standards.

TABLE 2 Reinforcement-Filler^A Symbols^B and Tolerance

Symbol	Material	Tolerance
C	Carbon and graphite	±2 percentage points
D	Alumina trihydrate	±2 percentage points
E	Clay	±2 percentage points
F	Cellulose	±2 percentage points
G	Glass	±2 percentage points
H	Aramid	±2 percentage points
J	Boron	±2 percentage points
K	Calcium carbonate	±2 percentage points
L	Lubricants (for example, PTFE, graphite, and so forth)	Depends upon material and process, to be specified
M	Mineral	±2 percentage points
N	Natural organic (cotton, sisal, hemp, flax, and so forth)	±2 percentage points
P	Mica	±2 percentage points
Q	Silica	±2 percentage points
R	Combinations of reinforcements or fillers, or both	±3 percentage points
S	Synthetic organic	±2 percentage points