



Standard Guide for Techniques to Separate and Identify Contaminants in Recycled Plastics¹

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^{ε1} NOTE—Reapproved with editorial change to [Note 1](#) in January 2010.

1. Scope

1.1 This guide is intended to provide information on available methods for the separation and classification of contaminants such as moisture, incompatible polymers, metals, adhesives, glass, paper, wood, chemicals, and original-product residues in recycled plastic flakes or pellets. Although no specific methods for identification or characterization of foam products are included, foam products are not excluded from this guide. The methods presented apply to post-consumer plastics.

1.2 For specific procedures existing as ASTM test methods, this guide only lists the appropriate reference. Where no current ASTM standard exists, however, this guide gives procedures for the separation or identification, or both, of specific contaminants. [Appendix X1](#) lists the tests and the specific contaminant addressed by each procedure.

1.3 This guide does not include procedures to quantify the contaminants unless this information is available in referenced ASTM standards.

1.4 *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:²

[D789](#) Test Methods for Determination of Solution Viscosities of Polyamide (PA)

[D792](#) Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement
[D883](#) Terminology Relating to Plastics
[D1003](#) Test Method for Haze and Luminous Transmittance of Transparent Plastics
[D1193](#) Specification for Reagent Water
[D1238](#) Test Method for Melt Flow Rates of Thermoplastics by Extrusion Plastometer
[D1457](#) Specification for Polytetrafluoroethylene (Ptfе) Molding and Extrusion Materials (Withdrawn 1996)³
[D1505](#) Test Method for Density of Plastics by the Density-Gradient Technique
[D1898](#) Practice for Sampling of Plastics (Withdrawn 1998)³
[D1925](#) Test Method for Yellowness Index of Plastics (Withdrawn 1995)³
[D3418](#) Test Method for Transition Temperatures and Enthalpies of Fusion and Crystallization of Polymers by Differential Scanning Calorimetry
[D4019](#) Test Method for Moisture in Plastics by Coulometric Regeneration of Phosphorus Pentoxide (Withdrawn 2002)³
[D5033](#) Guide for Development of ASTM Standards Relating to Recycling and Use of Recycled Plastics (Withdrawn 2007)³
[D5227](#) Test Method for Measurement of Hexane Extractable Content of Polyolefins
[E169](#) Practices for General Techniques of Ultraviolet-Visible Quantitative Analysis
[E355](#) Practice for Gas Chromatography Terms and Relationships
[E682](#) Practice for Liquid Chromatography Terms and Relationships
[E794](#) Test Method for Melting And Crystallization Temperatures By Thermal Analysis
[E1252](#) Practice for General Techniques for Obtaining Infrared Spectra for Qualitative Analysis

¹ This guide is under the jurisdiction of ASTM Committee [D20](#) on Plastics and is the direct responsibility of Subcommittee [D20.95](#) on Recycled Plastics.

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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 The last approved version of this historical standard is referenced on www.astm.org.