



Designation: D5577 – 19

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

This standard is issued under the fixed designation D5577; 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 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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

NOTE 1—There is no known ISO equivalent to this standard.

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

- D789 Test Method for Determination of Relative Viscosity of Concentrated Polyamide (PA) Solutions
- 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 (PTFE) 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

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.