



Designation: D 6400 – 99^{ε1}

Standard Specification for Compostable Plastics¹

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^{ε1} NOTE—Editorially corrected standard listed under 2.3 in April 2002.

1. Scope

1.1 This specification covers plastics and products made from plastics that are designed to be composted in municipal and industrial aerobic composting facilities.

1.2 This specification is intended to establish the requirements for labeling of materials and products, including packaging made from plastics, as “compostable in municipal and industrial composting facilities.”

1.3 The properties in this specification are those required to determine if plastics and products made from plastics will compost satisfactorily, including biodegrading at a rate comparable to known compostable materials. Further, the properties in the specification are required to assure that the degradation of these materials will not diminish the value or utility of the compost resulting from the composting process.

1.4 The following safety hazards caveat pertains to the test methods portion of this standard: *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 health and safety practices and to determine the applicability of regulatory limitations prior to use.*

NOTE 1—No equivalent ISO specifications exist for this standard.

2. Referenced Documents

2.1 ASTM Standards:

D 883 Terminology Relating to Plastics²

D 5338 Test Method for Determining Aerobic Biodegradation of Plastic Materials Under Controlled Composting Conditions³

D 6002 Guide for Assessing the Compostability of Environmentally Degradable Plastics³

2.2 *Organization for Economic Development (OECD) Standard:*⁴

OECD Guideline 208 Terrestrial Plants, Growth Test

2.3 *Comite Europeen de Normalisation (CEN) Draft:*⁵

CEN/TC 261/SC 4 N 99 Packaging—Requirements for Packaging Recoverable through Composting and Biodegradation—Test Scheme and Evaluation Criteria for the Final Acceptance of Packaging (prEN 13432)

2.4 *ISO Standard:*⁵

ISO 14855 Evaluation of the Ultimate Aerobic Biodegradability and Disintegration of Plastics under Controlled Composting Conditions—Method by Analysis of Evolved Carbon Dioxide

2.5 *Government Standard:*⁶

40 CFR Part 503.13 Standards for the Use or Disposal of Sewage Sludge

3. Terminology

3.1 *Definitions*—Definitions appearing in this specification are found in Terminology D 883, unless otherwise noted.

3.1.1 *biodegradable plastic*—a degradable plastic in which the degradation results from the action of naturally occurring microorganisms such as bacteria, fungi, and algae.

3.1.2 *compostable plastic*—a plastic that undergoes degradation by biological processes during composting to yield CO₂, water, inorganic compounds, and biomass at a rate consistent with other known compostable materials and leave no visible, distinguishable or toxic residue.

3.1.3 *composting*⁷—a managed process that controls the biological decomposition and transformation of biodegradable materials into a humus-like substance called compost: the aerobic mesophilic and thermophilic degradation of organic matter to make compost; the transformation of biologically decomposable material through a controlled process of biooxidation that proceed through mesophilic and thermophilic phases and results in the production of carbon dioxide, water, minerals, and stabilized organic matter (compost or humus).

¹ This specification is under the jurisdiction of ASTM Committee D-20 on Plastics and is the direct responsibility of Subcommittee D20.96 on Environmentally Degradable Plastics.

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² *Annual Book of ASTM Standards*, Vol 08.01.

³ *Annual Book of ASTM Standards*, Vol 08.03.

⁴ Available from Organization for Economic Development, Director of Information, 2 rue Andre' Pascal, 75775 Paris Cedex 16, France.

⁵ Available from American National Standards Institute, 11 W. 42nd St., 13th Floor, New York, NY 10036.

⁶ *Code of Federal Regulations*, available from U.S. Government Printing Office, Washington, DC 20402.

⁷ *Compost Facility Operating Guide*, Composting Council, Alexandria, VA, 1995.