



Standard Specification for Non-Floating Biodegradable Plastics in the Marine Environment¹

This standard is issued under the fixed designation D7081; 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 specification covers products made from plastics (including packaging and coatings) that are designed to be biodegradable under the marine environmental conditions of aerobic marine waters or anaerobic marine sediments, or both. (Possible environments are shallow and deep salt water and brackish water.)

1.2 This specification is intended to establish the requirements for labeling materials and products, including packaging, as “biodegradable in marine waters and sediments.”

1.3 The properties in this specification are those required to determine if products (including packaging) will biodegrade 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 marine resources and habitat.

1.4 This specification does not describe contents or their performance with regard to biodegradability.

1.5 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—There is no known ISO equivalent to this standard.

2. Referenced Documents

2.1 *ASTM Standards*:²

[D883 Terminology Relating to Plastics](#)

[D5338 Test Method for Determining Aerobic Biodegradation of Plastic Materials Under Controlled Composting Conditions](#)

[D6002 Guide for Assessing the Compostability of Environmentally Degradable Plastics](#)

[D6400 Specification for Compostable Plastics](#)

[D6691 Test Method for Determining Aerobic Biodegradation of Plastic Materials in the Marine Environment by a Defined Microbial Consortium](#)

2.2 *ISO Standards*:³

[ISO 14851:1999](#) Determination of the Ultimate Aerobic Biodegradability of Plastic Materials in an Aqueous Medium—Method by Measuring the Oxygen Demand in a Closed Respirometer

[ISO 14852:1999](#) Determination of the Ultimate Aerobic Biodegradability of Plastic Materials in an Aqueous Medium—Method by Analysis of Evolved Carbon Dioxide

[ISO 14855:1999](#) Determination of the Ultimate Aerobic Biodegradability and Disintegration of Plastic Materials under Controlled Composting Conditions—Method by Analysis of Evolved Carbon Dioxide

2.3 *Comite European de Normalisation (CEN)*:³

[EN 13432](#) Packaging—Requirements for Packaging Recoverable through Composting and Biodegradation—Test Scheme and Evaluation Criteria for the Final Acceptance of Packaging

2.4 *Government Standards*:⁴

[40 CFR Part 141](#) National Primary Drinking Water Regulations

[40 CFR Part 143](#) National Secondary Drinking Water Regulations

[OPPTS 850.1010](#) Aquatic Invertebrate Acute Toxicity Test, Freshwater Daphnids

[OPPTS 850.1075](#) Estuarine/Marine Fish Acute Toxicity Study

[OPPTS 850.5400](#) Algal Acute Toxicity Study

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

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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. Terminology

3.1 For definitions of terms used in this specification, refer to Terminology [D883](#).

³ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036.

⁴ *Code of Federal Regulations*, available from U.S. Government Printing Office, Washington, DC 20402.