

INDUSTRIAL COMPOSTABILITY CLAIMS CHECKLIST

Guidance Document of the PLASTICS Bioplastics Division

PUBLISHED (JUNE 2016)



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This information is provided in good faith and is believed to be reliable when written. It does not constitute legal advice. Regulatory authorities may interpret the suitability of particular tests in substantiating specific claims applicable to individual products differently. Always seek advice from your own legal advisers about your advertising claims. It is the responsibility of individual companies to confirm that compostability or other claims are appropriate for the particular product or package.



INTRODUCTION

Bioplastics share many of the valuable functional characteristics of conventional plastics such as processability, durability, and recycling. Compostability however, is a functional characteristic that is unique to some types of bioplastics.¹ Composting, like recycling, is an attractive means of avoiding landfill disposal, and there has been an increased consumer demand in biodegradable/compostable plastics.² Industrial composting differs from home composting in that the process is much more closely managed and monitored to ensure high temperature conditions.³ This document addresses claims made relative to industrial composting only.

It is important that composting claims for consumer products be made carefully, with consideration of appropriate scientific standards, state and federal regulations, and local infrastructure. A marketing claim around any form of biodegradability must be based on the specific product for which the claim is being made. Such claims cannot be made based solely on the compostability attribute of the upstream resin. While a consumer product clearly cannot be compostable unless the underlying materials from which it is made are compostable, it is not a sufficient condition that the underlying materials be compostable.

According to the FTC Green Guides, compostability claims should be qualified with supporting evidence that the “entire product or package will **completely break down and return to nature, within a reasonably short period of time** after customary disposal.”⁴ Compostability rate is **thickness dependent**. ASTM has developed standard specifications, ASTM D6400 and ASTM D6868, for specifying industrial compostability as follows:

1. “Completely break down”: Greater than 90 percent of the article must not remain.⁵
2. “Return to Nature”: Since the products of composting including bioplastic articles will be incorporated into the soil, the D6400 specification goes further to define constraints on ecotoxicity and regulated metals of the composted product to prevent bioaccumulation of materials in the soil.
3. A “reasonably short period of time”: The D6400 specification for industrial composting defines 84 days as reasonable for fragmentation of the product, and 180 days for complete mineralization in a properly managed composting facility.
4. “Customary disposal”: Industrial composting should already be a customary form of disposal in the community where this product will be used and treated.
5. “Thickness Dependent”: The ability for a material or product to compost within the time frame of the specification is dependent upon its thickness. Thus, a material must also state the maximum thickness at which the compostability requirements are passed.⁶

ASTM D6868 is a similar specification for multilayer materials. This specification requires that every layer also pass the biodegradation requirements of ASTM D6400 independently.

¹ While all compostable plastics are considered bioplastics, not all bioplastics are compostable. For more information, refer to “Bioplastics Simplified: Attributes of Biobased and Biodegradable Plastics.” <http://plasticsindustry.org/files/Bioplastics%20Simplified.pdf>

² “Forecast: Global bioplastics production to rise 360 percent” Plastics News, November 6, 2015. <http://www.plasticsnews.com/article/20151106/NEWS/151109899/forecast-global-bioplastics-production-to-rise-360-percent>

³ ASTM D5338-15 “Standard Test Method for Determining Aerobic Biodegradation of Plastic Materials Under Controlled Composting Conditions, Incorporating Thermophilic Temperatures” Published June 2015

⁴ 16 CFR Chapter §260.8(b)

⁵ 90 percent is a reflection of the accuracy of the test and does not imply that 10 percent of an article can be non-biodegradable.

⁶ As a simple example: While it may be possible to compost a sample of bioplastic A, a consumer product made entirely from bioplastic A may not compost at a rate sufficient to meet the compostability standard, simply because it is too thick (a 1 mm thick sample of the material degrades within the specified time frame, while a 2 cm thick part will not).



SELF-CHECKLIST

1. Will the average consumer likely understand the claim?
2. What is the test method and qualifying specification for the claim?
3. Do the tests accurately reflect how the advertised product or package will perform in a typical industrial composting facility?
4. Has independent testing and certification (e.g., ASTM D6400, D6868) by an approved laboratory been completed to confirm compostability? (A qualified claim implies that product/packaging is tested and specified according to standards by 'voluntary consensus standard body' and certified by independent party)
5. Does the claim clearly refer to product, packaging or both?
6. Are there recycling signs or other symbols or images on the packaging or marketing materials that may confuse consumers?
7. How long does it take to achieve complete composting of the product or packaging and is this acceptable for the current program?
8. What is the availability of an industrial composting facility and collection program in the location where the product or packaging is available, and will they accept the product or packaging?
9. Are clear and conspicuous disclaimers included to account for limited facility availability, variances from the certification conditions, improper collection/disposal/recycling or other factors potentially important to purchasers?
10. Have you complied with any local, regional or state labeling requirements (e.g. under California law PRC 42357, no "biodegradable" claims are allowed on any plastic product, and compostable labels are allowed only if they meet ASTM D6400/D6868)?
11. Does the claim indicate an affiliation with any testing and/or certifying agency?
12. Are claims/disclaimers on websites and other marketing materials accurate and consistent with the actual claims on product or packaging?

EXAMPLES OF INDUSTRIAL COMPOSTABILITY CLAIMS

CLAIM 1

(example of improper labeling)

Recycling chasing arrows could confuse



Uses term “biodegradable”

Claims “landfill biodegradable”

- Does not state the intended collection method
- Does not mention lack of collection programs in some areas
- Does not state whether biodegradability pertains to product, packaging or both

Lists scientific testing standard method instead of specification with pass/fail

EXAMPLES OF INDUSTRIAL COMPOSTABILITY CLAIMS

CLAIM 2

(example of confusing labeling)

Recycling chasing arrows cannot be used with any certified compostable claim because of potential for confusion



Lists ASTM D6400 compliance without referencing third party testing or certification

- States can liners are compostable without appropriate qualifiers
- Does not specify the product is compostable in industrial programs only
- Does not mention lack of collection programs in some areas

EXAMPLES OF INDUSTRIAL COMPOSTABILITY CLAIMS

CLAIM 3 (example of improved labeling)

Uses certification logo and states BPI Certified and includes certification number



Lists ASTM D6400 specification along with third party testing or certification

- States “not for home/backyard composting”
- States programs might not exist in many communities

Uses term “compostable” with qualifiers instead of biodegradable

While improved labeling, it still does not specify whether compostable certification is for can liners or box



CLAIM VALIDATION

The Federal Trade Commission (FTC) has provided “Green Guides” since 1992, which provides guidance on how the FTC interprets specific environmental claims. Specific to compostability, the FTC states that there must be: clearly defined disposal location; testing specification used to substantiate claim; and a disclaimer regarding improper collection/management. Furthermore, the FTC explains that:

- a. It is deceptive to misrepresent, directly or by implication, that a product or package is compostable.
- b. A marketer claiming that an item is compostable should have competent and reliable scientific evidence that all the materials in the item will break down into, or otherwise become part of, usable compost (e.g., soil-conditioning material, mulch) in a safe and timely manner (i.e., in approximately the same time as the materials with which it is composted) in an appropriate composting facility, or in a home compost pile or device.
- c. A marketer should clearly and prominently qualify compostable claims to the extent necessary to avoid deception if: (1) the item cannot be composted safely or in a timely manner in a home compost pile or device; or (2) the claim misleads reasonable consumers about the environmental benefit provided when the item is disposed of in a landfill.
- d. To avoid deception about the limited availability of municipal or institutional composting facilities, a marketer should clearly and prominently qualify compostable claims if such facilities are not available to a substantial majority of consumers or communities where the item is sold.

Compostability Standard Specifications

The chart below lists relevant standard specifications designed to measure compostability. Methods should be evaluated for suitability for the particular product or package. Individual countries may have their own standard specification. Please consult the corresponding agency for further information.

| Standard Specification | Title | Duration |
|------------------------|---|--|
| ASTM D6400 | Standard Spec. for Labeling of Plastics Designed to be Aerobically Composted in Municipal or Industrial Facilities | 84 days disintegration; 180 days mineralization |
| ASTM D6868 | Standard Spec. for Biodegradable Plastics Used as Coatings on Paper and Other Compostable Substrates | 84 days disintegration; 180 days mineralization |
| EN 13432 | Requirements for Packaging Recoverable Through Composting and Biodegradation— Test Scheme and Evaluation Criteria for the Final Acceptance of Packaging | 84 days disintegration; 180 days mineralization |
| ISO 17088 | Specifications for Compostable Plastics | 84 days disintegration; 180 days mineralization |

SOURCES

- AS <http://bioplastics.org.au/faq/what-is-the-as4736-standard-for-biodegradable-plastics>
- ASTM <http://www.astm.org/COMMIT/SUBCOMMIT/D2096.htm>
- BPI <http://www.bpiworld.org/>
- FTC <http://www.ftc.gov/policy/federal-register-notice/guides-use-environmental-marketing-claims-green-guides>

APPENDIX 1—TERMINOLOGY

- 1. Biodegradation:** a biological process that naturally occurs in many environments in which micro-organisms such as bacteria, fungi, and algae degrade materials, as evidenced by the generation of carbon dioxide and water, as well as methane if anaerobic.
- 2. Composting:** a managed process that controls the biological decomposition and transformation of biodegradable materials into a humus-like substance called compost
- 3. Home Compostability:** Composting in a small backyard pile or piece of equipment, typically with less control and lower heat than a municipal or commercial facility.
- 4. Industrial Compostability:** Composting in a large municipal or commercial-sized facility capable of generating and sustaining high temperatures.
- 5. Landfill:** Modern landfills are well-engineered facilities that are located, designed, operated, and monitored to ensure compliance with federal regulations. Solid waste landfills must be designed to protect the environment from contaminants which may be present in the solid waste stream. In addition, many new landfills collect potentially harmful landfill gas emissions and convert the gas into energy. For more information, visit EPA's Landfill Methane Outreach Program at: <http://www.epa.gov/outreach/lmop/index.html>

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