

Designing Packaging for Compostability:

*Certification, Diversion of Organics, and
other Considerations*

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Overview of BPI

Historical Context

BPI was formed as a nonprofit in 1999 with the mission to promote the production, use and appropriate end of lives for materials and products that are designed to fully biodegrade in specific biologically active environments, such as industrial composting.

- ❖ *A certification based on scientific standards was needed to help to identify products that were truly compostable, with verifiable claims*
- ❖ *The certification scheme was based on ASTM test methods and specifications, similar to European specifications being used*
- ❖ *The certification was launched in conjunction with the USCC, referencing its “Compost Facility Operating Guide” from 1994/1997 and had the USCC name on the logo*



BPI Goal

BPI's overarching goal: Assist in the diversion of organic waste to composting, by verifying that products and packaging will completely break down in a professionally managed composting facility, without harming the quality of that compost.



The Need: Organics Diversion

Products and packaging are simultaneously one of the biggest barriers, and most significant solutions, to food waste collection and processing programs around the world.

Barrier: Contamination

Solution: Tools for diversion



The screenshot shows the BioCycle website header with the logo "BioCycle.net THE ORGANICS RECYCLING AUTHORITY." and a search bar. Below the header is a navigation menu with links for Home, Magazine, Conferences, Subscribe/Renew, Resources, and Events. The main content area features a red headline "Commentary: Compostable Products: 2016 Outlook" with social media sharing buttons for Like, Tweet, G+, and Pin it. A profile picture of Rhodes Yepsen is shown next to his name and bio: "Rhodes Yepsen BioCycle March/April 2016, Vol. 57, No. 3, p. 51". Below the bio is a short excerpt of his commentary.

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Commentary: Compostable Products: 2016 Outlook

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Rhodes Yepsen
BioCycle March/April 2016, Vol. 57, No. 3, p. 51

Don't miss **Composting Compostable Products** in BioCycle WEST COAST 16.

In September 2015, I was selected as the Director of the Biodegradable Materials Association, a position familiar, as a former Association Executive, as a former Association Executive. The time for the compostable products in the U.S. is at an all time high. The U.S. is at an all time high in waste goals, state legislation, collection programs, and growing public interest in sustainable waste management (building equity in stable markets), social reasons (human health and reducing waste).



BPI's Certification Program

Elements of “Certified Compostable”

ASTM

Labs

NSF

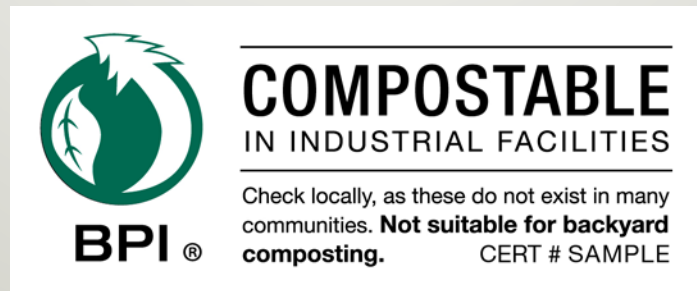
BPI



BPI Certification Program cont'd

Elements of “Certified Compostable” in more detail

- ❖ **ASTM** sets test methods and pass/fail specifications -- D6400 and D6868
- ❖ Applicants send products/materials to an accredited **independent lab**
- ❖ Test results, along with product/material samples and a full formulation disclosure are sent to BPI and **NSF International**, the program’s third-party technical reviewer.
- ❖ **BPI** sets rules of certification scheme, requiring disclosure of all constituents >0.1% (along with CAS#’s and Safety Data Sheets), prohibiting all carcinogens, reproductive toxins, and PBTs, etc., and then providing a seal of assurance for consistent labeling, managing a database of certified items (products.bpiworld.org)



Understanding the Label

Qualification: Certification seal from BPI

Clear claim: Compostable in a specific set of conditions, per ASTM standards.

Disclaimer: A large percentage of the population does not have access to curbside composting programs.

Disclaimer: Reinforcing that it was tested for industrial composting conditions, not home composting, which has lower temperatures.

Each company has a unique ID number where you can look up certification status (products.bpiworld.org)



Compostability Certification and ASTM Specifications

Context

- ❖ ASTM (American Society of the International Association for Testing and Materials), founded in 1898, develops voluntary consensus technical standards
- ❖ For compostable products: ASTM **D6400** and **D6868** are pass/fail, and have three basic components:
 1. Disintegration — After 12 weeks, no more than 10% of a product's original dry weight may remain after sieving on a 2.0-mm sieve.
 2. Biodegradation/Mineralization — In no more than 180 days, 90% of the organic carbon must be converted to CO₂, when compared to the positive control.
 3. No adverse impacts on ability of compost to support plant growth — Heavy metals in the product must be less than 50% of those prescribed for composts; germination rate and plant biomass of the sample composts shall be no less than 90% of the blank composts for 2 different plant species.



Redesigning Packaging: Is “Compostable” The Right Attribute?

Not everything that is technically compostable (ie, meets the ASTM specs) is eligible for BPI’s certification – WHY?

- ❖ If only part of the item is compostable, would need to be disassembled, consideration is needed for appropriate labeling, and likelihood that a consumer will actually do the sorting
- ❖ If the item is a redesign of something readily recyclable, consumers might still place it in the recycling bin (i.e., it’s not getting composted, and recyclers may worry about contamination)
- ❖ If the item doesn’t help divert desirable feedstocks like food scraps and yard trimmings, composters might not want it, and municipalities may suggest that consumers place it in the trash

<http://bpiworld.org/decide>





Compostable Products Decision Tree

The BPI certifies products to compost completely and safely in a commercial or municipal compost facility. But the larger question: is your product a good fit for composting? Take a few moments to walk through this decision tree analysis to determine if your product should, in fact, be compostable.

For more information about ASTM D6400/D6868, click here.

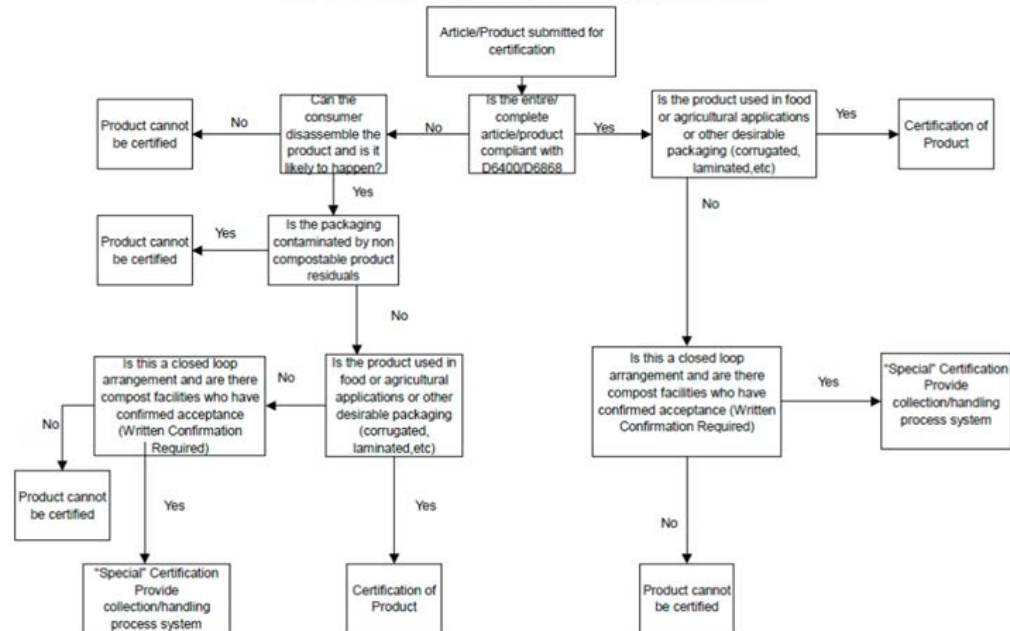
- 1 Compliant with ASTM D6400 / D6868?
- 2 Can it Be Disassembled?
- 3 Does It Contain Product Residuals?
- 4 Used for Food or Agriculture Applications?
- 5 Suitable for Municipal Collection?

Compliant with ASTM D6400 or D6868? *

Yes No

Next

BPI Decision Tree for Certification



Products that cannot be certified may qualify for USDA's BioPreferred Program



Tools & Resources from USCC

USCC's Compostable Products Task Force (CPTF) formed in 2011 to help address industry's concerns, needs and opportunities

Several key documents and resources developed

US Composting Council

Labeling Guidelines for Compostable Plastics Associated with Food Scraps or Yard Trimmings

The goal of these guidelines is to identify compostable plastics associated with food scraps or yard trimmings (e.g., bags, plates, cups, cutlery, trays, and take out or food packaging) which are certified as compostable in commercial or industrial composting facilities. These guidelines should allow the public and retail consumers, material haulers, and processors to distinguish compostable from non-compostable products for proper handling of items after use. The guidelines for labeling compostable plastic products are as follows:

- Products intended to be composted in a commercial composting facility shall meet ASTM D6400 "Standard Specification for Labeling of Plastics Designed to be Aerobically Composted in Municipal or Industrial Facilities" or ASTM D6868 "Standard Specification for Labeling of Plastics Designed to be Aerobically Composted in Municipal or Industrial Facilities."
- Labeling of products, packaging and sales materials or websites for products sold in the U.S. shall comply with pertinent US regulations and guidelines, including the Federal Trade Commission's "Guides for the Use of Environmental Marketing Claims" (Part 260) that clearly qualifies the products as suitable for composting only in a commercial composting facility.
- Each product should be labeled with the word "compostable" along with the qualifying language listed below that is as readily visible and readable by the average person as technically possible and not cost prohibitive. Each product should display the labeling language via printing, embossing, or compostable adhesive stickers and using, when possible, the color green or brown that contrasts with background product color for easy identification. Graphic elements are encouraged

to increase legibility of the word "compostable" and overall product distinction that may include text boxes, stripes, bands, or a green or brown tint of the product. The product shall be labeled with one of the following statements in order of descending preference as technically and economically possible:

- "Compostable where accepted in a commercial facility, check in your area," with a 3rd party certification logo for meeting ASTM D6400 or D6868;
- "Compostable where accepted in a commercial facility" with a 3rd party certification logo for meeting ASTM D6400 or D6868;
- "Commercially Compostable where accepted" with 3rd party certification logo for meeting ASTM D6400 or D6868 ("compostable" and logo highest priority for cutlery); or
- Cutlery or very small products should be labeled at a minimum with "Compostable" along with 3rd party certification logo (embossing or cutout enhances visibility).

4. A package containing a compostable plastic product should be labeled as follows (as applicable):

- This product is certified by (insert 3rd party name and logo to meet ASTM D6400 or ASTM D6868 for being compostable in a commercial composting program may not exist in your area. Check with your local municipality to determine if this product is accepted for composting or recycling. This product has not been certified for home composting.
- Plastic bags labeled as "compostable" should not have chasing arrows symbols (including the symbol used for the resin identification code), as removing chasing arrows on bags will not conflict with state laws and reduces confusion.

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About the USCC: The United States Composting Council (USCC) is a national organization that provides education, training, and information on composting and recycling. For more information visit www.usccouncil.org.

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COMPOSTABLE FOOD SERVICEWARE QUICK GUIDE

Compostable
Look for the logo signifying BPI (which certifies products meet ASTM D6400/D6868 Standards). If applicable, look for facility approvals such as Cedar Grove. Ensure that products labeled generically "compostable," and not carrying certification, comply with ASTM D6400/D6868 Standards.

Decomposable - Degradable - Biodegradable
These terms (and similar ones) are unqualified and generic. They do not address how a product will biodegrade in a specific environment (compost, soil, marine, etc.). These terms are commonly misused in the market to promote products which are made with traditional (and non-biodegradable) polymers such as PP, PS, PE, PET, etc. which may contain additives) claimed to promote biodegradation. See "Other Resources" for further information.

Biobased - Made from Plants - Plant Based
Being made from renewable resources (e.g. plants) does not mean that it is also compostable. USDA, for example, has developed the BioPreferred Program where products must meet specifications to show that renewable resources were used in part or in whole, to create a product. For compostability, look for the BPI or other applicable facility certification/labels (e.g. Cedar Grove), or ensure the product(s) is compliant with ASTM D6400/D6868 Standards.

Why?

- Using **Compostable** food serviceware will allow for greater food waste diversion.
- Using **Compostable** food serviceware can help municipalities in reaching zero waste goals.
- Putting the wrong products in the composting stream can result in increased processing and collection costs and contamination of our soil and water.

Please choose appropriate food serviceware to support food scraps diversion

- Check with your local composting facility or hauler to ensure which products they accept.
- Make sure to buy/use properly labeled food serviceware so that customers and employees can distinguish the non-compostable from **Compostable** food serviceware.

endorsed by the **US Composting Council**

Summer 2014

Navigating Compostable Plastics

This toolkit is designed to help determine if a compostable plastics program is appropriate for your organization and to guide in properly managing your compostable plastics.

Explore our toolkit by category

US Composting Council Research & Education Foundation

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LATEST NEWS! - News Head
Using Compostable Plastics to Reduce Your Service Container
WASTEBEATERS: How to Reduce Your Waste
Published October 6, 2013 10:00 am - 07:30 pm PST



Conclusions

Designing for Compostability

- ❖ Does the application make sense – Is it something composters will accept? Will it help divert organic wastes?
- ❖ Can the entire package or item be compostable? How will the claims be verified?
- ❖ **BPI** follows a third party certification process, utilizing the pass/fail criteria set by **ASTM**, where products are tested at **Independent labs**, with results analyzed by a **Technical Reviewer at NSF**; and the company being then permitted to use the **Certification logo** for clear identification and qualification, with lists of approved products online.

More Collaboration Needed

- ❖ BPI engaging other organizations to create unified message about compostability -- to avoid market/consumer confusion, and to help drive discussion about composting in positive direction
- ❖ Certification is starting point, but tools and resources still needed to build infrastructure for waste diversion, and systems that include compostable packaging
 - ❖ To this effect, in 2016 we launched Committees in 2016, updated our ByLaws to allow for composters and municipalities as affiliate members, and are working with State composting groups
 - ❖ Continuing our efforts with organic agriculture, and will be organizing an ad-hoc group to strategize next steps



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