



Compostable Food Serviceware

What to know before purchasing



Definitions

- **Compostable Plastic** - undergoes degradation by biological processes during composting to yield carbon dioxide, water, inorganic compounds and biomass at a rate consistent with other known compostable materials; leaves no visible, distinguishable or toxic residue¹
- **Bio-based Plastic (bio-plastics)** – made from a bio-based origin, such as corn, sugar, or starch as opposed to a fossil-based carbon source; not necessarily compostable; a product that has both plant-based and oil-based materials may be referred to as bio-based²
- **Thermoplastic (complex starch/composite plastic)** – derived from blending starch from plant-based products with other plastics (bio-based and/or oil-based)³ ; **some are compostable, some are not**

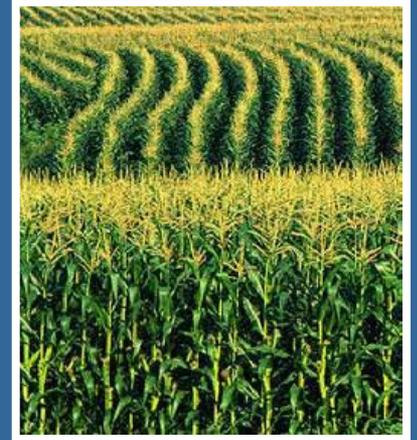
¹ ASTM Standard D6400, 2004, "Standard Specification for Compostable Plastics," ASTM International, West Conshohocken, PA, 2004, DOI: 10.1520/D6400-04, www.astm.org.

² Compostable Plastics 101: An Overview of Compostable Plastics, Sponsored by the California Organics Recycling Council

³ Compostable Plastics 101: An Overview of Compostable Plastics, Sponsored by the California Organics Recycling Council



Origins of Plastics



- Petroleum-based (oil and natural gas)
- Bio-based (plants)
- Composite or thermoplastic starch = petroleum-based + bio-based or bio-based + bio-based

* raw material from which plastic is made does not dictate compostability or recyclability

Types of Compostable Plastic Resins

- **PLA** – Polylactic Acid (brand name: **Ingeo**)
 - produced from corn
 - most prevalent compostable plastic
- **PHA** – Polyhydroxy Fatty Acid (brand name: **Mirel**)
 - produced from corn
 - also passes ASTM D7081 for marine degradability
- **Composite Plastic Starch** – bio-based starch blended with other plastics (bio-based or oil-based)
 - * some are not compostable, such as cutlery

Compostable Serviceware Materials

- **PLA** – Polylactic Acid (corn-based)
- **PHA** – Poloyhydroxy Fatty Acids (corn-based)
- **Bagasse** – by-product of sugar cane/sorghum juice extraction
- **Paper**
- **Wheat straw**
- **Bamboo**
- **Palm fiber**
- **Corn starch**
- **Soy, Tapioca, Potato starch**
(less common)



Sugar Cane

Compostable Serviceware Options

Paper

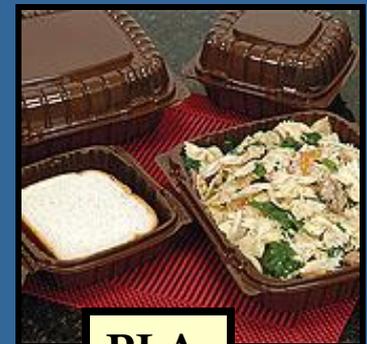


PLA

Bagasse



- **Cups:** hot, cold
- **Drink-related:** lids, straws, hot cup sleeves, cup carriers
- **Bowls:** various sizes, with lids (clear or fiber)
- **Plates:** various-sizes, compartmental
- **Trays:** various-sizes, compartmental
- **Cutlery:** forks, spoons, knives, sporks
- **Hinged containers (clamshell):** clear or fiber



PLA

Other Compostable Serviceware

Bags: various sizes,
used for compost collection



Deli containers: clear with lids,
various sizes



Oven containers: designed to heat
and serve, fiber-based (bagasse or paper)



Miscellaneous: serving gloves, films,
baking sheet liners, aprons



Cutlery

- needs to be BPI-certified
- avoid “plant starch”, “corn starch” and “composite starch” cutlery (combined with another resin to make stronger)
- most BPI-certified cutlery is PLA
- wood-based cutlery also available
- **Eco-Products & Bio-Centric** clarify on their websites



Plant-Starch Cutlery

Appearance

- logo and printing options available for compostable products
- molded and other paper/fiber products available in a variety of appearance and strength options
- products can be ordered with compostability labeling





Price Comparisons



- Mainstreaming of compostables helped make some price-competitive with traditional disposables
- Many compostable products now price competitive with paper counterparts (not with polystyrene)
- Many factors affect prices: distribution, quantity ordered, etc.

Performance:

- vast improvements in last few years
- manufacturers now verify uses and temperatures products withstand (oven-proof, microwave-proof, liquid appropriate, etc.)
- pay attention to product's purpose/function
- ask how heat, refrigeration, etc. will affect performance
- request and test samples
- improper storage will affect performance
 - some products don't perform well if stored in hot or moist environments

Purchasing

- Look for BPI logo:



<http://www.bpiworld.org/BPI-Public/Approved.html>

- companies offering BPI-certified products also offer a variety of “disposable” products similar in appearance and function
- Compostable products may be advertised under special brand, not company’s name

The Best Environmental Options

Durable and Reusable



Contact Information

Cyndra Dietz

- **Phone:** 303-444-6634, ext. 122
- **Email:** cld@ecocycle.org
- **Website:** www.ecocycle.org
- **Address:** Eco-Cycle

P.O. Box 19006

Boulder, CO 80308

<http://ecocycle.org/microplasticsincompost>