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 residue

- **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-based

- **Thermoplastic (complex starch/composite plastic)** – derived from blending starch from plant-based products with other plastics (bio-based and/or oil-based); some are compostable, some are not

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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](image)
![Corn](image)
Compostable Serviceware Options

- **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
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
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
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](http://ecocycle.org/microplasticsincompost)