**Single Use Food Service Containers and Packaging**

**Covered Products:**

Food service containers and packaging, including but not limited to plates, bowls, and hot and cold cups; sandwich or other types of food wrappers; food trays; and food take-out containers (including but not limited to containers with hinges, folding closures, or lids).

**Goal:**

The goal of this guidance document is to increase sustainable practices in the State of New York’s food service operations by encouraging the purchase and use of reusable food service containers and establishing minimum specifications for single-use food service containers and packaging. The specifications establish a hierarchy of environmentally beneficial attributes as follows: reusable; compostable in a commercial or municipal facility; easily recyclable; and made with a minimum percentage of post-consumer recycled content, sustainably harvested content, or other environmental attributes. An additional goal is that covered products purchased by affected entities, offered by preferred sources, or on State contracts will not contain perfluorinated chemicals (PFCs) or polystyrene.

**Background: Overview:**

Due to the tremendous amount of waste generated from disposable food containers and packaging and the cost of food, container and packaging disposal, cafeterias and other food service operations are beginning to convert to more environmentally friendly food service products. This transition is complicated by the wide range of product options available and the benefits and drawbacks associated with each. In order to significantly reduce the amount of waste generated from single-use containers, food service operators need to determine the types of food service products which best suit the needs of their customers while creating the least impact on the environment and public health.

**Reusable Containers**

Reusable food service containers such as ceramic plates and cups are almost always preferable to single-use containers, but Reuse maintains the integrity of the original product, and therefore retains the embedded energy and value of the materials used, resulting in significant environmental benefits. Life cycle analyses reveal that when materials extraction, fabrication, transport, distribution and disposal are all considered, reusable food service containers have significantly less environmental impacts than single-use food service ware, including energy use and air pollution. In most cases paper used to wrap food will be significantly contaminated and reuse will not be possible.

**Compostable Containers**

If when reusable containers are not an option, or the washing of reusable food service containers is not possible, and the use of disposable food service containers or
Packaging is unavoidable; compostable materials containers that do not contain perfluorinated chemicals should be used. Compostable materials are the best choice for single-use food service products because composting is the easiest way for food service operators to divert left over food away from landfills – users don’t need to sort items into different bins, and food left on ware is not an issue. For this reason, the use of compostable ware can lead to greater food waste diversion than recyclable ware. According to the U.S. Environmental Protection Agency, food waste is the second largest category of municipal solid waste sent to landfills in the United States, accounting for approximately 18% of the waste stream. More than 30 million tons of food waste are sent to landfills in the U.S. each year.

Diverting food waste from landfills conserves limited landfill space and helps to reduce greenhouse gas emissions. Food scraps that decompose in landfills in the absence of air break down into methane, a potent greenhouse gas. Composting food waste avoids the production of methane and produces a natural soil amendment, which can create healthier soil and reduce the need for synthetic fertilizers.

Where compostable single-use containers or packaging are selected, a mechanism for composting, or an alternative treatment technology such as anaerobic digestion, should be in use in order to reap the environmental benefits and cost savings associated with the use of compostable products. As established in the EO 4 specification for Solid Waste Recycling and Management Services, affected entities are encouraged to seek out and contract with waste management vendors who offer composting services or other organics recycling technologies acceptable to the Department of Environmental Conservation, and will accept food and compostable food service containers and packaging (see https://www.ogs.ny.gov/purchase/snt/awardnotes/7901322760can.HTM).

Recyclable Containers

If reusable and compostable products are not an option, or there is no mechanism in place to compost or alternatively treat compostable products, containers that can be easily recycled should be selected. Recycling plastic cups, takeout containers and other containers can divert them from landfills and trash incinerators and make them available to be converted into other products. Manufacturing products from recyclable material often uses less energy and water than making them from virgin (i.e., nonrecycled) material.

Food service operators should determine what types of products are accepted by their local recyclers before purchasing potentially recyclable products. Easily recyclable products may include, for example, paper cups that are uncoated or coated with PLA bioplastic or wax. Plastic containers are usually made from a specific type of plastic resin and some plastic resins are more readily recyclable than others. Easily recyclable plastic products may include cold cups and lids made from PET (#1) or polypropylene (#5). It is important to note that recyclers may not accept recyclable food service containers that are heavily soiled with food. In addition, paper food service containers lined with polyethylene plastic are generally not considered recyclable.
Food service containers made with polystyrene (including expanded polystyrene or "Styrofoam") (#6) should be avoided. The National Toxicology Program concluded in 2011 that styrene is “reasonably anticipated to be a human carcinogen” (Report on Carcinogens, Twelfth Edition). A primary use of styrene is in the manufacture of polystyrene, which is used extensively in the manufacture of plastic packaging and disposable food containers. The National Academy of Sciences states that: "[S]ources of environmental exposure includ[e] food (from migration of styrene from polymer packaging materials)” (Review of the Styrene Assessment in the National Toxicology Program 12th Report on Carcinogens, 2014). Polystyrene is very slow to degrade, and Styrofoam waste, in particular, is increasingly abundant in litter, particularly along shores and waterways and in the ocean. There are currently no facilities that recycle Styrofoam in New York State.

Reycled and Sustainably Harvested Content

In addition to the considerations discussed above, a number of compostable and recyclable food service containers and packages have recycled and sustainably harvested content, making them the best choices within their category. Where the use of disposable containers or packaging is unavoidable, and neither compostable nor recyclable containers or packaging are cost competitive or meet form, function and utility requirements, affected entities are encouraged to purchase products with one or both of these attributes. For example:

- A number of paper products (notably folded take-out containers, coffee cups, and paper plates) are made with recycled content, including post-consumer recycled content. Those with the highest level of post-consumer recycled content are best.
- Some cold cups, clear bowls and takeout containers are made with post-consumer recycled-content PET plastic.
- Some molded fiber and paper products are certified by the Forest Stewardship Council (FSC) or Sustainable Forestry Initiative (SFI), which means they are made with sustainably harvested bio-based materials.

Perfluorinated Chemicals in Food Service Containers and Packaging

Single-use food service containers and packaging can contain perfluorinated chemicals (PFCs) (see definition below). PFCs are widely used to make everyday products more resistant to stains, grease and water. For this reason, they have been intentionally added to many molded fiber plates, bowls and clamshells, as well as some food wrappers and take-out containers, to make them less prone to leaking and sticking to food. Avoiding the use of PFCs in food service containers and packaging can help to reduce human exposure and potential sources of PFCs in the environment.

Research into the human health risks associated with PFCs is ongoing. Most of the science on long-term human exposure focuses on two types of PFCs – perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS) – that were used for decades to manufacture hundreds of different products before studies indicated that exposure to them over certain levels may result in adverse health effects.
In 2003, EPA nominated thirteen PFCs closely related to PFOA and PFOS as a class for study by the National Toxicology Program (NTP) due to potential similarities among these PFCs in chemical properties and toxicity. According to NTP, eight of those PFCs similar to PFOA and PFOS, but with different numbers of carbons, are currently being studied due to concerns based on widespread exposure to humans, persistence in the environment, observed toxicity of certain PFCs in animals (such as PFOA and PFOS), and “insufficient information to properly assess human health risk across the entire structural class.” The National Institutes of Health’s recommended reduction strategy is to avoid purchasing products containing perfluorinated chemicals “as suitable alternatives become available.” For more information see https://nems.nih.gov/soc/Pages/Perfluorinated-Chemicals-(PFCs).aspx and https://www.niehs.nih.gov/health/materials/perflourinated_chemicals_508.pdf

Due to the tremendous amount of waste being generated from disposable food containers and the costs for its disposal, cafeterias and food service operations are beginning to convert to the more environmentally-friendly food service containers. This transition has become more complicated and complex than expected due to the various forms of food service container options that are available.

In order to significantly reduce the amount of waste generated from these materials, food service operations need to determine what food service best suits the needs of their customers while creating the least environmental impact.

**Covered Products:**

Single use food service containers (plates, bowls, hot and cold cups with lids, food trays and hinged containers).

**Definitions:**

**Bagasse**

A fibrous, pulpy material that remains after sugar is extracted from sugarcane. It is often molded into FSW products such as compostable plates, bowls and takeout containers. Because it can insulate food, it can replace Styrofoam. Unfortunately, many bagasse food service products have been found to contain PFCs.

**Bio-based Materials**

Plant-derived materials that are commonly used to make single-use food service containers and wrappers. These included (but are not limited to):

- Wood cellulose, used to make conventional paper plates, bowls and cups, including both recycled as well as virgin paper;
- Fiber crops such as hemp and flax
- Bamboo, silver grass (i.e., miscanthus) and other grasses
- Agricultural waste such as bagasse (sugarcane waste) (bagasse) as well as wheat and rice straw
• Materials derived from agricultural products (such as corn starch), that are turned into polylactic acid (PLA), a compostable clear plastic material that is used to make cold cups and other food service ware, and to coat paper and other fiber-based products.

Biodegradable

Degradable in which the degradation results from the action of naturally-occurring microorganisms such as bacteria, fungi, and algae (no set time scale provided).

Bioplastic

Plastics derived from renewable bio-based sources materials (most often corn that is manufactured into PLA), such as vegetable oil, corn starch, potato starch, or pea starch rather than that can replace traditional plastics derived from petroleum.

Compostable

All the materials in a product or package are capable of undergoing biological decomposition in an appropriate (e.g., commercial or municipal) compost facility as part of an available program in a safe and timely manner (no more than 180 days), such that the material is not visually distinguishable and breaks down into carbon dioxide, water, inorganic compounds, and biomass suitable for use as a soil amendment (e.g., compost, soil-conditioning material, mulch), leaving no toxic residue (within a period of 180 days). To be considered a compostable product under this specification, a product must be certified by the Biodegradable Products Institute (BPI) or an equivalent certifier or be on the Cedar Grove List of Approved Products, and must not contain PFCs.

Perfluorinated Chemical (PFC)

Any perfluorinated or polyfluorinated chemical, including but not limited to long- and short-chain fluorinated alkyl compounds, fluorinated sulfonate compounds, fluorinated polyethers, and fluorinated polymers.

Molded Fiber

Bagasse, wheat straw, recycled paper and fibrous materials that are put into a pulping device and formed into various types of food service products such as plates, bowls and takeout containers. Many molded fiber products are certified as compostable by the Biodegradable Products Institute or appear on other lists of approved compostable food service products. Unfortunately, many molded fiber food service products have been found to contain PFCs.

Polylactic Acid (PLA)

A clear bioplastic that resembles common petrochemical-based plastics such as polyethylene and polypropylene.
**Renewable**

Derived from renewable agricultural and forestry resources.

**Sugar cane (biogasse)**

Made of the pulpy material that remains after the extraction of sugar from sugarcane. Suitable replacement for Styrofoam.

**Recyclable Material**

Recyclable material is defined as a product that can be used as an ingredient in a manufacturing process to create another product.

**Standard Setting and Certifying Programs:**

**ASTM International** (American Society for Testing Materials) – is one of the largest voluntary standards development organizations in the world, ASTM is a trusted source for technical standards for materials, products, systems, and services known for their high technical quality and market relevancy. ASTM International standards play an important role in the information infrastructure that guides design, manufacturing and trade in the global economy.


This specification establishes the requirements for labeling of materials and products, including packaging and food service products made from biobased materials and bioplastics, as "compostable in municipal and industrial composting facilities."

The properties in this specification are those required to determine if plastics and products made from plastics will compost 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 compost resulting from the composting process.

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.

**ASTM D6868-03** – Standard Specification for Biodegradable Plastics Used as Coatings on Paper and Other Compostable Substrates.
This specification establishes the requirements for labeling of materials and products (including packaging), wherein a biodegradable plastic film or coating is attached (either through lamination or extrusion directly onto the paper) to compostable substrates and the entire product or package is designed to be composted in municipal and industrial aerobic composting facilities.

The properties in this specification are those required to determine if products using plastic films or sheets will compost satisfactorily, including biodegrading at a rate comparable to known compostable materials. It does not, however, specify the contents of the product or their performance with regards to compostability or biodegradability. In order to compost satisfactorily, the product must demonstrate each of the three characteristics as follows: (1) proper disintegration during composting; (2) adequate level of inherent biodegradation; and (3) no adverse impacts on the value or utility of composts to support plant growth.

This specification covers biodegradable plastics and products (including packaging), where plastic film or sheet is attached (either through lamination or extrusion directly onto the paper) to substrates and the entire product or package is designated to be composted in municipal and industrial aerobic composting facilities.

This specification is intended to establish the requirements for labeling of materials and products, including packaging, using coatings of biodegradable plastics, as “compostable in municipal and industrial composting facilities.”

The properties in this specification are those required to determine if products (including packaging) using plastic films or sheets will compost 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 compost resulting from the composting process.

The coating standard does not describe contents or their performance with regard to compostability or biodegradability.

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.

Biodegradable Products Institute (BPI) is a professional membership association of key individuals and groups from government, industry and academia, which promotes the use of and certifies a wide array of compostable products, including, but not limited to food service ware recycling of biodegradable polymeric materials (via composting). The BPI will certify any materials and products that which can be demonstrated (via scientifically proven techniques) to be that their products are completely biodegradable in approved municipal or commercial aerobic composting facilities.
Specifications:

1. Minimize the Purchase of Single-Use Food Containers

Where such products are cost competitive and meet form, function and utility requirements, affected entities shall, to the maximum extent practicable, purchase and utilize reusable food service containers, including but not limited to ceramic plates, bowls and cups.

2. Purchase Compostable Single-Use Food Service Containers and Wrappers

If the purchase of single-use food service containers or packaging cannot be avoided, affected entities shall, to the maximum extent practicable, purchase single-use food containers and packaging that meet one of the following attributes. Where such products are cost competitive, meet form, function and utility requirements, and will be managed in a municipal or commercial composting program facility, all single use food containers excluding hot and cold cups, hot containers and lids (hot and cold), shall, to the maximum extent practicable, be compostable as defined under the ASTM Standard Specification for Compostable Plastics (D6400-04).

- Are certified by the Biodegradable Products Institute (BPI) per ASTM D6400 or D6868 and labeled “Compostable” (BPI-certified products can be accessed at http://products.bpiworld.org/companies/category/foodservice); or
- Appear on the list of Commercially Accepted Items developed by the Cedar Grove composting facility in Washington State (this list can be accessed at http://cedar-grove.com/compostable/accepted-items).

When coatings are used, they shall be compostable as defined under the ASTM Standard Specification for Compostable Plastics Used as Coatings on Paper and Other Compostable Substrates (D6868-03) or, if such standard is not applicable, be biodegradable.

Affected entities shall not purchase plates, bowls, cups, clamshells (or other food take-out containers) made of molded fiber, or wrappers or take-out containers made of paper or other types of fiber, unless the manufacturer provides a formal declaration stating that no perfluorinated chemicals (as defined in this specification) were intentionally added to the product during its manufacture.

NOTE: If a biobased container is manufactured with a polyethylene coated material, it is not compostable, and therefore does not meet the intent of this specification. If such products are purchased, each container shall be marked to indicate it is not compostable or recyclable.

Affected entities are encouraged to purchase compostable single use food containers that are certified by the Biodegradable Products Institute (BPI).

3. Purchase Recyclable Food Service Containers
Where municipal or commercial composting facilities, or compostable food service products, are not available, affected entities shall, to the maximum extent practicable, purchase single-use food containers and packaging that meet one of the following attributes, where such products are cost competitive, meet form, function and utility requirements:
The hot and cold cups, hot containers and lids (hot and cold) shall meet one of the following:

- Be made of one of the following types of easily recyclable plastic materials and labeled with a visually legible Resin Identify Code (i.e., chasing arrow and number):
  - PET plastic (#1)
  - Polypropylene plastic (#5); or

- Be made of paper lined with PLA

Affected entities shall not purchase food service containers or packaging made of polystyrene, (including expanded polystyrene or “Styrofoam”).

- Shall be manufactured from a bio-based material that is compostable and biodegradable; or

4. **Purchase Food Service Containers with Recycled or Sustainably Harvested Content and Other Environmental Attributes**

Affected entities are encouraged to purchase food service containers and packaging with one or more of the following types of recycled or sustainably harvested content or environmental attributes:

- Shall be manufactured from a polymeric material (plastics/resins) that contain a minimum of Paper with 31.0% or more post-consumer recycled content, which can be found, for example, in some brands of folded take-out containers, coffee cups and paper plates; unless wherein recycled content is not allowed by the United States Food and Drug Administration (USFDA); or

- PET plastic with 20% or more post-consumer recycled content, which can be found, for example, in some brands of clear cold cups, lids and takeout containers; or

- Materials certified by the Forest Stewardship Council (FSC) or Sustainable Forestry Initiative (SFI) as sustainably harvested; or

- Shall be recyclable through a local municipal recycling program or through a commercial establishment that is willing to accept the material for recycling; and shall be labeled with a visually legible Resin Identification Code.
NOTE: If a biobased container is manufactured with a polyethylene coated material, it is not compostable, and therefore does not meet the intent of this specification. However, if purchased, each container shall be marked to indicate it is not compostable, biodegradable, or recyclable.

All other products shall be:

- Compostable and biodegradable, use of Active Organic Enzyme (AOE) (solvents) for biodegradability is not acceptable.
- Products made from bioplastic material shall meet the requirements of ASTM D6400-04, the standard specification for compostable plastics and labeled as Compostable and preferably be certified by the Biodegradable Products Institute (BPI).
- Products made with bioplastic coating shall meet the requirements of ASTM D6868-03 standard specification for biodegradable plastics used as coatings on paper and other compostable substrates, and shall be with a visually readable label as “Biodegradable” and/or “Compostable” and preferably be certified by the Biodegradable Products Institute (BPI).

- All paper products shall be manufactured entirely with chlorine-free processing, meaning that no chlorine or chlorine compounds were used in the manufacture of the any paper products; or

- All inks for printing and graphics shall be vegetable-based and approved for use by U.S. Food and Drug Administration, where required.

Packaging:

Packaging shall comply with Environmental Conservation Law section 37-0205. Packaging shall not contain inks, dyes, pigments, adhesives, stabilizers, or any other additives to which any lead, cadmium, mercury or hexavalent chromium is intentionally added or contain incidental concentrations of lead, cadmium, mercury or hexavalent chromium which together are greater than 100 parts per million by weight (0.01%). New York State encourages affected entities to adopt the following:

- The use of bulk packaging.
- The use of reusable packaging.
- The use of innovative packaging that reduces the weight of packaging, reduces packaging waste, or utilizes packaging that is a component of the product.
- That all packaging remain the property of the supplier and not become the property of the affected state entity under any circumstance or condition. The vendor shall certify that the packaging material will be reused, recycled, or composted, and managed in compliance with applicable local, state, and federal laws.
- Packaging that maximizes recycled content and/or meets or exceeds the minimum post-consumer content level for packaging in the U.S. Environmental
Protection Agency Comprehensive Procurement Guidelines.

- Packaging that is recyclable or compostable.

All packaging materials shall be made from reusable or recycled materials. All paper-based packaging shall contain 30 percent postconsumer fiber by fiber weight. No foil or mylar packaging or excessive inner packing shall be used.

In accordance with Environmental Conservation Law section 37-0205, packaging shall not contain inks, dyes, pigments, adhesives, stabilizers, or any other additives which any lead, cadmium, mercury, or hexavalent chromium has been included as an element during manufacture or distribution in such a way that the sum of the concentrations levels of such lead, cadmium, mercury, or hexavalent chromium exceed the following concentration level: 100 parts per million by weight (0.01%).