Product Sustainability Standard

Packaging

Version 1.0: 2024

Reason for Standard

Food packaging of all kinds raises numerous environmental and health issues, but also provides important benefits for the preservation, transport, and safety of food products. Plastic packaging, however, presents a unique set of challenges as its versatility is unparalleled but so too are the threats it poses to our ecosystems and bodies.[i,ii]

Minimizing plastic use across all food packaging must be a priority, but especially in single-use applications. Many single-use plastics cannot be recycled, and the infrastructure for recycling cannot keep up with or afford to process the large quantities of waste generated.[iii] Waste haulers and processors must also deal with incorrectly disposed items that can contaminate entire loads of otherwise recyclable plastics.[iv] As a result, the United States only recycles about 9% of plastic waste; the remainder goes to landfills across the United States or exported to other nations, like China, where it goes to landfill or is incinerated.[v] Seattle, however, does recycle more than the national average as a result of regulations, enforcement, and local infrastructure to process recyclables.[vi]

Evolving research indicates the chemicals used to make plastics are harmful to human health and may have long-term consequences yet fully realized.[vii] For example, phthalates used to make soft and pliable plastics (like those given to teething toddlers), are endocrine disruptors, which means they can mimic hormones and cause developmental and reproductive damage.[viii]

Plastics also pose a risk to wildlife, the incidents of which are becoming more widespread and covered by the media.[ix,x] Many marine animals, such as seabirds and whales, have been found deceased with large quantities of plastics (including microplastics) in their stomachs. Straws and soda can rings get caught on turtles. Animals get their heads caught in plastic jugs or containers, choke on plastics bags and more.[xi] Plastics also do not break down in the environment—they simply break apart into smaller pieces, known as microplastics. These microplastics contain toxins and are consumed by animals and make their way up the food chain eventually to humans.[xii,xiii]

Eliminating plastic packaging faces multifaceted challenges, including industry opposition (about 8% of the world's oil production goes to making plastics and powering the manufacturing to make them[xiv]) and finding suitable alternatives that do not have their own set of drawbacks associated with production, use, and disposal. For example, compostable molded fiber containers made from plant-based materials often contain polyfluoroalkyl substances (PFAS) to make them oil and water resistant. PFAS are non-stick "forever" chemicals that pose serious health and environmental threats.[xv]

Weighing all of these factors, PCC's packaging standard aims to inspire our industry partners and producers to seek the most sustainable and least toxic packaging options for their products, while also challenging ourselves to reduce waste and elevate sustainable packaging alternatives.

Scope

This standard applies to the packaging used to sell goods in PCC stores, including PCC-made deli and bakery items, Private Label items, and PCC-provided produce and bulk bags offered to customers.

Standard

1. General Requirements and Preferences

1.1. Vendors are encouraged to minimize the amount of product packaging material.

1.2. Vendors are encouraged to use materials that are compostable, made from recycled content, reusable, and/or easily recycled by the consumer after use.

1.3. Vendors must review and, to the best of their abilities, adhere to the packaging guidelines set forth in section 3 ("Guidelines for Packaging Materials") of this standard.

1.4. PCC must not sell flat, unenhanced, plastic bottled water in sizes below 1 gallon.

2. Packaging Requirements for Private Label, PCC-Made, and PCC-Provided Products

2.1. PCC must seek to minimize the amount of packaging material used for all Private Label, PCC-made, and PCC-provided products.

2.2. For Private Label products PCC must prioritize packaging materials that are compostable, made from recycled content, reusable, and/or easily recycled by the consumer after use.

2.3. Packaging decisions for PCC Private Label, PCC-made, and PCC-provided products must adhere to packaging guidelines set forth in section 3 ("Guidelines for Packaging Materials) of this standard.

2.4. All PCC deli packaging made from petroleum-based plastic must be eliminated and replaced with sustainable alternatives (e.g., compostable) by the end of 2022, unless commercially unavailable.

2.5. PCC must only provide compostable, reusable, and/or 100% post-consumer recycled content produce bags, unless commercially unavailable.

2.6. All meat and seafood trays packaged by PCC must be compostable, unless commercially unavailable.

2.7. Molded fiber and other non-polylactic acid (PLA) compostable packaging and food contact materials used in PCC Private Label products or purchased by PCC for use in stores or Central Kitchen must not contain more than 100 ppm total fluorine and/or intentionally added fluorine (from PFAS), unless commercially unavailable.

3. Guidelines for Packaging Materials

3.1. PCC encourages vendors to choose the following packaging options, identified as having the lower environmental impact and health risks.

3.1.1. Paper that is unbleached and does not have a plastic coating or layered with materials that render the material unsuitable for composting and/or recycling.

3.1.1.1. Paper that is verified by a third-party as sourced from sustainably managed and harvested forests is preferred or encouraged, such as Forest Stewardship Council (FSC) certified.

3.1.1.2. Vendors are strongly encouraged not to use paper treated with PFAS substances to make them water or oil repellant.

3.1.2. PLA (polylactic acid) plastic that can be processed in commercial composting facilities.

3.2. Vendors are encouraged to minimize their use of the following materials, but if essential to packaging, should follow the best practices outlined in Appendix-Section A.

3.2.1. High-density polyethylene (HDPE #2) plastic.

3.2.2. Low-density polyethylene (LDPE #4) plastic.

3.2.3. Polypropylene (PP #5) plastic.

3.2.4. Polyethylene terephthalate (PETE #1) plastic.

3.2.5. Silicone.

3.3. Vendors are highly discouraged from using the following materials in the packaging of their products. PCC will give preference to products that do not use these materials. See Appendix-Section B for rational and details.

3.3.1. #3 PVC (polyvinyl chloride) plastic.

3.3.2. #6 Polystyrene plastic.

3.3.3. #7 polycarbonate and other petroleum-based plastics marked as #7, with the exception of PLA.

4. Packaging Material Contaminant Restrictions and Preferences

4.1. PCC encourages vendors to reduce or avoid the following contaminants in food packaging. See Appendix-Section C for details on each substance.

4.1.1. Phthalates.

4.1.2. Perfluoroalkyl and polyfluoroalkyl substances (PFAS) a.k.a. perfluorinated compounds (PFCs).

4.1.3. Bisphenols (e.g., BPA, BPS, BPF).

4.1.4. Lead or other heavy metals.

Standard-Specific Glossary

Biodegradation is a chemical process during which microorganisms that are available in the environment convert materials into natural substances such as water, carbon dioxide, and compost (artificial additives are not needed). The process of biodegradation depends on the surrounding environmental conditions (e.g., location or temperature), on the material and on the application. Biodegradation can also refer to the process of a material breaking down in the environment into small pieces, which might make it appear the material has fully disappeared and is no longer a concern. Many materials can be biodegradable, but that does not always guarantee they are safe or nontoxic to the environment in which they degrade.

Bioplastics are plastic materials made from renewable resources, like plants and trees, and can exhibit similar properties to many types of petroleum-based plastics. Bioplastics are beneficial because they do not come from petroleum and can be commercially composted. However, there are still concerns surrounding carbon footprint of production and environmental impact if they are not disposed of properly.[xvi,xvii]

Bisphenols are a group of chemicals that have been used to manufacture plastics and epoxy resins since the 1960s and have gained significant attention because of the health risks they pose as endocrine disrupting substances.[xviii] The most well-known of the group is bisphenol-A (BPA), which is used in the liners of canned foods and on receipt tape. Many companies have shifted away from BPA after consumer pressure, however, many simply use another form of bisphenol, like BPS or BPF, which can still have the same toxicity concerns associated with them.

Compostable is a term applied to materials or packaging that break down into inert chemicals or organic material and are recirculated into the earth or environment. For example, produce is compostable in a backyard compost pile because it breaks down and degrades into organic material easily. Other materials, like bioplastics, are commercially compostable, meaning they can be broken down through specialized systems into organic material and cycled back into the ground as compost. In Washington State, legislation was passed to provide clear and uniform standards around marketing claims of compostability or biodegradability on consumer products, requiring that products labelled as compostable must be comprised only of fiber-based substrate or they must meet specific compostability standards set by the American Society of Testing and Materials (ASTM).[xix]

Endocrine Disrupting Chemicals (EDCs) are substances that interfere with the body's endocrine system, either by mimicking or blocking hormones, or by interrupting biological processes involving hormones. The endocrine system is an information-signaling group of glands throughout the body that secretes hormones to regulate growth, reproductive function, sexual development, mood, metabolism, and sleep. It's comprised of the thyroid, parathyroid, adrenal, and pituitary glands, as well as the pancreas, ovaries, and testicles. This complex system controls a huge range of biological functions and is imperative to normal development. EDCs, which are usually human-made chemicals, are associated with a plethora of health risks including cancer, birth defects, obesity, diabetes, early puberty, neurological development delays, and immune system problems. Examples of EDCs include pesticides (DDT and atrazine), bisphenols and phthalates used in plastic production, per- and polyfluoroalkyl substances (PFAS, a class of oil and water repellant chemicals), and triclosan (an artificial antimicrobial).

Heavy metals are naturally occurring elements found in the earth's crust and are characterized chemically by a high atomic weight and a density at least five times greater than that of water. Heavy metals are widely used in various industrial, agricultural, and domestic applications, such as the production of clothing dyes, pesticides, electronics, batteries, and more. This extraction, processing, use, and disposal has released large quantities of heavy metals in more reactive forms into the environment. Once released from the ground, they are persistent pollutants that can accumulate food, water, air, and dust. Arsenic, lead, chromium, cadmium, and mercury are of particular concern because they are highly toxic to humans.

Lead is a naturally occurring heavy metal that has become more abundant in unbound form due to human activity, like smelting and leaded gasoline (although banned in 1996 in the US, it was responsible for releasing significant quantities into the air). Lead can accumulate in the blood stream and is toxic to humans, especially to children before they have a fully developed blood-brain barrier. Exposure to lead can cause anemia, kidney damage, brain damage, and result in neurological, behavioral, and developmental problems.

Microplastics are fragments of any type of plastic less than 5 millimeters in length, according to the US National Oceanic and Atmospheric Administration (NOAA). When larger plastic items are left as waste in the environment, they break down into microplastics over time. These tiny particles of plastic have become a major source of pollution and are extremely worrisome because they are sponges for industrial toxic chemicals and growing evidence shows how they accumulate up the food chain.

Petroleum-based plastics are those made from feedstocks of fossil fuels, commonly petroleum (crude oil), but also natural gas. Invented in the early 1900s, they're widely used in almost every industry today and have become a major public health and environmental threat. Plastic pollution itself is harmful to ecosystems and wildlife, accumulating on land and in water, and they're a source of exposure to toxic chemicals to humans and animals.

PFAS, or per and polyfluoroalkyl substances, are chemicals used for their water and oil repellency; they are persistent in the environment and do not breakdown into benign substances over time. There are thousands of substances within the PFAS family, the most well-known one goes under the brand name of Teflon, used to coat non-stick cookware. PFAS can be found in food packaging, cookware, textiles and clothing, cosmetics, camping gear, fire retardants, and more. There is strong evidence that exposure to PFAS reduces immune system function, causes birth defects, damages internal organs, and increases the risk of certain cancers, such as prostate and bladder cancer.[xx]

Phthalates are a group of chemicals called plasticizers, which are added to plastics to increase their flexibility, transparency, and durability; most often, they're used to make PVC plastics softer. Phthalates, like BPA, are known to disrupt the endocrine system and exposure may increase the risk of certain cancers and cause reproductive and developmental harm.[xxi]

Polylactic Acid (PLA) is a bioplastic used to replace petroleum-based plastics. It is commonly made from corn through a high-pressure and heat process and can be commercially composted. Since it doesn't fall into any of the other number categories used to identify most petroleum-based plastics, PLA is often marked as resin #7, which is a catch-all designation for other plastics that don't fit under the six other resin numbers.

Silicone is a general term for a class of polymer materials with plastic-like properties made from silica, a material found readily in sand all over the earth, processed into substances called siloxanes. Silicone is durable, heat resistant, and flexible, making it a great alternative to plastic for food storage, cooking utensils, and bakeware. Silicone products don't biodegrade or decompose, which means they do not break into microplastics and contaminate the environment like plastic. While food-grade silicone is generally considered safe and inert, there is some concern that siloxanes, the building blocks of silicone, can cause reproductive harm and could under certain circumstances migrate into food from products.[xxii] The studies on this phenomenon have mixed results and one proposed theory is that improperly produced silicone could have residual siloxanes on the final product, which then easily migrate into foods during use.

Appendix

Section A: Packaging to use with Caution

Packaging materials in this category have performance benefits in certain instances and may be the only reasonable option for a product, however, PCC recommends exercising discretion as they have some associated health and toxicity concerns. The following materials are listed in order from generally preferable to least desirable to use, depending upon the product or food:

1. #2 HDPE plastic (high-density polyethylene) for storage of food or liquid if no other suitable material exists.
2. #4 LDPE plastic (low-density polyethylene) is a second-best option for food or liquid storage.
3. #5 PP plastic (polypropylene).
4. #1 PETE plastic (polyethylene terephthalate).
5. Silicone.

When using any of the four materials listed above, it is recommended to follow best practices for each, such as:

- For all plastics, it is recommended that foods and liquids are completely cool before being packaged. This is because many plastics can leach toxic chemicals and heat can be a catalyst.
- Store plastics away from heat or light that will accelerate breakdown and migration of plasticizers into contents, especially with foods containing fats or oils.
- Do not store or heat food or liquids in #5 PP (polypropylene) plastic for long periods of time.
- #5 plastic is marked as “microwavable/dishwasher safe,” but this means only that the plastic will not warp when heated. It does not imply these are healthy practices and it is not recommended to heat any plastic containers.
- #1 PETE (polyethylene terephthalate) plastic should be used only for single-use items because cleaning detergents, varying pH levels, and heat can increase chemical leaching from PETE.
- Silicone is a safer alternative to plastic for food storage but may leach chemicals when exposed to extremely high temperatures. It does not degrade like plastic and can be cleaned and reused more safely than plastic.

Section B: Packaging to Avoid

PCC discourages using the following materials because they may be toxic to humans and the environment. See below for details on the concerns associated with each material:

#3 PVC (polyvinyl chloride) plastic: PVC is one of the most toxic plastics and is made with phthalates, most commonly, DEHP. Phthalates are known to disrupt the endocrine system and exposure may increase the risk of certain cancers and cause reproductive and developmental harm.

#6 Polystyrene plastic: Polystyrene is commonly used to make expanded polystyrene (EPS), also known as Styrofoam, a material often used for takeout containers and single-use hot beverage cups. It contains the chemical styrene, which has been linked to nervous system problems, hearing loss, impaired memory and concentration, and is classified by the International Agency for Research on Cancer (IARC) as a probable human carcinogen.[xxiv] Some evidence has shown styrene, along with other toxic chemicals, can leach out of polystyrene food packaging materials into food, a process that increases with temperature.[xxv] In 2009, the city of Seattle banned EPS for disposal food packaging and service ware.

#7 Other plastic: This is a catch-all designation for combinations of resins and other plastics that do not fall into the other categories. They may or may not contain BPA and BPS. One particular #7 plastic, polycarbonate is made from repeating units of BPA, a substance known to leach from plastic during use, and is very susceptible to scratching, which can increase how much BPA leaches from it.

Section C: Packaging Contaminants

The following substances have serious human health concerns and can be found in packaging either because they are unintentional contaminants, or they are used in the manufacturing of a specific type of plastic. PCC recommends that packaging not contain these substances.

Phthalates: These are a class of chemicals used to make plastics soft and pliable. They have been identified as reproductive and developmental toxicants.

Perfluoroalkyl and polyfluoroalkyl substances (PFAS) or perfluorinated compounds (PFCs): PFAS are used to make packaging oil and water resistant and are commonly used in molded fiber bowls or paperboard packaging. Studies have shown they can increase the risk of certain cancers, weaken the immune system, and cause reproductive and developmental damage or birth defects. A Washington State law passed in 2018 will prohibit the manufacture, sale or distribution of PFAS in food packaging if added intentionally in any amount. This prohibition takes effect January 1, 2021, as long as the Department of Ecology identifies a safer alternative.

Bisphenols (e.g., BPA or BPS): These are a class of chemicals used in manufacturing plastics and resins, which can negatively impact the endocrine system. The current known forms of bisphenols include: A, AP, AF, B, BP, C, C2, E, F, G, M, S, P, PH, TMC, and Z. PCC prohibited bisphenol-A in store receipt tapes in 2010 and then expanded that prohibition to all other bisphenols (BPS, P, PF, BP, PE, PB and DP) in 2014.

Heavy metals: Food packaging can be contaminated with heavy metals like lead, antimony, or arsenic that are used in paints, inks, or in processing of raw materials and production of packaging material. Heavy metals can accumulate in the body and are harmful even at low levels, especially to babies and children.

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