PRACTICE Greenhealth

Suggested Environmental Considerations for Disposable Food Ware

The suggested environmental disclosure questions may be used in your RFI/RFP to help inform your purchasing decisions. These questions can be applied to cutlery; plates, bowls and cups (for hot and cold applications); take-out packaging (such as clamshells, boxes or containers with separate lids); and ancillary items such as lids, and straws). These questions would not pertain to other food service items such as paper napkins and paper towels. For questions or comments, email GSC@practicegreenhealth.org.

#	Topic	Environmental Questions	Preferred Answer	Definition	Rationale
1	Chemicals	Is this product free of fluorine or fluorinated compounds (such as PFOS/PFOA chemicals used as grease barriers)? (Yes/No)	Yes	Perfluorinated compounds (PFCs) are family of compounds (including Perfluorooctane sulfate (PFOS), Polytetrafluorethylene (PTFE) and PFOA). PFOS is used in paper production to provide grease, oil, and water resistance to paper and paperboard used in food- and non-food-contact applications (such as paper plates, bowls and cups).	PFCs are extremely persistent and bioaccumulative chemicals.[i] How we are exposed is not well documented but concern comes from the prevalence of PFCs in humans. In a study from Johns Hopkins Bloomberg School of Public Health, researchers analyzed cord blood samples from 300 newborns in Baltimore and found PFOS and PFOA in 99% and 100% of umbilical cord blood, respectively.[ii] In animal studies, PFOS is linked to bladder cancer, liver cancer, and developmental and reproductive toxicity (including neonatal mortality).

2	Chemicals	Is this product and coatings free of intentionally added organohalogens? (Yes/no)	Yes	Halogenated organic compounds are cnonmetallic chemicals that contain a halogen element, such as fluorine, chlorine, bromine, or iodine, bonded to carbon. They are used in food service ware to make products grease-resistant. Organohalogens are now commonly found in all humans, including newborns - exposed when these chemicals cross the placenta. Despite FDA approval for the use of many organohalogen additives, including organofluorines, in disposable food ware products, the prudent course of action is to not purchase food service ware products that contain organohalogens. Verification can be done through XRF spectroscopy technology.	The organohalogens, especially the organo-chlorines and organo-bromines, have been a focus of international concern for many decades because they are associated with many negative environmental and human health impacts. Over the course of their life cycle organohalogens contribute to the formation and dispersion of chemicals of high concern -- especially persistent, bioaccumulative and toxic compounds like dioxins and furans -- into the environment and humans. Examples of organohalogens restricted by international treaties, sich as the Stockholm Convention on Persistent Organic Pollutants, include polychlorinated biphenyls (PCBs), DDT, dioxins and furans, and pentabromodiphenyl ether (pente-BDE).
3 (a)	Chemicals	Is this product free of intentionally added engineered nanomaterials? (Yes/No)	Yes	Nanotechnology is the science of manipulating matter at the molecular scale to build structures, tools, or products, known as nanomaterials. Nanomaterials are those whose small scale imparts unique physical properties.	The risks and benefits of this emerging technology are still being discovered; yet the development, use, and manufacturing of nanomaterials are being conducted with little transparency and inadequate regulatory oversight. This is particularly concerning to the food industry where human exposure is virtually guaranteed.[iii]

3 (b)	Chemicals	If “no” is the answer to 3(a), has this product been either (1) registered with the EPA or the Project on Emerging Nanotechnologies in the U.S. or, (2) at a minimum, has the product been added to any voluntary reporting programs including, but not limited to, the U.S. EPA’s Nanoscale Materials Stewardship Program and the United Kingdom’s Department for Environment, Food and Rural Affairs (DEFRA) Voluntary Reporting Scheme for Engineered Nanoscale Materials? (Yes/No)	Yes	The Environmental Protection Agency (EPA) found that approximately 90% of the different nanoscale materials that are likely to be commercially available for industry were not reported under its voluntary reporting program, and nearly two-thirds of the chemical substances from which commercially available nanoscale materials are based were not reported either.[iv] Thus, the government and, in turn, industry does not have full access to either the potential existence of nanomaterials or the risks related to the nanomaterials enhancing products.[v]	This transparency and disclosing information to stakeholders is important in order to mitigate its exposure to risks related to the use of nanomaterials in food and food packaging.[vi]

4	Compostability	Is this product certified as "commercially" compostable (i.e., does it meet ASTM D6400 or D6868, DIN EN 13432, AS 4376, or ISO 17088) or is this a paper product approved for commercial composting (i.e., Cedar Grove approved or other reputable commercial composting facility)? (Yes/No)	Yes, if composting is available	Certified compostable means the product will fully and safely biodegrade in a commercial-scale compost facility in a specific number of days. If you're purchasing food service ware that contains biobased plastic, look for products that are certified by one or more of the following organizations: Biodegradable Products Institute (BPI) or Green Seal (USA), Din Certo (European Union), AIB Vincotte Inter (Belgium), Australian Environmental Labeling Association (Australia) or Biodegradable Bioplastics Association (Japan). BPI does not certify paper-based products unless they have a bioplastic liner. Some paper-based food service ware products contain a conventional plastic liner; these products may or may not be acceptable in commercial composting facilities. Cedar Grove is a commercial facility that tests and approves products. See product list, http://www.cedar-grove.com/acceptable/Accepted%20List.asp	It is important that compostable food service ware products are used in a facility that has a designated composting facility or system in place that will accept compostable biobased food service ware to enable the recovery of both the food waste and the food service ware product. For a list of products certified to the Biodegradable Products Institute as compostable, see http://products.bpiworld.org/.
5	Packaging	Is this product offered either in bulk or are the individual wrappings recyclable (e.g., paperboard) or certified as compostable in a commercial composting facility? (Yes/No)	Yes	Sustainable packaging can take a number of forms but reduces waste and associated disposal or recycling costs.	Purchasing products in bulk form (rather than individually wrapped units) cuts down on waste.

6	Packaging	Is this product packaged without polystyrene (PS, commonly referred to as Styrofoam™) and polyvinyl chloride (PVC)? (Yes/No)	Yes	Polystyrene (CAS 9003-53-6) is a plastic polymer from the monomer styrene. It comes in many forms: sheet, expanded or extruded foam, or as oriented polystyrene. What is commonly known as Styrofoam™ refers only to the extruded form of polystyrene. Packaging refers to all materials (primary, secondary, etc) used to transport and protect a product from damage. Alternatives to polystyrene packaging are available. Polyvinyl chloride (PVC) or "vinyl" is a plastic polymer used in a wide array of products. It is the third most widely produced plastic.	A Polystyrene, or PS, can be identified by resin code "6," which is shown inside chasing arrows on applicable plastic products. Polystyrene is difficult for hospitals to recycle because it is rarely included in recycling programs. Alternative packaging materials that are commonly recycled are readily available. Foam blowing agents (called hydrochlorofluorocarbons, HCFCs) used to make polystyrene foam are compounds that can deplete the ozone layer. Every step of the polystyrene production involves highly hazardous chemicals, in contrast to many other plastics. Alternative packaging materials are readily available. Production and incineration of PVC releases dioxins and other harmful chemicals. Dioxins are widely distributed throughout the environment in low concentrations and are persistent, bioaccumulative and toxic (PBT). Dioxins are potent toxicants with many health impacts even at low exposure levels.
7	Performance	Can at least 10 samples of this product be provided for testing upon request by member hospitals? (Yes/No)	Yes	Performance testing is an essential part of evaluating food ware.	Hospitals may want to performance test compostable food service ware to ensure that it does not leak, deform in hot water, or create sharp edges when broken

8	Recycled Content	Does this product contain recycled content? (Yes/No) If yes, what is the percentage of total and postconsumer recycled content?	Yes/Highest percentage meeting performance needs	Recycled content is the percentage of recovered material, including preconsumer and postconsumer materials that, at a minimum, meets the U.S. EPA's Comprehensive Procurement Guidelines, or contains at least 30% postconsumer content. Currently, there are a small number of disposal food service items that contain recycled content; these include paper plates, bowls and cups; and ancillary food service items such as coffee filters, napkins, tray liners and paper towels. Most food-contact products have only pre-consumer recycled content.	Buying recycled-content products ensures that the materials collected in recycling programs will be used again in the manufacture of new products. According to EPA, recommending postconsumer recycled content levels for items will have the most positive impact on reducing the amount of solid waste requiring disposal.[vii] Purchasers should prefer products with the highest postconsumer recycled content that also meet other considerations. Use of postconsumer recycled content is fundamental to closing the loop in the recycling process, using fewer natural resources, and based on EPA's ReCon Tool, can reduce greenhouse gas emissions.
9	Manufacturing Process	Is this product unbleached or made without the use of chlorine or any chlorine derivatives? (Yes/No)	Yes	Up until the late 1990s, chlorine was the chemical of choice for bleaching paper in the kraft pulping process. Chlorine and chlorine derivatives are used to "whiten" paper in paper making process. Unbleached paper typically does not use whitening agents. Some food service ware products are whitened with chlorine-free compounds such as hydrogen peroxide or ozone which are safer for workers and the environment.	Dioxins are formed when paper products are manufactured or bleached with chlorine or chlorinated compounds. They are widely distributed throughout the environment in low concentrations and are persistent, bioaccumulative and toxic (PBT). Dioxins are potent toxicants with many health impacts even at low exposure levels.

10	Recyclable	Is this product recyclable? (Yes/No)	Yes	Recyclable, according to the FTC Green Guides, means the product can be collected, separated, or otherwise recovered from the waste stream through an established recycling program for reuse or use in manufacturing or assembling another item. Any unqualified claims of recyclability indicates the supplier can demonstrate that at least 60% (substantial majority) of consumers or communities where the item is sold have recycling facilities. If recycling facilities are available to less than a substantial majority of consumers and communities, then marketers should qualify all recyclable claims by stating the percentage of consumers or communities that have access to facilities that recycle the item. Recyclable does not describe FDA-regulated single-use device reprocessing. This question refers to the product only, not packaging. Products that become regulated medical waste after use cannot claim to be recyclable. Primary packaging is not considered part of the product for the purpose of this question.	Recyclable products in communities in the U.S. reduce materials going to the waste stream and their associated costs. For details, refer to the FTC Green Guides, https://www.ftc.gov/sites/default/files/attachments/press-releases/ftc-issues-revised-green-guides/greenguides.pdf.

11	Multiple environmental attributes	Is this product certified by either Green Seal or UL's ECOLOGO? (Yes/No)	Yes	Green Seal-certified shall be defined as products or services that meet the standards of Green Seal, an independent nonprofit organization, and have been certified by Green Seal or other third party as meeting those standards. Types of institutional products certified include food-service packaging (GS-35 covers rigid and flexible wrap containers, trays) sanitary paper products (GS-1 covers napkins and paper towels) and paper food preparation materials (GS-18 covers coffee filters, cupcake liners, parchment paper). http://www.greenseal.org/GreenBusiness/Standards.aspx UL ECOLOGO is a similar entity. UL 175 Standard for Sustainability for Sanitary Paper Products covers table napkins, kitchen towels and hand towels. For more information go to http://industries.ul.com/environment/certificationvalidation-marks/ecologo-product-certification	Green Seal- and UL -certified products meet multiple environmental considerations that may include recycled content, performance, toxicity and other criteria specific to the product category. For a list of certified products to Green Seal, see http://www.greenseal.org/findgreensealproductsandservices.aspx. For a list of certified products to UL, see their Sustainable Product Guide, click on ECOLOGO certified and the category desired (sanitary papers), http://productguide.ulenvironment.com/QuickSearch.aspx
12	Sourcing	Is this product certified as sustainably produced by the Forest Stewardship Council (FSC), Rainforest Alliance, USDA Organic, Protected Harvest or Fair Trade USA? (Yes/No) If yes, please indicate which one.	Yes	Although there is no single definition of sustainable agriculture or forestry, several independent third party organizations certify products that contain agricultural or forestry products that do not harm the environment, protects workers from exposure to highly toxic pesticides and other hazards, respects animals, provides a fair wage to the farmer, and supports and enhances rural communities.	Product ingredients may have been produced with synthetic pesticides and fertilizers, antibiotics, or added hormones. They may have been harvested in ways that contribute to habitat destruction, water pollution, displacement of indigenous peoples. Certification would avoid this.

Non-Cutlery Products (includes plates, bowls and cups as well as napkins, placemats, trays, etc.)
Add the following questions for non-cutlery products.

#	Topic	Environmental Questions	Preferred Answer	Definition	Rationale
13	Biobased	Does this biobased plastic product contain at least 90% biobased carbon content (excluding inorganic additives) based on ASTM D6866? (Yes/No) UNCOATED wood, paper and other fiber-based materials automatically comply.	Yes	Biobased products are derived from plants and other renewable agricultural, marine and forestry materials and provide an alternative to conventional petroleum derived products. Biobased content indicates the percentage of total carbon that is biobased in a bioplastic food service ware product or coating. Companies may be asked to verify the biobased content (based on ASTM D6866) by providing laboratory test data or by showing certification of the biobased content by the USDA's BioPreferred Program, Vincotte's OK Biobased Program, or another third party certifier.	A product containing a percentage of biobased materials does not mean the product is compostable. Refer to responses in question #4 above on compostability. The Federal law, the Federal Acquisition Regulation and Presidential Executive Order require federal agencies to purchase biobased products in categories identified by the USDA. The USDA BioPreferred Program offers a catalog of targeted products to consider. To date, they have identified 97 categories (e.g., cleaners, carpet, lubricants, paints) and have set minimum biobased content standards. In this category, a higher biobased content is recommended compared to USDA's BioPreferred Program which recommends a minimum of 72% biobased content for disposable tableware, http://www.biopreferred.gov/BioPreferred/faces/catalog/Catalog.xhtml.

Cutlery Questions

Add the following questions for any cutlery products.

#	Topic	Environmental Questions	Preferred Answer	Definition	Rationale
14	Biobased	Does this biobased plastic product contain at least 70% biobased carbon content based on ASTM D6866? (Yes/No) UNCOATED wood, bamboo and other fiber-based materials automatically comply.	Yes	Biobased products are derived from plants and other renewable agricultural, marine and forestry materials and provide an alternative to conventional petroleum derived products. Biobased content indicates the percentage of total carbon that is biobased in a bioplastic food service ware product or coating. Companies may be asked to verify the biobased content (based on ASTM D6866) by providing laboratory test data or by showing certification of the biobased content by the USDA's BioPreferred Program, Vincotte's OK Biobased Program, or another third party certifier.	A product containing a percentage of biobased materials does not mean the product is compostable. Refer to responses in question #4 above on compostability. Federal law, the Federal Acquisition Regulation and Presidential Executive Order require federal agencies to purchase biobased products in categories identified by the USDA. The USDA BioPreferred Program offers a catalog of targeted products to consider. To date, they have identified 97 categories (e.g., cleaners, carpet, lubricants, paints) and have set minimum biobased content standards. In this category, a higher biobased content is recommended compared to the USDA's BioPreferred Program, which recommends a minimum of 48% for disposable cutlery, http://www.biopreferred.gov/BioPreferred/fac

Additional Desirable Criteria

#	Topic	Environmental Questions	Preferred Answer	Definition	Rationale
15	Sourcing	Was this product grown without genetically modified organisms (GMOs)? (Yes/No)	Yes	This product was not made with materials that contain genetically engineered/ modified (GE/GM) organisms. Prefer products that are certified to be GMO-free. Acceptable certifications include Non-GMO Project Verified (www.nongmoproject.org), CERT ID Non-GMO or ProTerra Certifications (www.genetic-id.com/services/certification). Or products can be tested by GeneScan, Inc. (www.gmotesting.com), a laboratory which verifying that products do not contain GMOs.	Products that contain corn, soy, canola and their derivatives (e.g., oil, high-fructose corn syrup, corn meal, soy protein, etc) may have been produced from genetically modified seeds. GMO containing foods or ingredients are not adequately assessed for their credible adverse effects on human or animal health, or on the environment in which they are produced. Also of concern is the threat posed by genetic engineering to environmentally sustainable food production and to the economic livelihood of farmers pursing sustainable food production. See related fact sheet: http://www.noharm.org/lib/downloads/food/Genetic_Engineered_Food_Stmnt.pdf

This resource is based in large part on the Sustainable Biomaterials Collaborative's BioSpec Purchasing Specifications for Compostable Biobased Food Service Ware prepared by the Green Purchasing Institute.

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[i] Factsheet: Perfluorinated compounds and Human Health Concerns, Healthy Building Network, April 2009
[ii] Apelberg, B, Goldman L, Calafat A, Herbstman J, Kuklenyik Z, Heidler J, Needham L, Halden R, Witter F. Determinants of Fetal Exposure to Polyfluoroalkyl Compounds in
[iii] Galland, PhD., Amy; Passoff, Michael, Sourcing Framework for Food and Food Packaging Products Containing Nanomaterials, As You Sow, 2011, p 4.
[iv] Pat Rizzuto, "Limited Participation in Nano Program Spurs EPA to Examine Regulatory Authority," BNA Daily Environment Report, January 14, 2009, page A-3.
[v] Galland, PhD., Amy; Passoff, Michael, Sourcing Framework for Food and Food Packaging Products Containing Nanomaterials, As You Sow, 2011, p 6.
[vi] Galland, PhD., Amy; Passoff, Michael, Sourcing Framework for Food and Food Packaging Products Containing Nanomaterials, As You Sow, 2011, p 6.
[vii] Background Document for the Final Comprehensive Procurement Guideline (CPG) III and Final Recovered Materials Advisory Notice (RMAN) III, U.S. EPA, September

[viii] Chlorine Free Processing, Conservatree, http://www.conservatree.org/paper/PaperTypes/CFDisc.shtml, Accessed February 2012