“Forever Chemicals” in Single-use foodware
A non-profit organization dedicated to protecting public health from exposures to toxic chemicals.

The Center for Environmental Health works with large purchasers to utilize their buying power to incentivize the production of environmentally preferable products.
Endocrine Disrupting Chemicals

- Mimic, block, or change the activity of hormones, even at minute doses
- Can cause diabetes, obesity, reproductive harm, promote cancer, and other diseases
- Fetuses, babies and children vulnerable
- Exposure during critical developmental stages can lead to life-long health impacts.
Per- & Polyfluoroalkyl Substances (PFAS)

- Entirely manmade – thousands of formulations in use
- Many are *extraordinarily persistent* in the environment, cannot be broken down by natural systems
- PFAS are detected in air, water, soil, sludge
- Many *bioaccumulate* at the top of the food chain – in birds, fish, livestock, and humans
- Environmental persistence leads to *global distribution* via air and water movement – releases here can be significant for communities on the other side of the world

Slide adapted from Andrew Lindstrom, US EPA
Some Uses & Sources of PFAS

Source: Green Science Policy Institute, reproduced with permission [www.greensciencepolicy.org](http://www.greensciencepolicy.org)
PFAS Health Effects & Exposure

Human health effects associated with PFAS in the general population and/or communities

- Associated with kidney and testicular cancer, elevated total cholesterol, accelerated puberty, liver damage, obesity, immune system and thyroid disruption, and other health problems.

Exposure Pathways

- Diet (fish/seafood, garden produce, etc)
- Drinking water
- Incidental soil/dust ingestion
Disposable Foodware & Fluorinated Additives

• CEH tested single-use plates, bowls, clamshell containers and food trays
• PFAS is used in foodware for water- and grease-resistance
• PFAS can end up in food, compost and landfills.
Database of Products

- Results of product testing is publicly available
- Findings indicate which products are “fluorinated” or “non-fluorinated”
- Accompanies CEH’s Foodware report

www.ceh.org/foodware
### Summary of FL results by material type

- **ALL MOLDED FIBER** products tested had high fluorine content (indicating likely treatment with PFAS) – sugarcane/bagasse, wheat straw, wheat stalk, recycled paper fibers, plant fibers

- **Avoid polystyrene**

### Summary of Product Materials and their Fluorine Test Results

<table>
<thead>
<tr>
<th>Material Type Tested</th>
<th># Products Tested</th>
<th>Fluorinated Products</th>
<th>Low/Non-Fluorinated Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bamboo</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Molded Fiber</td>
<td>153</td>
<td>148</td>
<td>5</td>
</tr>
<tr>
<td>Molded Fiber - PLA Lining</td>
<td>5</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Palm Leaf</td>
<td>10</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>Paper</td>
<td>27</td>
<td>0</td>
<td>27</td>
</tr>
<tr>
<td>Paper - Clay Coated</td>
<td>6</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Paper - PLA Lined</td>
<td>23</td>
<td>0</td>
<td>23</td>
</tr>
<tr>
<td>Paper - Plastic Coated</td>
<td>3</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Paper - Unknown Coating</td>
<td>14</td>
<td>0</td>
<td>14</td>
</tr>
<tr>
<td>Polylactic Acid (PLA)</td>
<td>37</td>
<td>0</td>
<td>37</td>
</tr>
<tr>
<td>Plastic</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>282</strong></td>
<td><strong>154</strong></td>
<td><strong>128</strong></td>
</tr>
</tbody>
</table>
Concerns with Single-Use Food Service Ware

Lifecycle concerns
- Production/Transportation
- Use
- Disposal (waste)

Toxic Chemicals
- PFAS
- Polystyrene

https://huggythemuggy.files.wordpress.com/2011/05/img_2690.jpg
Disposable Foodware & Fluorinated Additives


• “Compostable” does not equal safe (BPI-certified* or CMA Accepted compostable products can still have PFAS)

• Recyclable Foodware is unlikely to be recycled

*By Jan 1, 2020, ALL BPI-Certified products will be “free” of PFAS
BPI-Certified Compostable

Biodegradable Products Institute (BPI) certifies food service ware products as compostable http://products.bpiworld.org/

• By Jan 1, 2020, all BPI-Certified products will be “free” of PFAS.

CMA Composter Approved List

Compost Manufacturing Alliance (CMA) verifies compostability of products in their composting facilities
https://compostmanufacturingalliance.com/portfolio/commercially-accepted-items/

• By Jan 1, 2021, products on CMA-Approved Lists will be “free” of PFAS.
Problems with Polystyrene

- Styrene is reasonably anticipated to be a human carcinogen (2011, National Toxicology Program)
  - Styrene can leach into food or drinks

- Very difficult to recycle
  - Made from petroleum; ends up in landfills, waterways
  - Breaks down into smaller pieces; ingested by animals
  - Products contaminated with food;

- May 2017: Determination that food-service foam “cannot be recycled in a manner that is economically feasible or environmentally effective for NYC”
Things Purchasers/Organizations Can Do

1. Participate in Product Testing
2. Letter to/Discussion with Suppliers
3. Communication with Certifiers (Compostability/Sustainability)
4. Use Model Specifications
5. Prefer Non-Fluorinated Foodware
Low Cost Product Testing

- Organizations can submit single-use foodware for testing
  - Plates, bowls, clamshells, food trays/boats
- Useful information for discussions with suppliers
- Contributes to list of preferred products

To participate, email foodware@ceh.org
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Pollution Prevention Director
sue@ceh.org
510-740.9389

Thank you!