

# How to Buy Healthier Furniture and Food Service Ware Without Harmful Chemicals



**SF Environment**

**Our home. Our city. Our planet.**

A Department of the City and County of San Francisco



**CEH**

**CENTER for ENVIRONMENTAL HEALTH**



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ENVIRONMENTAL  
HEALTH

# Kicking Toxics Out of Furniture

presented by Judy Levin

Healthy Babies Bright Cities Webinar/ 05.24.2018



**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***

# Indoor Air Quality

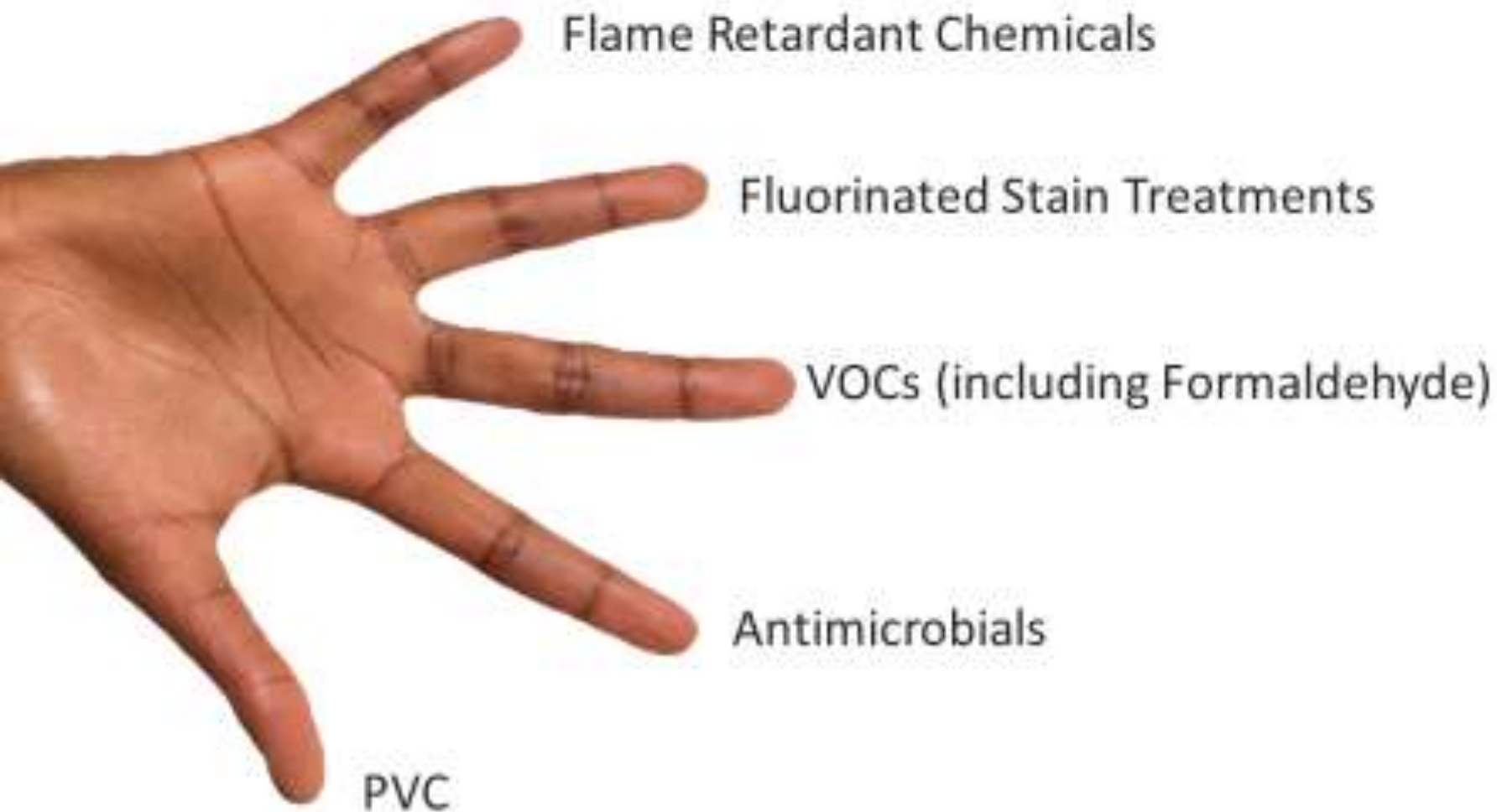
- Most Americans spend up to 90% of their time indoors
- Indoor air can have higher levels of pollutants than outside levels
- Impacts health, comfort, well being, and productivity



<http://www.epa.gov/iaq/pubs/occupgd.htm>



# THE “HAZARDOUS HANDFUL”



# Chemical Flame Retardants

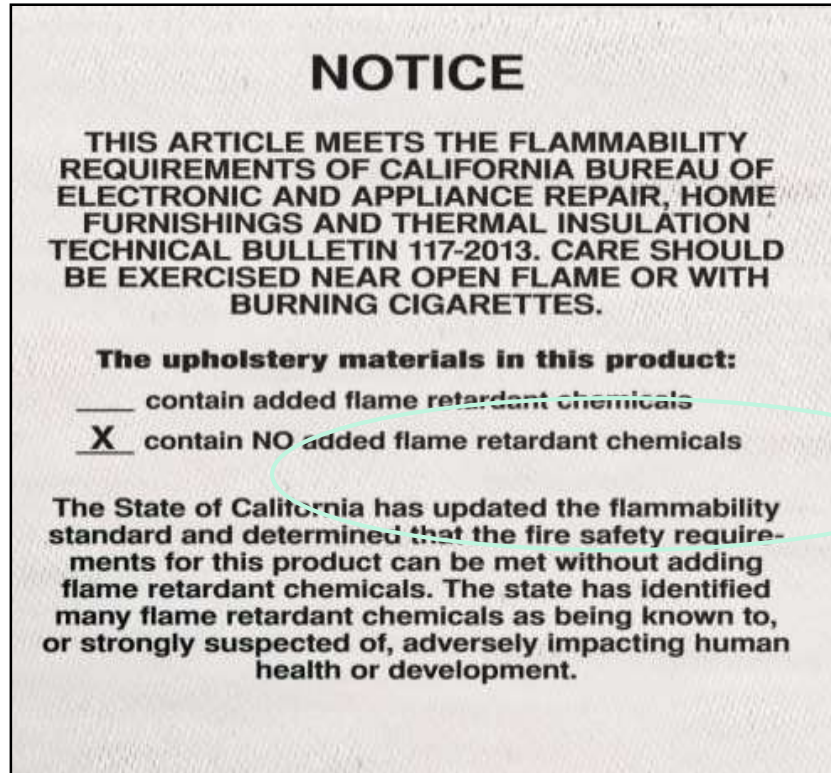
- **Health Concerns**
  - Reproductive
  - Neurodevelopmental
  - Immune system impacts
  - Cancer
- Migrate out of products: found in humans, breast milk, dust, pets, wildlife, environment
- Do not reduce number or severity of fires in typical furniture





# FURNITURE FLAMMABILITY REGULATIONS

TB 117-2013



TB 133



# TB 133 VS TB 117-2013

TECHNICAL BULLETIN 133	TECHNICAL BULLETIN 117-2013
Addresses public buildings / public assembly areas; a voluntary measure IF the area is fully sprinklered	Non-public occupancy or assembly <u>OR</u> all occupancy and assembly types, fully sprinklered
Large open flame test	Smolder test
Typically met using FR-treated fabric, foam, and / or barrier cloth	Can be met without the use of FRs
20% - 30% more expensive to meet compared to TB 117-2013	Less expensive to meet than TB 133



# Fluorinated Stain Treatments

- Extremely persistent in environment and may bioaccumulate in people and wildlife
- Migrates out of products
- Exposed via ingestion of contaminated materials, food, (including breast milk) and occupational
- Kidney and testicular cancer, thyroid disruption, elevated total cholesterol, obesity

## Recommendation:

Avoid stain or water repellent treatments that contain PFAS-both long and short chain



# Volatile Organic Compounds

Affect indoor air quality (IAQ)

Exposure: Inhalation, dermal and occupational

## Health Concerns:

- Respiratory illness/asthma
- Cancer/Leukemia/Lymphoma
- Decreased Fertility

## Recommendation:

- CA Section 01350 (CA Dept. of Public Health) or Greenguard **Gold**. SCS Indoor Advantage **Gold** may or may not meet-check certificate.
- Composite Wood should meet Formaldehyde Emissions Standards (CCR, Title 17)



# Antimicrobials

- Limited evidence that antimicrobials added to furnishings reduces spread of infection
- Exposed through ingestion, inhalation and dermally
- Endocrine problems, reproductive changes and possible increased allergies in kids.
- Can create “super bugs”

**Recommendation:** Avoid products with added chemical antimicrobials



Ted Schettler, MD, MPH (Case-Western Reserve University, Harvard School of Public Health)



# Kaiser's Bulletin on Antimicrobials

<b>BULLETIN</b>   KP FACILITIES DESIGN PROGRAM	
<b>BULLETIN #:</b> 2015-05	
Approved By: John Kouletsis, AIA, EDAC,	National Facilities Services, Vice President, Facilities Planning and Design
<b>Topic: Prohibition of Antimicrobial Chemicals in Fabrics, Furniture and Finishes</b>	
Date Issued: October 15, 2015	Contact: Jennifer MacDaniel

**ITEM TYPE:**  
 New     Modification     Lesson Learned     Infection Prevention     Other:

**BULLETIN TYPE:**  
 Recommended     Required: see exceptions below

**PROGRAM ELEMENT(S) IMPACTED:** *(Check all that apply)*

- Space Program
- Functional Program
- Room Templates
- Design Criteria
- Sourcing Strategy
- MedAsset/KP Select
- Equipment/Furniture
- Signage
- Other—
- not applicable

**POTENTIAL IMPACT TO COST MODEL:**  
 Yes     No     Not Applicable  
**Additional Comments:**  
\_\_\_\_\_

**POTENTIAL IMPACT TO PROJECT BUDGET:**  
 Yes     No     Not Applicable  
**Additional Comments:**  
\_\_\_\_\_

**BRIEF DESCRIPTION OF CHANGE:**  
Effective immediately, specification of antimicrobial chemical additives or treatments for fabric, furniture, and finishes are prohibited on any Kaiser Permanente project. This prohibition includes all Main Loan Fund, PM&R and Expense projects.

**What's Changing:**  
As part of an on-going mission to protect public health, Kaiser Permanente seeks to eliminate the specification of antimicrobial chemicals in the projects that we design and build.

Our furniture and fabric vendor partners have been notified of our goal to eliminate the following 13 antimicrobial chemicals or elements:

1. Benzisothiazolin 3-one (BIT)
2. Didecyl dimethyl ammonium chloride (DDAC)
3. Diiodomethyl p-tolyl sulfone
4. Hexamethylenetetramine
5. Kathon 886 (CIT/MIT mixture)
6. Methylchlorothiazolinone (CIT, CMIT)
7. Methylisothiazolinone (MIT)
8. N-octadecyldimethyl (3-(trimethoxysilyl) propyl) ammonium chloride
9. Silver (nano)
10. Silver sodium hydrogen zirconium phosphate
11. Silver zinc zeolites
12. Triclosan
13. Zinc Pyrithione





# Polyvinyl Chloride (PVC)/Vinyl



Problematic throughout life cycle: manufacture, use and end-of-life

## **Associated Health Issues:**

- Neurodevelopmental
- endocrine system disruption
- birth defects
- reproductive toxicant
- cancer

## **Recommendation:**

- Avoid products with PVC
- Small components exemption: > 1% of product by weight



# Consider End-of-life At Design Phase

## Extend Product Life When Possible

- Redeploy
- Reupholster/ Refurbish/ Remanufacture

## Extending Life Has Other Benefits:

- Energy savings
- Landfill avoidance
- CO<sub>2</sub> reduction
- Natural Resource Savings



**Need to stop the use of harmful chemicals**





# ANSI/BIFMA e3-2018

## Updated Furniture Sustainability Standard

### Credit 7.4.4: Targeted Chemical Elimination

New criterion restricts:

- ❑ Flame retardants
- ❑ PFAS
- ❑ Antimicrobials
- ❑ PVC
- ❑ Formaldehyde

Can apply to level 1, 2, or 3 products



Specify Products That Meet 7.4.4



# Manufacturers with Products Free of the Key Chemicals of Concern

(partial list)

allseating 

Allsteel®

DAVID EDWARD



Gunlocke®

HAWORTH®



Herman Miller

HON.



JASPER DESK

KEILHAUER



Kimball®Office

Knoll

LA Z BOY®  
CONTRACT FURNITURE

knú  
CONTRACT

NeutralPosture



OFS BRANDS

SITMATIC®

SitOnIt • Seating®



Steelcase

Teknion

WIELAND



# Approved State Of New York Furniture Specifications

New York becomes first state to adopt furniture specifications that restrict the “hazardous handful” chemicals



<https://ogs.ny.gov/greeny/green-product-specs.asp>



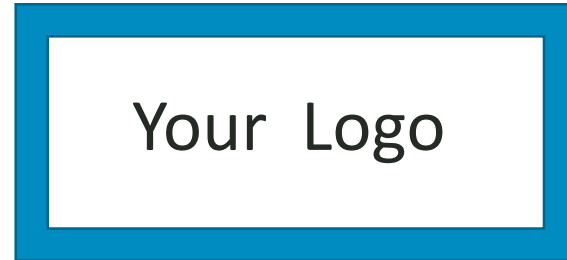
# JOIN CEH'S PURCHASER PARTNERS



Genentech



KAISER PERMANENTE®



MASSACHUSETTS



PERKINS  
+ WILL



# Healthier Furniture : “Low Hanging Fruit”

- Healthier People and Communities
- Market is Receptive
- Safer Alternatives Exist
- Cost Neutral or Cost Savings \*
- Sustainability success story
- Aligns with organizational mission and values
- Can contribute to valuable LEED points



*\* Hackensack University Medical Center saved \$65,000 on a \$250,000 spend for lounge furniture*

# Summary: Ways CEH Can Help

- Educate key staff
- Provide sample letters to suppliers
- Test the market (if needed)
- Provide Tech. Specs. for RFPs/RFIs/Contracts
- Identify healthier products within existing contracts
- Survey furniture manufacturers
- Use contract extensions as opportunity for change
- Provide technical assistance





# Resources Available



- [https://www.ceh.org/wp-content/uploads/Flame\\_Retardant\\_E\\_Guide\\_May\\_2017.pdf](https://www.ceh.org/wp-content/uploads/Flame_Retardant_E_Guide_May_2017.pdf)
- <http://www.ceh.org/wp-content/uploads/FB-Purchaser-Guide-December-2017.pdf>
- <http://www.healthierhospitals.org/hhi-challenges/safer-chemicals>





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# Local Action on Toxic Chemicals in Furniture

Jen Jackson, Toxics Reduction & Healthy Ecosystems Program Manager



A hand is holding a piece of crumpled yellow paper. The word "why?" is written in large, bold, black, serif font across the center of the paper. The background is a plain, light-colored surface.

**why?**



**~29,000** employees

**~\$123M** budget for materials

**~\$354M** capital projects



# Protecting Air, Land & Water





# Employee Health



# Furniture



**Flame Retardants**  
**Antimicrobials**  
**Fluorinated Chemicals**  
**Phthalates (PVC)**  
**VOCs/Formaldehyde**  
**Heavy Metals**



**City and County of San Francisco**

**Request for Proposals for**

**Ergonomic Furniture  
RFQ 70600**



**NO  
Flame Retardants  
Antimicrobials  
Fluorinated Chemicals  
PVC  
Heavy Metals  
& Meet VOC Requirements**

# Opportunity Knocks





# Success!





Required [?](#)



### Free products from the Virtual Warehouse for City departments

**When to Use**  
Get or give surplus items.

**Product/Service Type**  
Consumer, Industrial

[More information](#)

Suggested [?](#)



### Seating (benches, chairs, couches, stools, theater)

To see suggested products that meet our health and environmental criteria, click the "see products" link below. Our list builds on Healthier Hospitals (HH) and Center for Environmental Health (CEH) Furniture Lists with the following additions:

1. Links to **product and fabric images**
2. **Special requests customers must make in order for the product to be green** (e.g., don't buy chrome metal, request Forest Stewardship Council (FSC) certified wood)
3. Whether **pricing** is high-, medium- or low-end
4. Links to green claims
5. **Health and environment criteria from the State of Massachusetts and City of Portland, OR including:**

-Hexavalent and trivalent chromium: All components of a furniture assembly with plated finishes must be consistent with the Restriction of the Use of Certain Hazardous Substances of the European Union Directive (EU RoHS) and must contain less than 100 ppm of hexavalent and trivalent chromium.

-Heavy Metals: All components of a furniture assembly, including textiles, finishes and dyes, must contain less than 100 ppm of heavy metals including mercury, cadmium, lead and antimony.

-Textiles that either are certified to GOTS, Deko-Tex, 100 STEP, or Cradle to Cradle standards -OR- have no hazardous harmful chemicals listed in HH and CEH lists (formaldehyde and other VOCs emissions, flame retardant chemicals (NOTE: excludes TB 133), added antimicrobial chemicals (ones added for the sole purpose of preserving the product are exempt), per- and poly-fluorinated chemicals (PFAS), and polyvinyl chloride (PVC) (NOTE: products made of less than 1% PVC by weight are exempt).

**Manufacturer(s):** [See products](#)

**Product/Service Type**  
Consumer, Industrial

[More information](#)





PRODUCT NAMES (Products below meet our criteria only if you follow directions in orange columns)							SUMMARY of KEY eco-ordering info		
Seating subcategory	Manufacturer	Collection	Product Name	Mfr link to product image/specs	High-, mid-, or low-end pricing	Forest Stewardship Council (FSC) Certified	Compliant textiles that:	Hexavalent and trivalent chromium:	
PRODUCT NAMES (Products below meet our criteria only if you follow directions in orange columns)							<p><b>Forest Stewardship Council (FSC) Certified</b></p> <p>(In most cases, manufacturers can make products FSC wood, sometimes with no extra charge)</p> <p><b>Compliant textiles that:</b></p> <ol style="list-style-type: none"> <li>Are certified to at least one of the following standards: GOTS, Oeko-Tex 100 or STeP, Cradle to Cradle AND/OR:</li> <li>Does not contain these hazardous harmful chemicals:                             <ol style="list-style-type: none"> <li>Formaldehyde and other VOCs emissions</li> <li>Flame retardant chemicals (NOTE: excludes TB 133)</li> <li>Added antimicrobial chemicals (ones added for the sole purpose of preserving the product are exempt)</li> <li>Per- and poly-fluorinated chemicals (PFAS)</li> <li>PVC (NOTE: products made of less than 1% PVC by weight are exempt)</li> </ol> </li> </ol> <p><b>Hexavalent and trivalent chromium:</b> A components of a furniture assembly with finishes must be consistent with the Res the Use of Certain Hazardous Substance European Union Directive (EU RoHS) a contain less than 100 parts per million (p weight of the homogeneous material.</p>		
Seating: bench, UPHOLSTERED	HBF		Linea (bench)	<a href="http://hbf.com/products/seating/linea-bench">hbf.com/products/seating/linea-bench</a>	high-end pricing	Will comply if customer special orders FSC & pays upcharge	Invalid: Input must fall within specified range	Comment to the right for links to compliant fabric aldehyde and other VOCs, antimicrobials, flame Healthier Hospitals Initiative.	Complies per letter from manufacturer
Seating: bench, UPHOLSTERED	Steelcase		Coalesse Lagunitas Lounge	<a href="https://www.Steelcase.com/products/lounge-seating/lagunitas/">https://www.Steelcase.com/products/lounge-seating/lagunitas/</a>	mid- to high-end pricing	<a href="https://info.f...e=certificate">https://info.f...e=certificate</a> customer special orders FSC wood	Choose from these C2C or Oeko-Tex certified textiles	Will comply if customer picks polished instead of chrome plated steel.	Hexavalent complies.
Seating: bench, UPHOLSTERED	Steelcase		Lounge, Ripple	<a href="https://www.Steelcase.com/products/lounge-seating/ripple/">https://www.Steelcase.com/products/lounge-seating/ripple/</a>	mid- to high-end pricing	Will comply if customer special orders FSC wood	Choose from these C2C or Oeko-Tex certified textiles	Will comply if customer picks polished instead of chrome plated steel.	Hexavalent complies.
Seating: educational	KI (Krueger International)		Intellect Classroom Furniture	<a href="https://www.ki.com/products/name/intellect-chair/?type=images">https://www.ki.com/products/name/intellect-chair/?type=images</a>	low-end pricing	Not applicable (product doesn't have wood)	Complies if customer asks for textiles on page 7 of this Healthier Hospitals link because they don't have formaldehyde and other VOCs, antimicrobials, flame retardants, PFAS. They aren't certified though.	Complies unless customer special order	
Seating: educational	KI (Krueger International)		Learn2	<a href="https://www.ki.com/products/name/learn2-seating/">https://www.ki.com/products/name/learn2-seating/</a>	high-end pricing	Will comply if customer special orders FSC wood	Not certified but meets #2 if customer's own material (COM) or buys HH textiles on page 7 of this link	Complies unless customer special order	
Seating: educational	KI (Krueger International)		Single Pedestal Fixed	<a href="https://www.ki.com/products/name/single-pedest">https://www.ki.com/products/name/single-pedest</a>	low-end pricing	Will comply if customer special	Not certified but meets #2 if customer's own material (COM) or buys HH textiles on page 7 of this link	Complies unless customer special order	

# Policy/Legislation



# Flame Retardants Ordinance



## NOTICE

THIS ARTICLE MEETS THE FLAMMABILITY REQUIREMENTS OF CALIFORNIA BUREAU OF ELECTRONIC AND APPLIANCE REPAIR, HOME FURNISHINGS AND THERMAL INSULATION TECHNICAL BULLETIN 117-2013. CARE SHOULD BE EXERCISED NEAR OPEN FLAME OR WITH BURNING CIGARETTES.

The upholstery materials in this product:

- contain added flame retardant chemicals
- contain NO added flame retardant chemicals

The State of California has updated the flammability standard and determined that the fire safety requirements for this product can be met without adding flame retardant chemicals. The State has identified many flame retardant chemicals as being known to, or strongly suspected of, adversely impacting human health or development.

# Thank you!



**Jen Jackson**

SF Department of the Environment

[Jen.Jackson@sfgov.org](mailto:Jen.Jackson@sfgov.org)



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# Avoiding Hidden Hazards: Guidance for Safer Foodware

presented by Sue Chiang, MPH, MPP

05.24.2018 Healthy Babies Bright Cities Webinar

# 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 all environmental media – air, water, soil, sludge
- Many **bioaccumulate** in animals at the top of the food chain – 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



# Some Uses & Sources of PFAS

- Food contact items (containers, pizza boxes, fast food wrappers, etc.)
- Stain repellants for carpets, clothing, upholstered furniture, etc.
- Polishes, waxes, and paints
- Cleaning products
- Cosmetics



Slide adapted from Andrew Lindstrom, US EPA



# Human Exposure Pathways

## Major pathways of PFAS

- Diet - Fish, seafood, garden produce
- Drinking water
- Incidental soil/dust ingestion
- Inhalation – may be significant

## Insignificant or minor pathways

- Dermal absorption



1 Oliaei et al., 2013. Environ. Sci. Pollut. Res. Manag. 20:1977-1992

2 Domingo, 2012. Environment International 40:187-195

Slide from Andrew Lindstrom, US EPA



# PFAS Health Effects Summary



## Animal toxicity

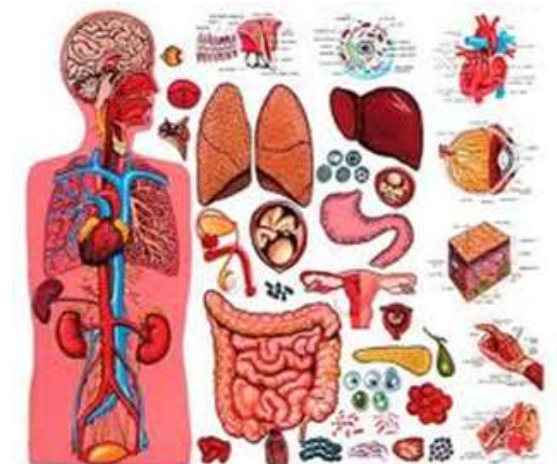
- ▣ Causes liver, immune system, developmental, endocrine, metabolic, and neurobehavioral toxicity.
- ▣ PFOA and PFOS caused tumors in chronic rat studies.



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

↑ cholesterol  
↑ uric acid  
↑ liver enzymes  
↓ birth weight  
↓ vaccine response  
Thyroid disease  
Osteoarthritis

Diabetes  
Testicular and kidney cancer  
Pregnancy-induced hypertension  
Ulcerative colitis  
Effects in young adulthood from prenatal exposures  
*Obesity in young women.*  
*↓ sperm count in young men.*



## Toxic Microwave Popcorn

### What We Found

- **100%** of the popcorn bags tested had toxic chemicals called per/polyfluoroalkyl substances (PFAS)
- PFAS mimics the hormone estrogen and have been linked to liver and kidney toxicity [www.cea.org](#)
- According to the FDA, these chemicals in popcorn bags rub off on the popcorn [www.cea.org](#)
- Our testing included major brands like ACT II, Pop Secret, Orville Redenbacher's, Pop Weaver, Regal Cinemas, and Clover Valley

### Where we Purchased Microwave Popcorn

FAMILY DOLLAR DOLLAR TREE DOLLAR GENERAL 99¢ ONLY

### Make Your Own Popcorn

#### Ingredients

Brown paper bag, popcorn kernels, oil, salt

#### Easy Directions

In a small bowl, mix together the popcorn kernels, oil, and salt. Pour the coated corn into the brown paper bag (double bag to prevent oil from leaking through) and fold over the bag twice to seal in the ingredients. Microwave the popcorn for about 2-3 min. Voila!

CAMPAIGN FOR Healthier Solutions CEH CENTER FOR ENVIRONMENTAL & COMMUNITY HEALTH

# Microwave Popcorn Bags

- Fluorinated Compounds (PFAS) used for grease-resistance in microwave popcorn bags
- PFAS mimics the hormone estrogen; linked to liver and kidney toxicity
- Major brands purchased at Dollar Stores

<https://www.ceh.org/news-events/press-coverage/content/testing-finds-chemical-additive-microwave-popcorn/>





# PFAS in Disposable Foodware



**Avoiding Hidden Hazards**  
A Purchaser's Guide to Safer Foodware



Center for Environmental Health's Database of Disposable Food Service Ware Products Tested for Fluorinated Additives

Lab Results	Manufacturer or Brand	Type of Product	Product Number/ SKU #	Product Description (link to photo)	Product Material Type	BPA Certified?	Cedar Grove Accepted?	Recycled Content?	Price	Price/Unit	Other Product Information	Website URL	Testing Company
No F	Bambu	Plate	063100	<a href="#">Brown 7" Dessert Plate</a>	Bamboo	No	Yes	0%	\$57.60 per 100	\$ 0.58		<a href="https://www.bambu.com/">https://www.bambu.com/</a>	Peaslee Lab
No F	BioMass Packaging	Plate	668-13007	<a href="#">Brown 7"x7" Square Plate</a>	Palm Leaf	No	No	100%	Unknown	Unknown		<a href="http://exocentpack.com/">http://exocentpack.com/</a>	Peaslee Lab
No F	BioMass Packaging	Plate	568-02020	<a href="#">Brown 8" Square Leaf Plate</a>	Palm Leaf	No	No	100%	Unknown	Unknown		<a href="http://exocentpack.com/">http://exocentpack.com/</a>	Peaslee Lab
No F	Cheeky	Plate	8.1284E+11	<a href="#">Multicolored Blue and Coral 6.87" Plate</a>	Paper (Unknown Coating)	No	No	0%	\$3.26 per 48	\$ 0.07	Purchased at Target	<a href="https://www.target.com/">https://www.target.com/</a>	Peaslee Lab
No F	Cheeky	Bowl	8.1284E+11	<a href="#">Pink Porcupine 20 oz Bowl</a>	Paper (Unknown Coating)	No	No	0%	\$3.00 per 20	\$ 0.15	Purchased at Target	<a href="https://www.target.com/">https://www.target.com/</a>	Peaslee Lab
No F (PL & GI)	Dart/Solo	Plate	MP9-18001	<a href="#">8.3" Symphony Medium Weight Plate</a>	Clay Coated Paperboard	No	No	0%	Unknown	Unknown		<a href="https://www.dartco.com/">https://www.dartco.com/</a>	Peaslee and Galbraith Labs
No F	Designer	Plate	15166	<a href="#">White with Flowers 12 oz bowl</a>	Paper (Unknown Coating)	No	No	0%	\$1.00 per 15	\$ 0.07	Manufacturer: Greenbriar International; Purchased at Dollar Tree	<a href="https://www.dollartree.com/">https://www.dollartree.com/</a>	Peaslee Lab
No F	The Home Store Designer	Plate	15164	<a href="#">White with Flowers 5.8" Plate</a>	Paper (Unknown Coating)	No	No	0%	\$1.00 per 10	\$ 0.10	Manufacturer: Greenbriar International; Purchased at Dollar Tree	<a href="#">Purchased in store</a>	Peaslee Lab
No F	Dixie	Bowl	SK12PATH	<a href="#">White 12 oz Ultra Pathways Heavy Weight Paper Bowl</a>	Paper with "Soak Proof Shield" (Unknown Coating)	No	No	0%	\$46.83 per 500	\$ 0.09	Manufacturer: Georgia Pacific; 5 layers	<a href="https://catalog.gppr.com/">https://catalog.gppr.com/</a>	Peaslee Lab
No F	Dixie	Food Boat	KL300WB	<a href="#">White Kant Look Polycast Food Boat</a>	Plastic Coated Paper	No	No	Unknown	Unknown	Unknown		<a href="https://catalog.gppr.com/">https://catalog.gppr.com/</a>	Peaslee Lab

<http://www.ceh.org/disposablefoodware>





# Disposable Foodware & Fluorinated Treatments



- Fluorinated compounds (PFAS) used in some foodware for water- and grease-resistance
- Can end up in food and landfill/compost
- Minimize use of disposable food service ware and use reusables whenever possible.
- Biodegradable or compostable does not equal safe (BPI-certified or Cedar-Grove Accepted “compostable” products can still have PFAS)



# Concerns with Single-Use Food Service Ware



## Lifecycle concerns

- Production/Transportation
- Use
- Disposal (waste)

## Toxic Chemicals

- Fluorinated Compounds (PFAS)
- Polystyrene



[https://huggythemuggy.files.wordpress.com/2011/05/img\\_2690.jpg](https://huggythemuggy.files.wordpress.com/2011/05/img_2690.jpg)



# Summary of test results by material type

- Plates, bowls, clamshell containers and food trays
- ALL MOLDED FIBER products tested had high fluorine content

Table 2: Summary of Product Materials and their Fluorine Test Results

Material Type Tested:	Non-Fluorinated	Fluorinated	# of Products Tested
All Molded Fibers including: Recycled Paper, Wheat Straw/ Wheat Stalk, Silver Grass (Miscanthus), Sugarcane Waste (Bagasse), Blend of Plant Fibers		X	73
Paper with Unknown Coatings	X		25
PLA-Lined Paper and Paperboard	X		8
"100% Renewable Resources Lined with PLA"	X		5
PLA	X	1-exception	5
Clay-Coated Paper and Paperboard	X		5
Palm Leaf	X		5
Untreated/Uncoated (Non-Molded) Paper	X		4
PLA-lined Molded Sugarcane/ Bagasse		X	3
Plastic-Lined Paper	X		2
Unknown materials		X	2
Bamboo	X		1



# Considerations for Environmentally Preferable Food Service Ware

- Reusable
- Compostable
- Recyclable



- Examples of Additional Environmental Attributes:
  - Recycled content
  - Forest Stewardship Council (FSC) Certified
  - Chlorine-free bleaching



# Certified Compostable



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

- Starting in 2019, all new certified products must meet new fluorine restrictions.
- Existing products will be required to meet restrictions by end of 2019.

# Composter Approved List

Cedar Grove Composting Facility verifies the compostability of products at its facility (WA)

<https://cedar-grove.com/compostable/accepted-items>

- Fluorine restrictions policy is still under development



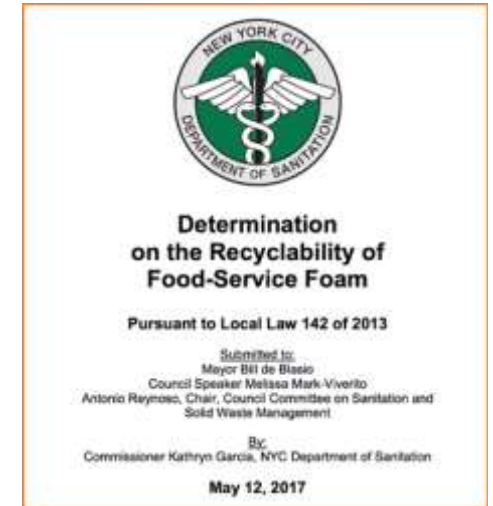




# Problems with Polystyrene



- 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”



# 5

## Things Purchasers/ Organizations Can Do

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



# Database of Products

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

Center for Environmental Health's Database of Disposable Food Service Ware Products Tested for Fluorinated Additives [updated 05.01.18]: Cleanwell & Take-Out Containers

Item	Manufacturer or Brand	Type of Product	Product Number / SKU #	Product Information (Material, Color, etc.)	Product Material Type	PFAS (ppt/ppb)	Other Contaminants	Fluorinated Additives	Price (per 100)	Price (per 1000)	Other Product Information	Manufacturer Website	Product Link	Product Link
No F	Choice	Take-out Container	309FT0KFT1	White PETE 4.5L x 6.5" x 10" x 10" Container	Polycarbonate Paperboard	No	No	No	\$0.75 per 100	\$ 0.0		<a href="#">Choice.com</a>	Pepper Lab	40004
No F	Env Products	Container	EP-102	Clear PETE 1.5L x 6.5" x 10" x 10" Container	PLA	Yes	Yes	No	\$7.75 per 100	\$ 0.41		<a href="#">EnvProducts.com</a>	Pepper Lab	
No F	Env Source Tableware	Take-Out Container	ES-6001	White PETE 4.5L x 6.5" x 10" x 10" Container	Polycarbonate Paperboard	No	No	Yes		\$ 0.4		<a href="#">EnvSource.com</a>	Pepper Lab	400026
No F	arkness Chicago	Take-out Container	YC	White PETE 4.5L x 6.5" x 10" x 10" Container	Polycarbonate Paperboard	No	No	No	\$2.49 per 100	\$ 0.25		<a href="#">arkness.com</a>	Pepper Lab	400289
No F	Stalk Market	Container	PSA-802	Clear PETE 1.5L x 6.5" x 10" x 10" Container	PLA	Yes	Yes	No	\$0.80 per 100	\$ 0.22	Arvo Corporation	<a href="#">StalkMarket.com</a>	Pepper Lab	400290
No F	World Condis	Container	WLC-07	Clear PETE 1.5L x 6.5" x 10" x 10" Container	PLA	Yes	No	No	\$0.85 per 100	\$ 0.27		<a href="#">WorldCondis.com</a>	Pepper Lab	
No F	World Condis	Container	WLC-06	Clear PETE 1.5L x 6.5" x 10" x 10" Container	PLA	Yes	No	No	\$0.85 per 100	\$ 0.28		<a href="#">WorldCondis.com</a>	Pepper Lab	
Low F	Choice	Take-out Container	309FT0K62	White PETE 4.5L x 6.5" x 10" x 10" Container	Polycarbonate Paperboard	No	No	No	\$0.99 per 100	\$ 0.22		<a href="#">Choice.com</a>	Pepper Lab	400028
	Armark	Container	Armark	White PETE 1.5L x 6.5" x 10" x 10" Container	Styrofoam	No	No	Unknown	1.84 per 100	Unknown		<a href="#">Armark.com</a>	Pepper Lab	
	Dr Green Packaging	Container	DS-8011	White PETE 1.5L x 6.5" x 10" x 10" Container	Mixed Fiber	No	No	No	\$0.83 per 100	\$ 0.28		<a href="#">DrGreenPackaging.com</a>	Pepper Lab	
	Bridge Ware	Container	EW-1004	White PETE 1.5L x 6.5" x 10" x 10" Container	Resin	Yes	No	No		\$ 0.44		<a href="#">BridgeWare.com</a>	Pepper Lab	
	Bridge Ware	Container	EW-1004V	White PETE 1.5L x 6.5" x 10" x 10" Container	Resin	Yes	No	No		\$ 0.44		<a href="#">BridgeWare.com</a>	Pepper Lab	
	Env Products	Container	EP-102	Clear PETE 1.5L x 6.5" x 10" x 10" Container	Styrofoam	Yes	No	No	\$4.77 per 100	\$ 0.0		<a href="#">EnvProducts.com</a>	Pepper Lab	



[www.ceh.org/disposablefoodware](http://www.ceh.org/disposablefoodware)



# Free Product Testing Available

- Organizations can submit disposable foodware for testing at NO cost
  - Plates, bowls, clamshells, food trays/boats
- Useful information for discussions with suppliers
- Contributes to list of preferred products



To participate, email [foodware@ceh.org](mailto:foodware@ceh.org)



# Letter to/Discussion with Suppliers

- Incentive for manufacturers and distributors to investigate safer alternatives
- Sample language is available
- Create a Race to the Top!





# Use Model Specifications

NY's Guidance document: Goal is to increase sustainable practices in the state'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 wrappers.

- Includes hierarchy of environmentally desirable attributes and excludes products with PFAS and polystyrene
- <https://www.ogs.state.ny.us/greeny/Docs/2018/FoodServiceContainersWrappers.pdf>



The City and County of San Francisco also developed specifications

- [http://mission.sfgov.org/OCA\\_BID\\_ATTACHMENTS/FA50491.pdf](http://mission.sfgov.org/OCA_BID_ATTACHMENTS/FA50491.pdf)



# Specify Non-Fluorinated/ Sustainable Products

- Purchase reusables whenever possible
- Specify products that are certified compostable and that do not contain fluorinated additives
- Avoid molded fiber and polystyrene foodware
- <https://www.ceh.org/campaigns/endocrine-disrupting-chemicals/edc-resources/>



# Communication with Certification and Standards Organizations

- Let certification/standards organizations know that fluorinated products should not be certified as compostable or sustainable
- Thank BPI for taking prompt action to develop and implement new fluorine restrictions





CEH

CENTER for  
ENVIRONMENTAL  
HEALTH

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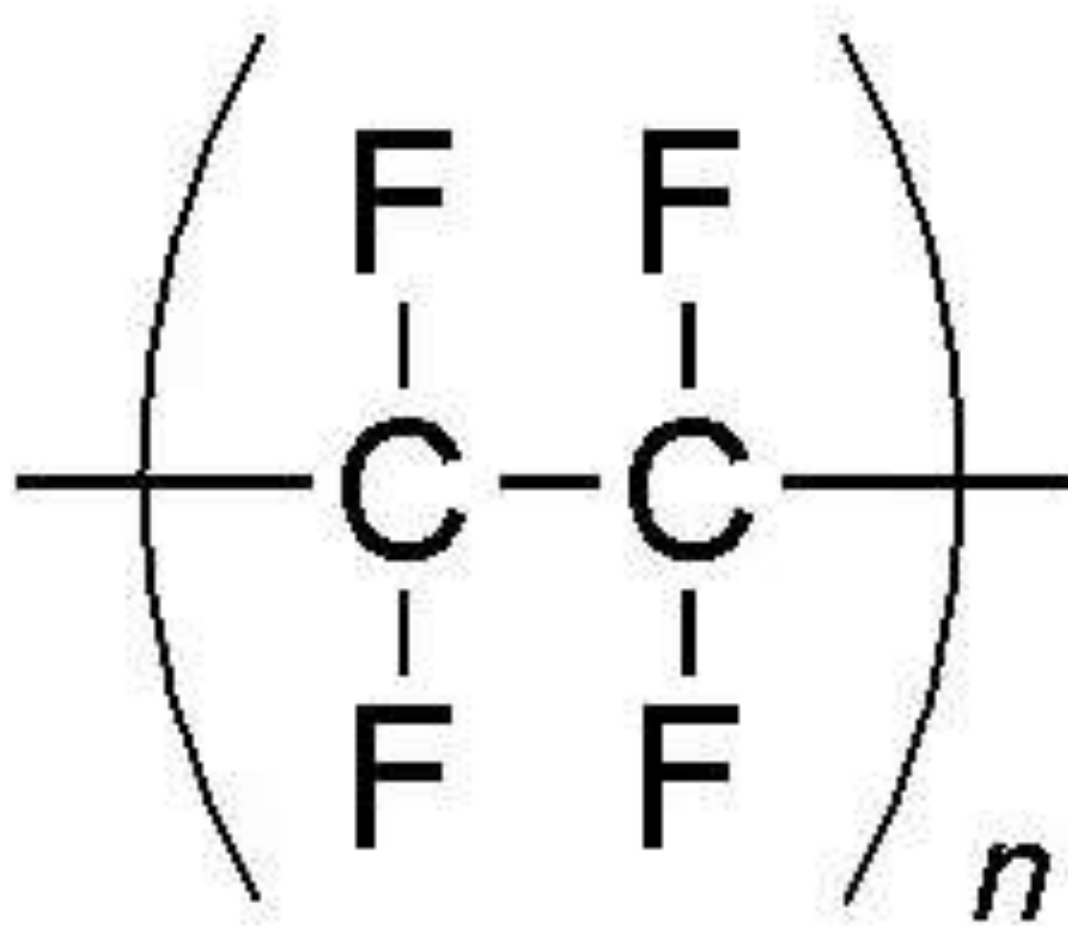
# Local Action: Fluorinated Chemicals in Food Service Ware

Jen Jackson, Toxics Reduction & Healthy Ecosystems Program Manager





# Persistent



# Highly mobile





# Known impacts of certain fluorinated chemicals





# Many sources



Source: Green Science Policy Institute, [www.greensciencepolicy.org](http://www.greensciencepolicy.org). Reproduced with permission.



# PFAS in Food Service Ware





# Climate Action Goal – Zero Waste by 2020



Food and food-soiled paper → green bin





# Compost



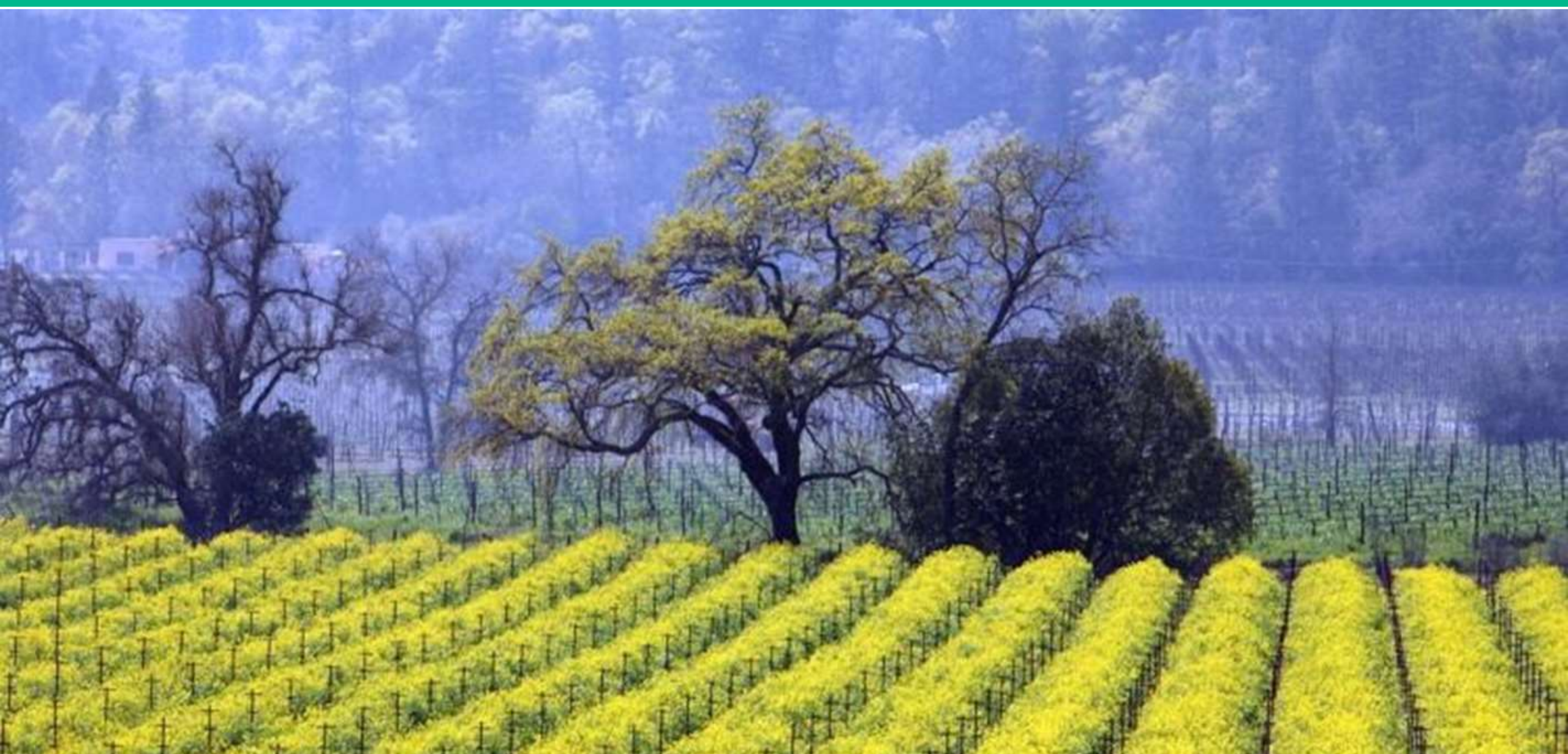
# Final product



Photo courtesy of



# Plant uptake?





# Levers



City  
Procurement

Policy &  
Legislation



# City Purchasing



Tested food service  
ware in  
use at City hospital  
cafeterias.





# Researched Safer Alternatives



# New Contract with Updated Specifications



No PFAS!



# Policy/Legislation





# Thank you!



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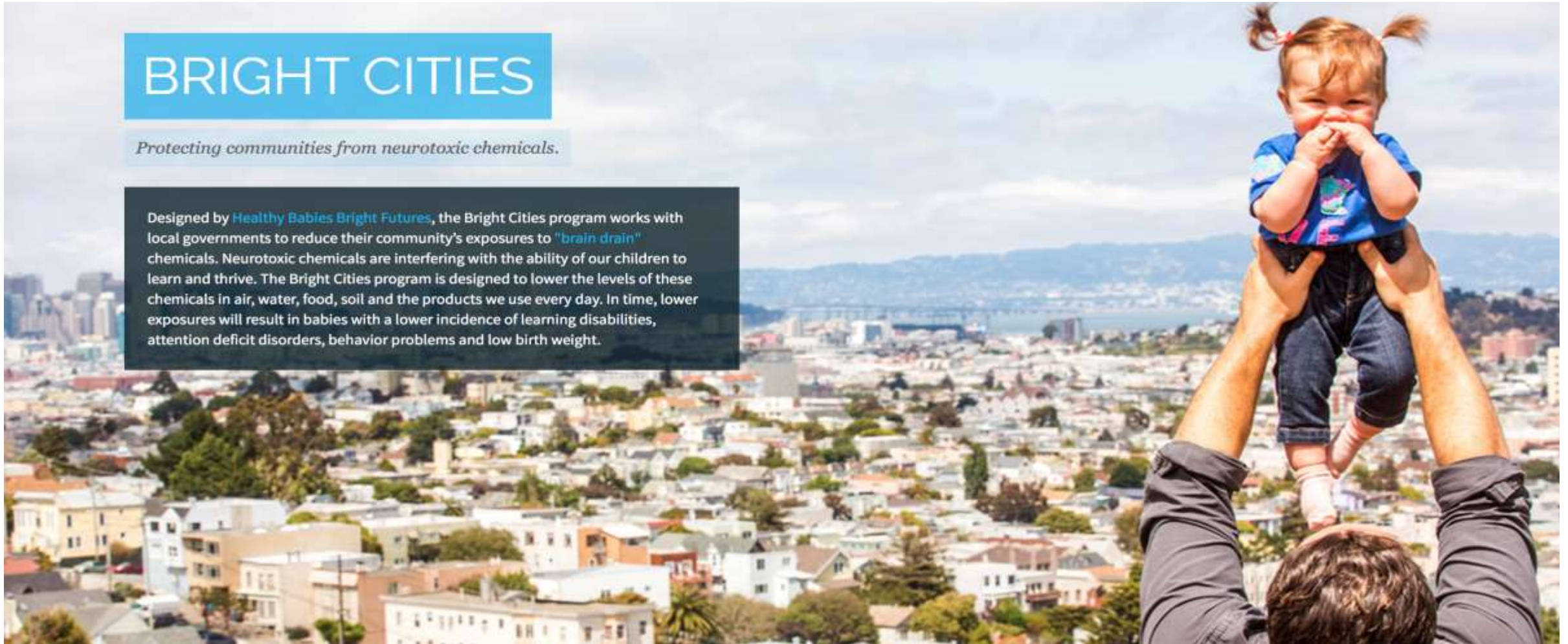
# Join Bright Cities Dearborn, Minneapolis, Salt Lake City, Seattle, Missoula, Anchorage, and Columbia!

Heidi Gerbracht: [hgerbracht@hbbf.org](mailto:hgerbracht@hbbf.org) @HBBForg

## BRIGHT CITIES

*Protecting communities from neurotoxic chemicals.*

Designed by [Healthy Babies Bright Futures](#), the Bright Cities program works with local governments to reduce their community's exposures to "brain drain" chemicals. Neurotoxic chemicals are interfering with the ability of our children to learn and thrive. The Bright Cities program is designed to lower the levels of these chemicals in air, water, food, soil and the products we use every day. In time, lower exposures will result in babies with a lower incidence of learning disabilities, attention deficit disorders, behavior problems and low birth weight.





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**Thank you!**