

Changing World of Foodservice Disposables



Consumers and legislature are becoming increasingly aware of the negative effects of foam on the environment and human health. They are demanding sustainable foodservice alternatives.



More and more states are issuing bans that establishments can no longer sell, offer or possess foam food containers

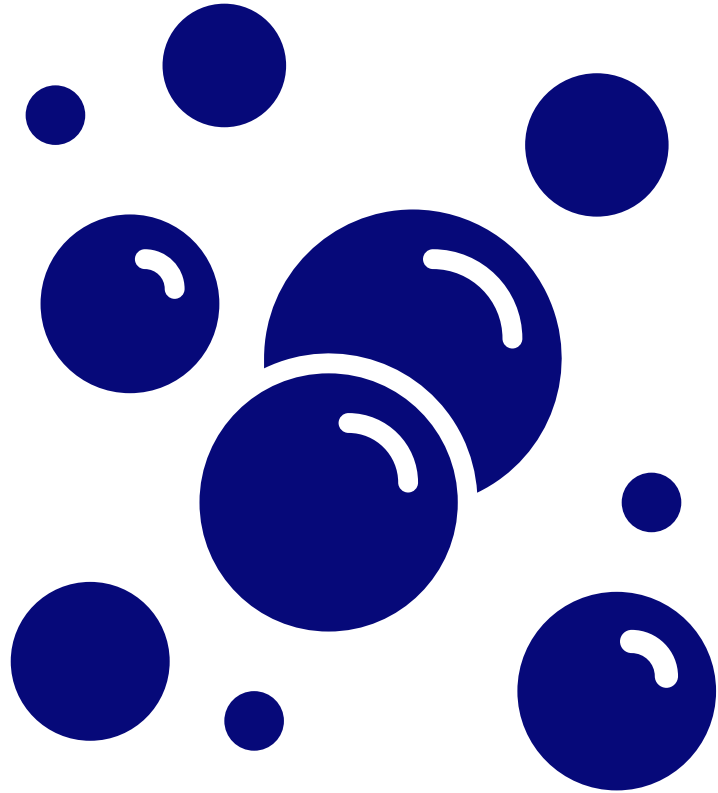


Alternatives need to be eco-friendly, as well as a combination of price and performance.

Sustainability Defined



- The quality of causing little or no damage to the environment & therefore able to continue for a long time.



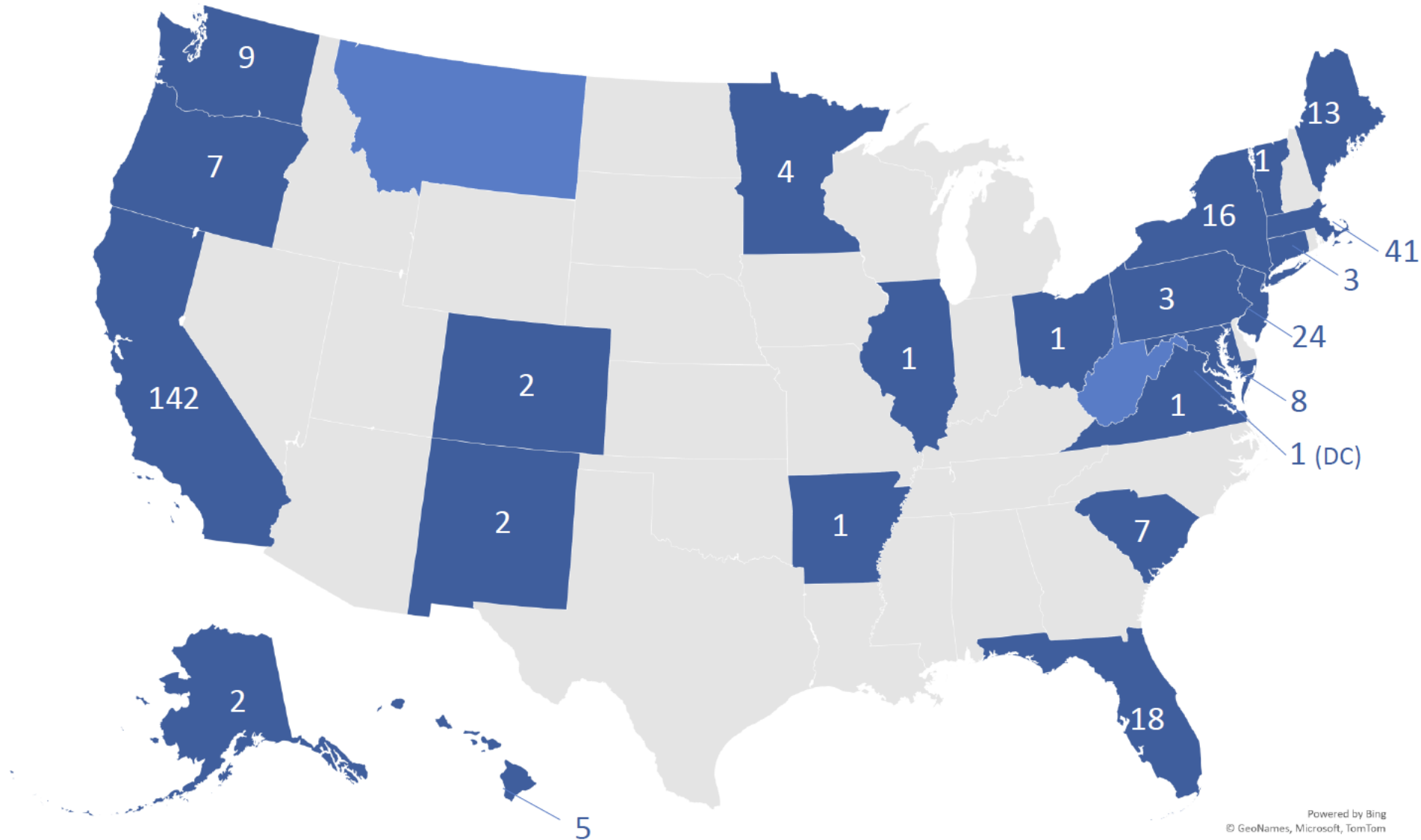
Why is Foam- Polystyrene bad for the environment?

- Foam is not readily recyclable. As foam sits in landfills, the plastic or rubber breaks down into tiny toxic particles. The chemicals contaminate the soil, waterways, and groundwater. The more foam that is thrown away, the more toxic of an environment we create as these chemicals leach into our soil and waterways.

What are the harmful effects of foam?

- Exposure to chemicals commonly found in foam products may cause serious or fatal respiratory disease. These chemicals are powerful irritants to the mucous membranes of the eyes, gastrointestinal tract, and respiratory system.
- As of June 2023, nine U.S. states and one territory have passed legislation to explicitly ban polystyrene foam.

May 2023 - States with Foam Bans Active within Select Cities/Municipalities (Number of Cities/Municipalities Listed Within Each State)



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2023 EPS Bans

311 Cities with Bans
22 States with bans
2 States pending

On May 8, 2023 OR passed legislation to become the 10th state to ban EPS statewide.

Statewide bans:

Colorado – effective Jan 2024

Maine

Maryland

New York

New Jersey

Vermont

Virginia – effective Jul 2023

Washington – effective 2024

Washington DC

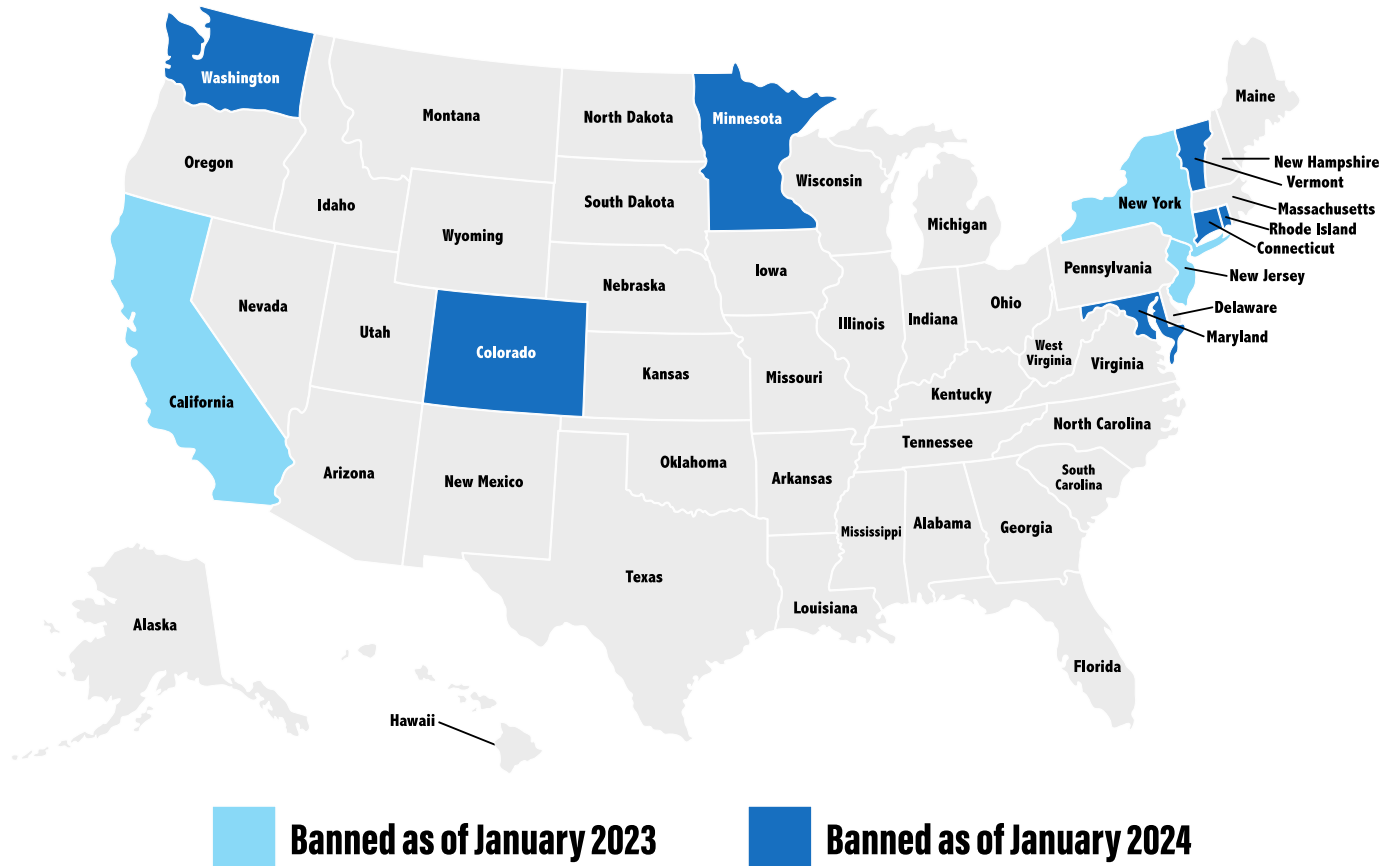
Oregon – effective Jan 2025

What is PFAS?

- PFAS are man-made chemicals that have been used in industry and consumer products worldwide since the 1940s. They have been used in foodservice disposable packaging because they create a barrier that resists grease, water, and oil.

Why is PFAS harmful?

- They are known as 'forever chemicals' as they are extremely persistent in our environment and bodies. They can lead to health problems such as liver damage, thyroid disease, obesity, fertility issues and cancer.
- As of January 2023, PFAS bans are in effect in California and New York. By January 2024, bans will take effect in an additional seven states—Washington, Vermont, Connecticut, Colorado, Maryland, Minnesota and Rhode Island.





Eco-Friendly Food Packaging Alternatives

Compostable

- Bagasse
- Molded Fiber
- Paper
- Bamboo
- PLA/plant starch

Recyclable

- Polystyrene #6
- Polypropylene #5
- Aluminum Foil
- Expanded Polystyrene Foam
- Unsoiled paper

Bagasse

Pros:

- Made from leftover by-product of sugarcane
- Sustainably sourced with little to no economic impact
- 100% naturally compostable (*not in landfills)
- Single season, rapidly renewable source
- Grease and water resistant for foodservice
- Strong and durable, microwave and freezer safe
- Heat tolerant up to 95 degrees
- Highly insulating for fresher, hotter foods
- PFAS-Free options are available

CON:

- Poor steam control which results in soggy foods
- More expensive than other eco-friendly alternatives

Molded Fiber

- Made from recycled paperboard, newsprint, and other fiber based materials including bagasse
- 100% compostable, recyclable, safely incinerated
- Absorbs grease and keeps fried foods fresh and crisp
- Zero emissions of toxic materials upon recycling
- Strong and durable, pre-formed for lower labor associated with folding paperboard
- Heat safe but absorbent nature is prone to soaking
- PFAS-Free Options are available

Paperboard

- 100% naturally compostable (*not PE lined, not in landfills) and recyclable where possible
- Made from naturally renewable resources, often using post-consumer recycled material with SFI certification
- Strong and sturdy for a variety of uses
- Heat tolerant, and freezer safe








Aluminum

- Infinitely recyclable
- Lightweight, cost effective
- Best option with hot foods for its insulating properties
- Does not absorb moisture – good for strength, bad for condensation of hot foods
- Ideal option for kitchen use, ex. steam pans, storage, or hot food delivery

PLA / Plant Based Plastic

- Made from polylactic acid, a plant starch usually sourced from corn starch rather than crude oils
- Manufactured from renewable resources and easily biodegrades reducing the impact of pollution
- Can be heat sensitive, softening when too hot (max of 110 degrees) – freezer safe, not microwave safe
- Properties very similar to plastic for a variety of uses/strength

Alternatives to Styrofoam

MATERIAL	POLY COATED PAPER	ALUMINUM	POLYPROPYLENE	BAGASSE	MOLDED FIBER	PLA-LINED PAPER	PLA
OVERVIEW	Paper coated with Polyethylene by an extrusion coating process which provides moisture and grease resistance	Durable metal resistant to grease and oils while maintaining food's true flavor	Microwavable black or white containers in square, rectangle, round and oval shapes. Leak resistant, stackable and dishwasher safe	Made from leftover byproducts of the sugar or wheat extraction process	Pulp that is typically made of recycled paperboard, corrugated cardboard and/or newsprint	Polylactic Acid that is created by combining paper with plant-based materials, rather than petroleum	Polylactic Acid is a fully-renewable resource extracted from corn
GREEN CONTENT	▶ None	▶ None	▶ None	▶ Renewable Resource	▶ Post-Consumer	▶ Renewable Resource	▶ Renewable Resource
GREEN PRODUCTS	▶ Cups ▶ Containers ▶ Plates ▶ Bowls	▶ Containers ▶ Foil	▶ Containers	▶ Containers ▶ Cutlery ▶ Plates ▶ Bowls	▶ Containers ▶ Plates ▶ Bowls ▶ Trays	▶ Cups ▶ Containers	▶ Cups ▶ Containers ▶ Cutlery
BEST FOR	▶ Hot Items ▶ Cold Items	▶ Hot Items ▶ Cold Items	▶ Hot Items ▶ Cold Items	▶ Hot Items ▶ Cold Items	▶ Hot Items ▶ Cold Items	▶ Hot Items ▶ Cold Items	▶ Cold Items
FREEZING POINT	0 °F	-20 °F	0 °F	20 °F	20 °F	32 °F	32 °F
DISTORTION POINT	180 °F	400 °F	250 °F	250 °F	250 °F	185 °F	120 °F
END-OF-LIFE OPTIONS	▶ Landfill ▶ Incinerator	▶ Recyclable	▶ Recyclable ▶ Reusable	▶ Compostable	▶ Compostable ▶ Recyclable	▶ Compostable	▶ Compostable ▶ Reusable
END-OF-LIFE RECOMMENDATION	 Incinerator	 Recycle wherever Aluminum is collected	 Recycle where #5 is collected	 Compost at a commercial facility	 Compost at a commercial facility	 Compost at a commercial facility	 Compost at a commercial facility

UNWRAPPING THE MYSTERY OF FOOD PACKAGING



Recyclable or Post-Consumer Recycled? Biodegradable or Compostable? Landfill Waste or Carbon Footprint? What's Best?



Across all end-use segments, **60 to 70%** of consumers said they would pay more for sustainable packaging.

[\[source\]](#)



45%

Of municipal waste by weight in the US landfills is from food and food packaging.



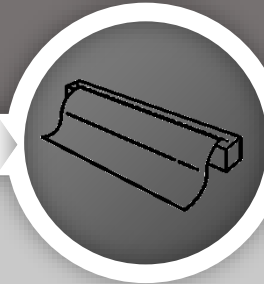
80%

Of all waste currently in landfills could be recycled.



500

Disposable cups a year are used by the average US office worker.



1.3%

Of landfill waste in the US comes from aluminum, because it is infinitely recyclable.



0%

Of coated paper cups, pizza boxes, waxed paperboard, or paper food wrap is recyclable due to the coating or food saturation.



1.9x

Is the 10 year growth rate expected for 100% compostable / biodegradable plates made from bagasse.



40%

Of the US population has access to municipal curbside composting programs.



65%

Less energy is required to produce compostable bioplastics than traditional plastics.

GREEN OPTIONS

Compostable- Made from materials that break down into elements found in nature, leaving behind fuel and nutrients

Bagasse

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- Grease and water resistant for foodservice

Molded Fiber

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Paper

- Made from naturally renewable resources, often using post-consumer recycled material with SFI certification
- Strong and sturdy for a variety of uses

PLA/plant starch

- Made from polylactic acid, a plant starch usually sourced from corn starch
- Similar to plastic for a variety of uses/strength



GREEN OPTIONS

Recyclable- products do not need to be disposed in landfills and are repurposed into something new

- Polystyrene #6
- Polypropylene #5
- Aluminum Foil
 - Infinitely recyclable and cost effective
 - Best option with hot foods for its insulating properties, but does not absorb moisture
- Expanded Polystyrene Foam
 - Made of expanded polystyrene and 70% air
 - Best insulating properties for hot foods, though condensation is an issue long term
- Unsoiled paper





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Decoding PLASTIC CODES



POLYETHYLENE TEREPHTHALATE (PET)

Safety Status: can leach endocrine disruptors

Present in: bottles & containers for drinks, water, detergents, cosmetics

Recyclability: Highly recyclable



HIGH DENSITY POLYETHYLENE (HDPE)

Safety Status: use with caution (do not heat)

Present in: bottles for milk, water, juice, cleaning supplies, shampoo; plastic bags

Recyclability: Highly recyclable



POLYVINYL CHLORIDE (PVC)

Safety Status: contains toxic phthalates

Present in: plastic toys, lunch boxes, blister packs, faux-leather purses, shoes and jackets.

Recyclability: Highly recyclable



LOW DENSITY POLYETHYLENE (LDPE)

Safety Status: low toxin, use with caution

Present in: juice and milk cartons, plastic bags, plastic wraps, squeezable bottles

Recyclability: not recycled often



POLYPROPYLENE (PP)

Safety Status: use with caution (do not heat)

Present in: straws, containers for yogurt, deli foods, medications and takeout meals

Recyclability: Highly recyclable



POLYSTYRENE OR STYROFOAM (PS)

Safety Status: use with caution (do not heat)

Present in: cups, plates, bowls, take-out containers, cafeteria trays, cup lids

Recyclability: not easy to recycle



OTHER (SHOULD BE AVOIDED)

Safety Status: high toxicity, may contain BPA or BPS

Present in: any plastic product

Recyclability: not easy to recycle