SURFRIDER FOUNDATION MAINE

February 20, 2019

Good afternoon Senator Carson, Representative Tucker, and distinguished members of the Environment and Natural Resources Committee: my name is Melissa Gates. I am a resident of Cushing and I am offering testimony in support for LDs 289, 505 and 621 on behalf of the Surfrider Foundation Maine Chapter and its thousands of supporters, members and volunteers who agree with the intents of these bills to mitigate needless pollution from disposable polystyrene food containers and wares.

While styrene is naturally occurring and safe for consumption in modest amounts, polystyrene (PS) is a type of plastic manufactured from non-renewable fossil fuels and synthetic chemicals that is created by chemically linking high concentrations of molecules of the compound styrene into long chains. PS is commercially available as both a rigid form and after it has been expanded into a foam by the addition of gas bubbles. Colloquially, such expanded polystyrene (EPS) is often referred to as Styrofoam, which like Kleenx, is a company brand name that has been applied to inclusively describe all products made using EPS.

Most human health concerns around the use of PS and EPS in food service items stem from its manufacture and worker safety, and the ingestion of residual components that remain in finished materials via toxic transfer into food or drink to which it comes into contact.[1-4]

Styrene concentrations detected in food are generally well below values that would cause acute health effects. However, significant concern remains regarding long-term, low-level exposures. Styrene is "reasonably anticipated to be a human carcinogen" by the US National Toxicology Program.[5] In 2018, the World Health Organization's International Agency for Research on Cancer (IARC) reclassified styrene from Group 2B "possibly carcinogenic" to Group 2A "probably carcinogenic."[6] These and similar assessments are based on extensive reviews of available scientific research and are regularly updated in response to new evidence.

Additionally, the World Health Organization has established a guideline value of 0.02 parts per million (ppm) for styrene in drinking water.[7] The US EPA has set a somewhat higher maximum contaminant level (MCL) for styrene in public water systems, which is enforceable to a standard at 0.1 ppm.[8] These values are reasonable starting benchmarks for considering what might be "safe" concentrations for repeated, long-term exposures for human populations.

The analytical methods for detecting styrene are well-established and highly sensitive. From published reports, it is clear that "food grade" PS contains readily quantifiable amounts of styrene and that this styrene can be leached into food products.[3] The amount of residual styrene in PS varies widely depending on the quality and source of the material, but is limited to less than 5000 ppm by current federal regulations.[9] Similarly, the amount of styrene extracted into contained food or drink depends on

several factors and appears to be maximized by high temperatures, food or drink with high fat content, increasing contact times, and containers with large surface area relative to volume.[10, 11]

A number of surveys on commercial food products packaged in PS have consistently shown maximum styrene levels on the order of 0.1 to 0.2 ppm, which are greater than the EPA limits for public drinking water.[3, 12] It should be noted that most samples analyzed had significantly lower values. For instance, in a 1983 UK study, only 23% of foods sampled had styrene levels above 0.01 ppm.[12]

However, another study showed that 200 mL of boiling water poured into certain 250 mL EPS cups and allowed to sit capped for 60 minutes extracted an average of 0.017 ppm of styrene, approaching the WHO guidance level.[11] This situation is perhaps analogous to the dispensing of a hot beverage such as tea or coffee into a disposable EPS takeout cup.

Therefore, we know that under reasonable use conditions, it is possible for PS containers to transfer enough styrene into food or drink to exceed regulatory limits and/or safety guidance for drinking water. Uncertainty in assessing the risks of low-dose, long-duration chemical exposures is cause for a degree of conservatism to protect human health.

We also know that the amount of plastic debris in the ocean is truly staggering. A 2015 study published by the international journal *Science* estimates that *17 billion pounds* of plastic marine debris enters the ocean annually at the hands of only 192 countries with coastal access.[13]

Abigail Barrows, Maine resident and microplastics principal investigator for Adventure Scientists, reported that a "randomly taken 1 liter of surface water sample from Maine marine or freshwater environments average 3 pieces of microplastics."[14] She notes what we know and science categorically backs-up: source reduction for this type of pollution is key in addressing the health of our waters.

Because it is lightweight and floats, we know that EPS waste is a huge environmental detriment, as it breaks apart with little provocation and is easily swept from streets, through storm drains, and into the waterways. Foam packaging quickly becomes microplastics and embeds itself in soils and waters where comprehensive cleanup is impossible.

We know that PS degrades water quality with toxins and injures, kills and contaminates sea life; often mistaken for food, plastics that are ingested cause significant health

detriments to marine creatures, often leading to death.[15] For humans who eat sea life, significant health risks are imposed from plastic particulates inherent in those animals that are then subsequently ingested.

We also know that plastic debris litters our environment, beaches and waters, not only wreaking havoc on the species who rely upon a clean environment to live but also reducing its appeal to residents and tourists and requiring continual and costly "cosmetic" cleanup, a process which often exacerbates the problem of breaking down EPS into tiny particulates. Recreation and tourism is the single largest contributing sector to Maine's ocean economy;[16] therefore we know that a healthy ocean and coastal ecosystem is vital for the health of our environment, our quality of life and our economy. LDs 289, 505 and 621 offer Maine the opportunity to take action now to mitigate this needless yet pervasive, highly toxic material.

A common concern of legislators when considering a ban on cheap, disposable products is the fiscal impact to potentially affected business owners. Former Portland City Councilor, Ed Suslovic, and multiple food establishments in Portland and Freeport where bans on this toxic food ware have been in effect for some time, can further attest to the fact that banning PS has not bankrupted them nor been causative of significant negative financial stress.

We know that while there are no EPS manufacturers in Maine, we are fortunate to have a maker of fiber-based food service wares, Huhtamaki[17] in Waterville, which provides economical alternatives to PS that are currently used in hospitals, schools and other Maine institutions and businesses, as a step in the right direction. But to truly change consumer behaviors, we know we must move away from single-use items, and fortunately, more sustainable and less risky alternatives to disposable PS food service wares in the way of reusable goods are readily available and already widely in use.

We also know that EPS food containers are not recycled in Maine, and regardless, that very often the used food containers cannot be recycled at all, anywhere, because they are too tainted with food waste to be processed. Therefore, we know that recycling is not the answer.

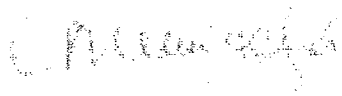
In other US states where similar legislation is advancing, many food establishments concerned about alternative product costs, thermal retentiveness and other performance features are turning to groups like the Surfrider Foundation, who have community education programs in place, such as Ocean Friendly Restaurants,[18] which helps educate the community about the need to move away from the single-use mindset and toward reuse and how individuals can help by bringing their own take-out containers. From EPS, PS, straw and checkout bag bans to fee regulations, the consumer paradigm is shifting toward reuse, and communities all across the world are rising to the occasion to demand a shift in laws, products used and responsibility for manufacturers and businesses who distribute those toxic, environmentally detrimental goods to customers.

We know that PS and EPS food packaging and wares need to be banned to protect human health and the environment. Maine can rise to the occasion by advancing these bills, and setting forth a standardized approach for all our cities and towns to follow.

The scientific evidence is sufficient for me to personally avoid using PS and EPS containers and utensils whenever possible, and to recommend to my friends and family that they do the same. The Surfrider Foundation thanks Representatives Stanley Zeigler, Anne Carney and Deane Rykerson for introducing these bills, and we strongly urge this committee to do what is right for Maine people – for our health, for our visitors, for the ocean, waves & beaches and for the environment – by passing these three bills out of committee with an Ought To Pass recommendation.

Thank you for your consideration.

Sincerely,



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