



## POLYSTYRENE FACT SHEET

### Polystyrene threatens the health of San Francisco Bay.

- Plastic food service containers are a major component of urban litter. These products are usually polystyrene or expanded polystyrene or polystyrene foam (most commonly known as Styrofoam), and often wind up in the Bay, where they leach toxins into the water.
- Californians use approximately 56,000 tons of expanded polystyrene products each year. This is equivalent, in volume, to over eight Empire State Buildings.<sup>1</sup>
- Take-out food and beverage containers, such as Styrofoam cups, are some of the most ubiquitous trash items fouling the Bay and local waterways. Polystyrene foam and plastic food packaging are also one of the biggest culprits in clogging municipal storm drains.
- Polystyrene foam is the second most abundant form of beach debris in California.<sup>2</sup>

### Polystyrene foam threatens the health of humans and wildlife.

- Studies have found that styrene, a cancer-causing and neurotoxic component of polystyrene, can leach into food and drink, posing a human health risk.<sup>3</sup>
- The federal government recently declared styrene to be a likely carcinogen.<sup>4</sup>
- Styrene can be found in air, water, and soil after release from the manufacture, use, and disposal of styrene-based products.<sup>5</sup>
- Polystyrene breaks down small pieces that marine animals easily mistake for food.<sup>6</sup>
- Polystyrene foam products pose a health threat to wildlife. At least 267 marine species worldwide have been reported to have been affected by polystyrene litter.<sup>7</sup> Wildlife that consumes polystyrene suffer from loss of appetite, reduced nutrient absorption, and starvation.<sup>8</sup> **Recycling polystyrene foam has been ineffective.**

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1 *An Overview of Expanded Polystyrene Food Containers in Los Angeles County*. County of Los Angeles, Oct. 2008. Web. 11 June 2012.

2 S. Moore et al., (2001) "Composition and Distribution of Beach Debris in Orange County, California," *Marine Pollution Bulletin* 42.3: 241-245. Plastic pellets used to manufacture plastic products was the most abundant type of debris.

3 National Toxicology Program, National Institute of Environmental Health Sciences, "The Report on Carcinogens, Twelfth Edition," June 2011: <http://www.niehs.nih.gov/about/materials/styrenefs.pdf>.

4 Agency for Toxic Substances & Disease Registry, U.S. Department of Health and Human Services: ToxFAQs for Styrene, September 2007: <<http://www.atsdr.cdc.gov/tfacts53.pdf>>; International Agency for Research on Cancer, "Overall Evaluations of Carcinogenicity to Humans," <http://monographs.iarc.fr/ENG/Classification/crthallist.php>. J.L. O'Donoghue, *Neurotoxicity of Industrial and Commercial Chemicals: Vol. 2*, CRC Press, Inc., Boca Raton, Florida, 1985, pages 127-137.

5 J.G.B. Derraik, "The pollution of the marine environment by plastic debris: a review" *Marine Pollution Bulletin* 44 (2002): 843; Gregory, M.R., Ryan, P.G. "Pelagic plastics and other seaborne persistent synthetic debris: a review of Southern Hemisphere perspectives" in Coe, J.M. Rogers, D.B. (Eds.), *Marine Debris—Sources, Impacts and Solutions*, (1997) Springer-Verlag, New York, pp. 4 9-66.

6 City and County of San Francisco, *Food Service Waste Reduction Ordinance* (Ordinance No 295-06).

7 *An Overview of Expanded Polystyrene Food Containers in Los Angeles County*. County of Los Angeles, Oct. 2008. Web. 11 June 2012.

8 California Integrated Waste Management Board (CIWMB). *Use and Disposal of Polystyrene in California* (2004).



- Recycled Styrofoam has very little market value and can only be used to make a small range of products, most of which cannot be recycled themselves.<sup>9</sup>
- Less than one percent of polystyrene foam food ware is recycled in California, making recycling a futile and costly effort.
- Recycling facilities will only recycle polystyrene foam if it is clean, and residents are expected to take their washed foam containers to the recycling centers themselves – Bay Area cities are not collecting this product curbside.
- Even when placed in trash or recycling bins, these lightweight items are often picked up by wind and blown into the gutters – where they flow into creeks and storm drains and then into the Bay and the ocean.

#### **Alternative containers are better for the environment.**

- Affordable alternatives include paper products with recycled content and re-useable, washable cups and containers.
- A wide variety of plastic-like containers made from non-petroleum-based sources such as corn, potato, sugarcane, and other natural starches are now available. Combined with an effective commercial compost program, these alternatives can reduce landfill loads and polystyrene and petroleum-based plastic pollution in the Bay and ocean.
- Business leaders recently testified in Sacramento that the increase in alternative food ware is being driven by consumer demand. As demand increases, prices will go down.

#### **Litter can be prevented by implementing policies that ban commonly littered items.**

- The most effective way to reduce litter is by preventing it at the source.
- Public education on its own will not reduce litter, but is essential to successfully implementing a ban.
- Several cities around the Bay Area have taken action on polystyrene food containers. There are now 50 cities in California and more than 20 in the Bay Area that have banned the use of polystyrene foam. The Regional Water Quality Control Board has recognized product bans as an effective way to prevent trash pollution in our waterways.<sup>10</sup>

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<sup>9</sup> California Regional Water Quality Control Board San Francisco Bay Region. Municipal Regional Stormwater NPDES Permit (Order R2-2009-0074). October 14, 2009, Provision C-10, pages 84-87.

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