

March 11, 2011

**Styrene Industry Statement in Response to Congressional Communications
Questioning the Safety of Polystyrene Cups:**

**Polystyrene Cups are Safe; National Toxicology Program Has
Taken No Position on Styrene's Carcinogenicity**

Contrary to the false statements made in a March 8 "Dear Colleagues" memorandum and letter sent by Cong. Earl Blumenauer (D-Ore.) to his U.S. House of Representatives colleagues, polystyrene cups, plates and utensils are entirely safe to use. Furthermore, the U.S. National Toxicology Program (NTP) has taken no formal position on styrene's potential human carcinogenicity.

Polystyrene foam – often erroneously called Styrofoam™¹ – and hard polystyrene plastic are FDA-accepted as safe for food-contact use. In addition, there is no validated scientific evidence that they pose any human health risk. These foodservice products have been used safely for more than 50 years without adverse health effects.

The NTP currently is considering whether or not to classify styrene – the basic chemical from which polystyrene is made -- as "reasonably anticipated to be a human carcinogen," but has made no final decision in that regard. We believe that such a listing would be completely unwarranted because the large and still growing body of scientific evidence points away from any human cancer concern for styrene, even among those who work directly with the chemical.

The European Union recently concluded in its risk assessment report on styrene² that "there is no clear and consistent evidence for a causal link between specific cancer mortality and exposure to styrene," and that "no further risk management activity under (the REACH program) is required."

A recently published review by a panel of internationally recognized scientists reports: "The available epidemiologic evidence does not support a causal relationship between styrene exposure and any type of human cancer." The paper³ appears in the peer-reviewed *Journal of Occupational and Environmental Medicine*, Volume 51 (2009), published by the American College of Occupational and Environmental Medicine.

Previously, the Harvard Center for Risk Analysis completed a styrene risk analysis⁴, which found no cause for concern from exposure to styrene through materials used in food contact or from foods in which styrene occurs naturally, including cinnamon, strawberries, coffee and beef.

¹ Styrofoam is a Dow Chemical Co. trademark for insulation.

² European Union Risk Assessment Report, Styrene, *Draft for Publication, June 2008*, and its Annex XV Transitional Dossier http://echa.europa.eu/chem_data/transit_measures/annex_xv_trans_reports_en.asp.

³"Epidemiologic studies of styrene and cancer: A review of the literature," Paolo Boffetta, M.D., M.P.H., International Prevention Research Institute, Lyon, France; Hans-Olav Adami, M.D., Ph.D., and Dimitrios Trichopoulos, M.D., M.S., Ph.D., Department of Epidemiology, Harvard School of Public Health, Boston, Mass.; Philip Cole, M.D., Dr.P.H., School of Public Health, University of Alabama, Birmingham, Ala., and Jack Mandel, Ph.D., M.P.H., Dalla Lana School of Public Health, University of Toronto, Ontario, Canada.

⁴ "A Comprehensive Evaluation of the Potential Health Risks Associated with Occupational and Environmental Exposure to Styrene," *Journal of Toxicology and Environmental Health*, Part B, 5:1-263, 2002.

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**Responses to Additional Claims Made in Congressional Communications
Questioning the Safety of Polystyrene Cups**

1. Q: Does styrene leach from polystyrene containers into liquids and fats “resulting in numerous negative health impacts?”

A: Polystyrene foam and hard polystyrene plastic are FDA-accepted as safe for food-contact use, and there is no validated scientific evidence that they pose any human health risk. It is common knowledge in the food-packaging industry that foodservice containers, including polystyrene and others, have materials that can migrate into the contents under normal use. Since the early 1990s, the polystyrene industry has conducted tests on styrene migration; the results have shown that these very low styrene levels pose no health concern.

2. Q: Is it true that during manufacture of polystyrene foodservice ozone-depleting chemicals, including benzene and hydro-fluorocarbons, can enter the environment?

A: The term “ozone-depleting chemicals” is usually code for chlorofluorocarbons (CFCs). Polystyrene foam foodservice products are not manufactured with CFCs. According to Judd Alexander's book *In Defense of Garbage*, the last U.S. PS foam manufacturer ceased using CFCs in February 1990. In any case, the use of CFCs in the United States has been prohibited by the Clean Air Act since 1994.

3. Q: Once polystyrene foam is discarded, is it true that it requires 500 years to biodegrade, during which time it can leach styrene into groundwater?

A: This is what we call the landfill myth. In theory, biodegradation sounds wonderful. We all like to think that litter and solid waste problems could be solved by allowing materials to biodegrade, but seldom are answers to complex questions so simple. In fact, engineers design modern landfills to discourage biodegradation by removing oxygen, sunlight and water. Because biodegradation can lead to the release of harmful methane gas or leachate, which can, indeed, contaminate groundwater, it is preferable to place non-biodegradable rather than biodegradable products in landfills, although obviously landfilling is a last resort for disposal. Ironically, one beneficial feature of polystyrene foam is that it does not biodegrade significantly. According to Dr. William L. Rathje, a leading archaeologist and solid waste authority, “[t]he fact that plastic does not biodegrade, which often is cited as one of its great defects, may actually be one of its greatest virtues.” For more information, see: William J. Rathje, “Rubbish!,” *The Atlantic Monthly* (December 1989): 103. See also: William J. Rathje and Cullen Murphy, “Five Major Myths about Garbage, and Why They’re Wrong,” *Smithsonian* (July 1992): 5. More information is available in an American Chemistry Council brochure, “Take a Closer Look at Polystyrene Packaging,” available at http://www.americanchemistry.com/s_plastics/doc.asp?CID=1861&DID=7206