

March 23, 2011

## **Styrene Industry Statement in Response to Congressional Letter Questioning the Safety of Polystyrene Foodservice:**

### **Polystyrene Foodservice is Safe for Consumer Use**

Polystyrene cups, plates and utensils are entirely safe to use, contrary to the false statements made in a March 14 letter sent to U.S. House of Representatives Republican leaders by a group of House Democrats.

Polystyrene foam – often erroneously called Styrofoam™<sup>1</sup> – and hard polystyrene plastic are FDA-accepted as safe for food-contact use<sup>2</sup>. In addition, there is no validated scientific evidence that they pose any human health risk. These products, which are made from the basic chemical styrene, have been used safely for more than 50 years without adverse health effects.

Potential health risks from styrene have been studied extensively for many years. The large and still growing body of scientific evidence points away from any human health concern for people who use any of the thousands of useful products made from it.

Several years ago, the Harvard Center for Risk Analysis completed a styrene risk analysis<sup>3</sup>, 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 (which is very rich in styrene), strawberries, coffee and beef.

More recently, the European Union concluded in its risk assessment report on styrene<sup>4</sup> 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 2009 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 paper<sup>5</sup> appears in the peer-reviewed *Journal of Occupational and Environmental Medicine*, Volume 51 (2009), published by the American College of Occupational and Environmental Medicine.

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<sup>1</sup> Styrofoam is a Dow Chemical Co. trademark for insulation.

<sup>2</sup> U.S. Food and Drug Administration food contact notification listings for styrene as of Dec. 12, 2008: 21 C.F.R. Parts 172.515, 172.616, 173-20, 173-25, 173.70, 175.105, 175.125, 175.300, 175.320, 175.380, 175.390, 176.170, 176.180, 177.1010, 177.1020, 177.1030, 177.1040, 177.1050, 177.1200, 177.1210, 177.1400, 177.1630, 177.1635, 177.1640, 177.1810, 177.1820, 177.1830, 177.2260, 177.2420, 177.2600, 177.2710, 178.2800, 178.3610, 178.3790, 179.45, 181.30, and 181.32.

<sup>3</sup> “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.

<sup>4</sup> 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](http://echa.europa.eu/chem_data/transit_measures/annex_xv_trans_reports_en.asp).

<sup>5</sup> “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.

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### **Responses to Additional Claims Made in Congressional Letter Questioning the Safety of Polystyrene Foodservice**

1. Q: Does styrene leach from polystyrene containers into foods and liquids, resulting in “negative health impacts,” as the letter claims?  
  
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: Once polystyrene foam is discarded, is it true that “polystyrene chemicals can leach into groundwater, jeopardizing water quality,” as the letter claims?  
  
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](http://www.americanchemistry.com/s_plastics/doc.asp?CID=1861&DID=7206)
  
3. Q: What about statements in the letter concerning health effects during the “manufacturing process” or from styrene “that leaches into food and liquids”?  
  
A: Like many industrial chemicals, styrene exposure at high levels can produce acute health effects. Accordingly, styrene use in manufacturing processes is tightly regulated by the federal government, including the U.S. Occupational Safety and Health Administration. The U.S. Department of Health and Human Services publishes an Occupational Health Guideline for Styrene, which provides extensive information in easy-to-understand form on health hazards; chemical and physical properties; monitoring and measurement procedures; respiratory protection and other personal protective equipment; sanitation; operations and controls; emergency first aid procedures, and spill, leak, and disposal procedures. You may download this document from the internet at <http://www.cdc.gov/niosh/topics/styrene/>. However, styrene used in manufacturing processes has nothing to do with the end-use products, including polystyrene foodservice, which as we said is confirmed by the U.S. Food and Drug Administration as safe for food-contact use. And there is no evidence whatsoever to support the letter’s ridiculous assertions that eliminating polystyrene foodservice would “result in fewer lost work days and lower health insurance costs for the House and its staff” or less risk to the “health of constituents and visitors to the Hill who eat in the cafeteria...”