

July 24, 2006

**Plastics Foodservice Packaging Group  
Statement on Safety and Health Aspects  
of Clear (Solid) and Foam Polystyrene Foodservice Products**

Polystyrene that is used to make hot and cold drink cups is made up of very large and inert molecules that are non-toxic and do not migrate readily into drinks.

The U.S. Food and Drug Administration (FDA) regulates the safety of food-contact packaging. This responsibility includes setting standards for minimizing residual materials present in packaging. FDA regulations allow the use of polystyrene as a food-contact packaging material. Polystyrene can contain low levels of residual styrene and ethylbenzene from the manufacturing process. Since the early 1990s, the polystyrene industry has conducted tests and provided the FDA with data that demonstrates that the minor amount of styrene and ethylbenzene that migrate out of food-contact styrenic polymers do not pose a health risk.

*FDA Tests Show Polystyrene Foodservice is Safe for Consumers*

It is common knowledge in the food-packaging industry that foodservice products have materials that can migrate into the contents under normal use. Clear solid polystyrene foodservice products, sometimes referred to as oriented polystyrene (OPS), and foam polystyrene foodservice products, sometimes referred to as expanded or expandable polystyrene (EPS), are products that have been tested and deemed safe for consumer use.

The Society of the Plastics Industry (SPI) Polystyrene Work Group, a subcommittee of SPI's Food, Drug, and Cosmetic Packaging Materials Committee, has completed tests of both styrene and ethylbenzene migration for food-contact styrenic polymers. These tests, conducted for ethylbenzene in 1993 and for styrene in 1997 and updated by the Polystyrene Packaging Council's PS Technical Committee in 2002 (*Update: The Safety of Styrene-Based Polymers for Food Contact Use*), have been submitted to FDA's master file and show that the maximum amount of these substances that could migrate from PS food-contact packaging is very small and presents no health and safety concerns.

The 2002 test results showed a four-orders-of-magnitude (10,000 times) safety factor when comparing the estimated daily intake (EDI) exposure to styrene from the use of polystyrene food-contact

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articles (calculated to be 9 micrograms per person per day) with the acceptable daily intake (ADI) value of styrene (calculated to be 90,000 micrograms per person per day).

Using measured as well as calculated styrene migration values, an estimate of the concentration of styrene in the diet resulting from all uses of styrene-based food-contact polymers was calculated. Based on the acceptable daily intake (ADI) and the EDI for styrene, it is concluded that the use of styrene-based polymers for food-contact surfaces presents no reason for any health or safety concerns.

*Harvard Center for Risk Analysis Independent Study Concludes No Cause for Concern for the General Public from Exposure to Styrene from Foods*

From 1999 to 2002, a comprehensive review of the potential health risks associated with exposure to styrene was conducted by a 12 member international expert panel selected by the Harvard Center for Risk Assessment. The scientists had expertise in toxicology, epidemiology, medicine, risk analysis, pharmacokinetics, and exposure assessment. The complete findings were published in the *Journal of Toxicology and Environmental Health* (referenced below).

The Harvard study reported that styrene is naturally present in foods such as strawberries, beef, and spices, and is naturally produced in the processing of foods such as wine and cheese. The study also reviewed all the published data on the quantity of styrene contributing to the diet due to migration of food packaging and disposable food contact articles, and concluded there is no cause for concern for the general public from exposure to styrene from foods or styrenic materials used in food-contact applications, such as polystyrene packaging and foodservice containers.

***For More Information:***

- Contact the U.S. Plastics Foodservice Packaging Group (PFPG), formerly the Polystyrene Packaging Council ([mike\\_levy@americanchemistry.com](mailto:mike_levy@americanchemistry.com)) for information on FDA reports referenced above
- The Styrene Forum (<http://www.styreneforum.org>), FAQ (Frequently Asked Questions), "What about the safety of polystyrene food packaging?"
- "A Comprehensive Evaluation of the Potential Health Risks Associated with Occupational and Environmental Exposure to Styrene", Harvard Center for Risk Analysis, Harvard School of Public Health, Boston, MA (Journal of Toxicology and Environmental Health, Volume 5, Number 1-2, January – June 2002), published quarterly by Taylor & Francis.

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