

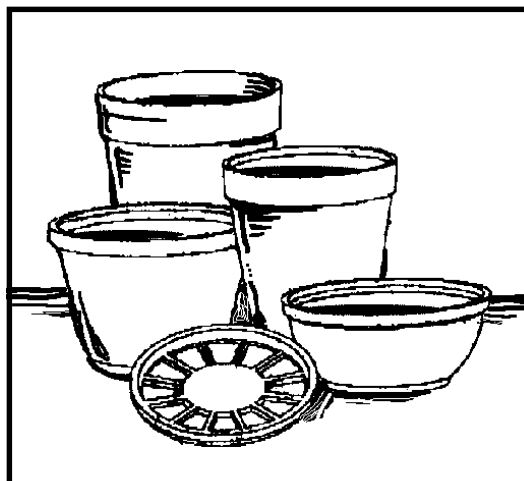
# Polystyrene Food Service Packaging— BENEFITS, PERFORMANCE, AND THE ENVIRONMENT

POLYSTYRENE  
PACKAGING  
**DELIVERS!**

When it comes to selecting the best food service packaging products, polystyrene packaging delivers! No other food

service packaging material provides polystyrene's unique combination of performance, economic and environmental benefits. Polystyrene food service packaging:

- *Is extremely strong yet lightweight*
- *Provides excellent insulation*
- *Enhances food service sanitation and protects public health*
- *Is less expensive than many other food service packaging options*
- *Has less environmental impact during its manufacture than paperboard food service packaging.*



Polystyrene makes living easier! The unique combination of benefits offered by polystyrene food service packaging helps make millions of people's lives a little easier every day.

- *Government officials, school administrators and parents have an increased sense of security about the safety of food service in their children's schools.*
- *The ability of outreach programs to provide delivered, ready-to-eat meals to the elderly and homebound is enhanced.*
- *The long-distance driver knows the cup will stay sturdy and the beverage warm for many miles.*
- *The single person and the working parent know the dinner they pick up on the way home will stay warm and ready-to-eat without spilling.*



# POLYSTYRENE FOOD SERVICE PACKAGING—BENEFITS

## SAFE

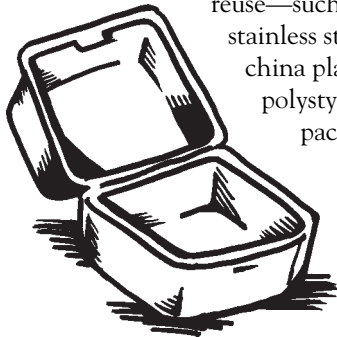
Polystyrene food service packaging is safe for use by consumers. The United States Food and Drug Administration regulates the safety of food-contact packaging and has allowed the use of polystyrene as a food-contact packaging material since 1958.<sup>1</sup> Polystyrene has also been approved by government organizations for use around the world, including Europe, Asia, and Central and South America.



## SANITARY

Polystyrene food service packaging provides a very effective means to ensure sanitary food service and helps prevent the spread of disease. Compared to reusable food service products that require

washing and sterilization before reuse—such as ceramic mugs, stainless steel utensils and china plates—disposable polystyrene food service packaging is significantly more sanitary at the point just prior to the consumer receiving the items.<sup>2</sup>



## ECONOMICAL

Polystyrene food service products are generally more economical to use than disposable paperboard products and reusable food service items. The wholesale price of polystyrene disposable food service products is often approximately two to three times less than an equivalent disposable paper container, and four to five times less than a comparable reusable food service item when equipment, labor, water, electricity, and detergent costs are included.

## REDUCES WASTE

Polystyrene food service containers are sturdy, strong, and insulate better than paper and other disposable food service containers. This means food and beverages stay warmer and fresher longer, resulting in less food and packaging waste due to spoilage, damaged packaging and leakage.



Also, because of polystyrene food service packaging's excellent insulation and strength, practices such as "double-cupping" are eliminated, significantly reducing the number of containers and corresponding resources used.

## DISPOSAL OPTIONS

Options for safe and efficient disposal of polystyrene food service packaging are the same as for other municipal solid wastes. This includes the integrated solid waste management systems advocated by the United States Environmental Protection Agency:<sup>3</sup>

- source reduction
- reuse
- recycling
- waste combustion (preferably with energy recovery)
- landfilling

*“Polystyrene food service products insulate better, keep foods fresher longer and cost less than paperboard based products.”*

John Sharpe, Food Service Director,  
Coastal Carolina Community College,  
Jacksonville, NC

## DOES NOT “CLOG” LANDFILLS

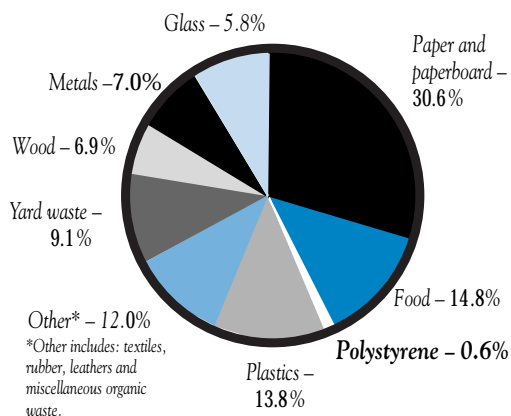
All polystyrene packaging comprises only a tiny fraction of the material that goes into our landfills. In fact, *less than one percent* by weight of the total municipal solid waste disposed is polystyrene. Paper and paperboard products make up the largest category of material (approximately 31 percent) disposed in our landfills.<sup>4</sup>

Very little of the waste discarded in today’s modern, highly engineered landfills biodegrades. Because degradation of materials creates potentially harmful liquid and gaseous by-products that could contaminate groundwater and air, today’s landfills are designed to minimize contact with air and water required for degradation, thereby practically eliminating the degradation of waste.<sup>5</sup>

*“All the expanded polystyrene foam that is thrown away in the United States every year accounts for no more than one percent of the volume of landfilled garbage.”*

William Rathje and Cullen Murphy, authors of *Rubbish! The Archaeology of Garbage*

## U.S. Municipal Solid Waste Disposal<sup>3</sup>



## SOURCE REDUCTION

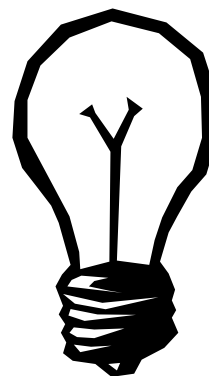
Source reduction makes a positive contribution toward conserving resources—as significant as recycling. Between 1974 and 1997, the amount of polystyrene packaging diverted from disposal through source reduction increased approximately 40-fold. Through source reduction, the weight of an average polystyrene foam plate is 25 percent less than in 1974, while still maintaining functional performance.<sup>6</sup>



One way to evaluate the impact of source reduction is to compare the resources saved by preventing waste versus recycling. The amount of polystyrene material source reduced in 1997 has an energy savings equivalent to a recycling rate of 51 percent for the polystyrene packaging and disposables produced in 1997.<sup>7</sup>

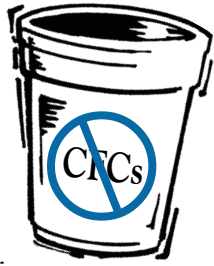
## HIGH ENERGY CONTENT

All carbon-based materials, including wood, paper, charcoal and plastics create noxious fumes when burned in uncontrolled situations. However, each of these materials, including polystyrene, can be safely burned in modern incinerators. Polystyrene’s energy content is very high, about 16,000 BTUs/pound, which is about twice that of coal; and this high-energy content aids in the burning of other solid wastes. Incineration converts polystyrene to carbon dioxide, water vapor, and a trace amount of non-toxic ash.<sup>8</sup>



## No CFCs

No CFCs (chlorofluorocarbons) are used in the manufacture of any polystyrene foam packaging products in the United States and have not been since 1990.<sup>9</sup> In fact, most polystyrene foam products never were made with CFCs. Those few that did use CFCs comprised a very small portion of U.S. CFC use. By 1990, those few polystyrene manufacturers that did use them had announced the voluntary phase-out of CFCs.



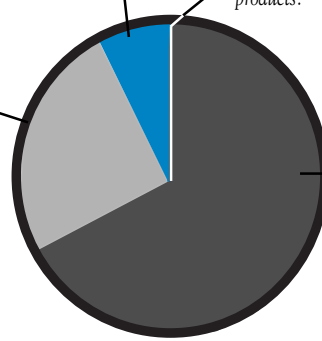
## U.S. Petroleum Consumption

The manufacture of **all** plastics consumes a small amount of the total energy used in the U.S.:<sup>12</sup>

About 2.6% of all petroleum is used for the production of **all** plastics

Only .002% of all petroleum used in the U.S. involves the manufacture of polystyrene products.

17.2% of all petroleum is used for the production of asphalt, road oils and lubricants



80% of all petroleum is used for gasoline, jet and diesel fuel and home heating fuels

## RAW MATERIAL EFFICIENCY

On a comparable weight basis, polystyrene food service packaging, such as a foam cup, use approximately one-sixth the amount of total raw materials as it takes to manufacture a coated bleached paperboard cup.<sup>10</sup>

## ENVIRONMENTAL IMPACT/RESOURCE CONSERVATION



The manufacture of polystyrene food service products, such as cups, plates and hinged containers, produces approximately 46 percent less air emissions, 42 percent less waterborne waste, and requires approximately 30 percent less energy

than the manufacture of comparable coated bleached paperboard products.<sup>11</sup>

<sup>1</sup> Code of Federal Regulations, Title 21 Part 177.1640, U.S. Government Printing Office, 1997.

<sup>2</sup> Assessment of the Sanitary Condition of Disposable and Reusable Dinnerware and Utensils in Food Service Establishments, Arthur D. Little, Inc., for the Foodservice & Packaging Institute, June 1992

<sup>3</sup> Municipal Solid Waste in the United States 1999 Facts and Figures, prepared for the U.S. Environmental Protection Agency by Franklin Associates, Ltd., July, 2001.

<sup>4</sup> Municipal Solid Waste in the United States 1999 Facts and Figures, prepared for the U.S. Environmental Protection Agency by Franklin Associates, Ltd., July, 2001.

<sup>5</sup> Rubbish! The Archaeology of Garbage, William Rathje and Cullen Murphy, 1989.

<sup>6</sup> Waste Management and Reduction Trends in the Polystyrene Industry, 1974-1997, Franklin Associates, Ltd., August 1999.

<sup>7</sup> Waste Management and Reduction Trends in the Polystyrene Industry, 1974-1997, Franklin Associates, Ltd., August 1999.

<sup>8</sup> Plastics in Municipal Solid Waste Incineration: A Literature Study, Professor Richard S. Magee, Hazardous Substance Management Research Center, New Jersey Institute of Technology for The Society of the Plastics Industry, January 1989, and, Polystyrene and Its Raw Material Styrene—Manufacture and Use, Polystyrene Packaging Council, January 1996.

<sup>9</sup> Statement of Support for the Foodservice Packaging Institute's Fully Halogenated Chlorofluorocarbon Voluntary Phaseout Program, National Resources Defense Council, Environmental Defense Fund, and Friends of the Earth, April 1988.

<sup>10</sup> Paper Versus Polystyrene: A Complex Choice, Martin B. Hocking, Science Magazine, Vol. 251, October 1991.

<sup>11</sup> Resource and Environmental Profile Analysis of Foam Polystyrene and Bleached Paperboard Containers, Franklin Associates, Ltd., June 1990.

<sup>12</sup> Petroleum Supply Annual - 2000, U.S. Department of Energy, Energy Information Administration, June 2000, and Annual Energy Review - 1997, U.S. Department of Energy, Energy Information Administration, July 1998.

For more information about polystyrene and plastics food service packaging, contact us via our Web site at [www.polystyrene.org](http://www.polystyrene.org), or

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The Plastics Foodservice Packaging Group (PFPG), a business group of the American Chemistry Council, has been creating and implementing programs designed to educate the public about the importance and the benefits of polystyrene and plastics food packaging.

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