

# Polystyrene facts essay sample

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Overview General Information Polystyrene Fast Facts Did You Know...

Polystyrene: A Look Inside What keeps your hands cool and your coffee hot?

What helps keep food fresher longer? What is lightweight yet strong?

### Overview

Polystyrene is found in your home, office, local grocery and in the cafeteria. It comes in many shapes and forms, from foam egg cartons and meat trays, to soup bowls and salad boxes, from coffee cups and utensils to CD "jewel boxes," and from produce trays to "peanuts" used in packing and the lightweight foam pieces that cushion new appliances and electronics.

### Polystyrene Gets the Job Done!

- • • • • It guards against leaking and keeps its shape when holding your take-out meal. It keeps hot food hot and cold food cold, while you hold the package in comfort. It cradles your fruit, vegetables, eggs and meat to keep them fresh and intact. It is an excellent low-cost and sanitary choice for food service packaging. It protects valuable shipments without adding significant weight.

Nothing else offers the combination of strength, lightness and durability to protect valuable objects from crystal to computers, from morning coffee to salad at lunch, from your children to you!

### Sanitary

Tests have shown that disposable food service ware (such as polystyrene cups, plates and utensils) is more sanitary than reusable service ware. (1) Health officials, who regulate food service operations in schools, hospitals and restaurants, recognize this important product benefit. In fact, national

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environmental health officials passed a resolution stating that restricting the use of disposable cups, plates and containers would have a potentially adverse impact on disease prevention. (2)

### Sturdy

Polystyrene protects against moisture and maintains its strength and shape even after long periods of time. Containers and lids close tightly, guarding against leaks while maintaining an ideal temperature. Additionally, polystyrene foam egg cartons and meat trays perform extremely well in automated processing equipment. Polystyrene packaging offers exceptional protection. Its shape can be molded (custom fit) to parts and products, maximizing its excellent cushioning characteristics.

### Efficient

Only about five percent of a foam package is polystyrene, the rest is air! Polystyrene provides the superior insulating quality that helps hold food at the optimal eating or drinking temperature longer than many alternatives. This helps to guard against waste. Polystyrene maintains hot food at temperatures required by many health departments, yet remains comfortable to hold.

### 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 the costs of equipment, labor, water, electricity, and detergent costs are included. This allows schools, hospitals and other institutions to make better use of their limited budgets. Its light weight helps reduce shipping costs. Its cushioning ability reduces breakage, resulting in fewer damaged goods.

### Convenient

Today's busy lifestyles require the convenience of affordable and quick take-out meals. Polystyrene packaging meets the demands of today's modern lifestyles by offering an economical and high quality food service product

### Fast Fact #1

Polystyrene may be best known for its foam coffee cups, but most polystyrene is used to make rigid durable products, such as television and computer cabinets, appliances, toys, compact disc "jewel cases" and audiocassette cases.

### Fast Fact #2

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 (about 31 percent) disposed in our landfills. (4)

### Fast Fact #3

No chlorofluorocarbons (CFCs) are used in the manufacture of any

polystyrene foam packaging products in the United States and have not been since 1990. 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. (9)

#### Fast Fact #4

The thermal insulating ability of polystyrene foam contributes to the success of programs such as “ Meals on Wheels,” which serve millions of senior Americans.

#### Fast Fact #5

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. (5)

#### Fast Fact #6

The manufacture of all polystyrene, to make both durable and packaging products, uses a fraction of one percent of the nation’s natural gas and petroleum. (6)

...polystyrene packaging comes in two forms: foam and solid? The most recognizable forms of polystyrene packaging are expanded and extruded foams (sometimes incorrectly called Styrofoam®, a Dow Chemical Co.

trademarked form of polystyrene foam insulation). Foamed polystyrene is used to make cups, bowls, plates, trays, clamshell containers, meat trays and egg cartons as well as protective packaging for shipping electronics and other fragile items. Solid polystyrene is used in products such as cutlery, yogurt and cottage cheese containers, cups, clear salad bar containers and video and audiocassette housings.

...many businesses and institutions depend on polystyrene packaging?

Schools, hospitals, nursing homes, supermarkets, restaurants and sports stadiums are among the many institutions and businesses that rely on polystyrene packaging. Its sturdy construction and sanitary design provide excellent insulation at an economical cost. Grocery stores use polystyrene in virtually all meat and poultry trays. In addition, polystyrene packaging can be found in egg cartons and a variety of produce packages, such as apple trays, mushroom tins, tomato containers, and strawberry and grape crates.

...polystyrene makes exceptional protective packaging?

Polystyrene protective packaging comes in two primary forms loose fill “peanuts” and shape molded packaging. Loose fill “peanuts” allow variously shaped items, such as office supplies or cosmetics, to be shipped in the same box. Shape molded packaging fits snugly around delicate products like computers, television sets, stereo equipment and appliances to protect them during shipping. Both shape molding and loose fill are lighter in weight than other protective packaging, saving energy and money during shipment. They also resist moisture and do not attract rodents or insects. An added benefit,

polystyrene protective packaging can be used over and over again through reuse and recycling. (3)

...Good for Families, Safe for the Environment

Wherever you live, wherever you work, chemicals are a vital part of your life. They are a key component in the products you use to clean your skin, in the building materials you use for the construction of your home and in the packaging products you use for your food. For example, did you know the shampoo we use to make our hair feel so clean contains hydroxypropyl methylcellulose - and the "natural" barley and wheat cereal that makes us feel so healthy is made with thiamin mononitrate? With these wordy terms in mind, it is not hard to understand why people get confused when polystyrene manufacturers attempt to explain the nature of their products. This fact sheet, published by the Polystyrene Packaging Council and its members, presents the facts about polystyrene. This information should help you gain a deeper understanding of why polystyrene is the best choice for food service packaging.

What is Inside?

Styrene, a petroleum by-product, is the primary raw material from which polystyrene is made. Styrene, first commercially produced in the 1930s, played an important role during World War II in the production of synthetic rubber. After the war, much of the use of styrene shifted to the manufacture of commercial polystyrene products. Synthetic styrene is also used in the manufacture of products such as automobile parts, electronic components, boats, recreational vehicles, and synthetic rubbers. Today, you or a member

of your family will probably use a product derived from styrene. Modern man has known about styrene for centuries. A naturally occurring substance, styrene is present in many foods and beverages, including wheat, beef, strawberries, peanuts and coffee beans.

Also found in the spice cinnamon, its chemical structure is similar to cinnamic aldehyde, the chemical component that elicits cinnamon's flavor. It is naturally present to flavor foods, and is used as a flavoring additive to such food as baked goods, frozen dairy products, soft candy, and gelatins and puddings, with permission from the U. S. Food and Drug Administration (FDA). (7) The Polystyrene Packaging Council works closely with the Styrene Information and Research Center (SIRC), whose mission is to collect, develop, analyze and communicate pertinent information on styrene. Since 1987, SIRC has undertaken a comprehensive research program to enhance understanding of styrene's potential to affect human health and the environment.

Polystyrene meets stringent U. S. FDA standards for use in food contact packaging and is safe for consumers. Health organizations encourage the use of single-use food service products, including polystyrene, because they provide increased food safety. (8) All packaging (glass, aluminum, paper, and plastic - including polystyrene) contains substances that can "migrate," or transfer, to foods or beverages. The FDA regulates residual levels of these components in food packaging to ensure that packaging is safe to use.

What is Not Inside?

Polystyrene foam products are 95 percent air and only five percent



polystyrene. When polystyrene foam packaging is produced, a blowing agent is used in the process. Most polystyrene foam products never were made using chlorofluorocarbons (CFCs) as a blowing agent. The few polystyrene products that were made with CFCs comprised a very small portion of the nation's CFC use. According to the U. S. Environmental Protection Agency (EPA), only two to three percent of CFCs used in the United States in the 1980s went toward production of polystyrene packaging products. At the forefront of U. S. industry, polystyrene manufacturers exceeded government goals and timetables during the phaseout period of CFCs in the late 1980s.

(9) Polystyrene foam products are now manufactured primarily using two types of blowing agents: Pentane and Carbon Dioxide.

Pentane gas has no effect on the upper ozone layer, although, if not recovered, it can contribute to low-level smog formation. Therefore, manufacturers use state-of-the-art technology to capture pentane emissions. With ever-evolving technology, some manufacturers use carbon dioxide (CO<sub>2</sub> or other hydrocarbons in some cases) as an expansion agent for polystyrene foam. CO<sub>2</sub> is non-toxic, nonflammable, does not contribute to low-level smog, and has no stratospheric ozone depletion potential. In addition, the carbon dioxide used for this technology is recovered from existing commercial and natural sources. As a result, the use of this blowing agent technology does not increase the levels of CO<sub>2</sub> in the atmosphere.

Sources:

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