FACTS

about
EPS (Expanded Polystyrene)
and the
Environment

Straight Answers, Facts & Figures

What is Expanded Polystyrene (EPS)?

It is a lightweight cellular plastic foam material composed of carbon and hydrogen atoms. It is derived from petroleum and natural gas by–products. **Molded EPS does not involve the use of cholorofluorocarbons, usually referred to as CFCs.**

What advantages do Expanded Polystyrene products provide?

Expanded Polystyrene, better known as EPS, is used extensively in construction, packaging, medical and food service applications. EPS provides significant sanitation advantages over reusable products. A recent University of Michigan study found that use of disposable food service items resulted in significantly lower bacterial counts, lowering health hazards and the transmission of diseases. That is why so many hospitals, schools, day care centers, retirement facilities, offices and fast food outlets use EPS packaging. In addition, EPS packaging provides critical insulation and cushioning qualities. The health industry uses EPS extensively to ship organs for transplants, blood plasma, breakable and sensitive instruments, and other life–saving items. The fishing industry depends on EPS packaging to make sure live fish, lobsters, filets, and related food items arrive at worldwide markets safe to eat.

How much of our solid waste is EPS plastic?

According to data developed for the Environmental Protection Agency, Americans generated 160 million tons of municipal solid waste in 1987. EPS products accounted for 81 thousand tons, or less than one–tenth of 1% (0.06%) of the total by weight. By volume, EPS comprised about one–third of one percent (0.27%). By contrast, newspapers made up 11.4% by weight and 14.1% by volume, according to research done by the University of Arizona. In reality, EPS and all other plastics comprise a small percentage of solid waste material. However, everything we throw away –from paper towels to apple cores– is part of our waste disposal problem.

QUESTIONS & ANSWERS

Is it possible to recycle Expanded Polystyrene Products?

Yes. The technology exists and the industry is currently developing practical recycling plans. A number of pilot programs are under way to recycle used polystyrene foam food service products. Many EPS manufacturers grind waste EPS into soil aeration material for use by the plant nursery industry, for loose fill insulation, and for recycling into the product mix.

Would EPS be better if it were biodegradable?

Contrary to popular belief, biodegradability is not necessarily good. When biodegradable products are put in landfills they break down and form methane gas and leachates which may contain toxic substances that may threaten ground water. Plastics, such as EPS, are solid, chemically inert materials that don't pose these types of health problems.

Some state and local legislation is calling for degradable plastic products. Is this realistic?

Although some believe degradable plastics offer an immediate solution, many critical questions remain. Will degradable polystyrene foam receive Food and Drug Administration approval? How can we assure the degrading won't start prematurely when the product is still on the shelf? How long will degradation take? Will degradable plastic lose its best qualities including resistance to sunlight, oxidation, leakage, moisture, mold and bacteria? What happens when degradable plastics are mixed with recyclables?

In addition to using EPS in our landfills, are there other disposal solutions?

Yes! State–of –the–art waste–to–energy incineration (also called resource recovery) is a viable, environmentally sound alternative to landfills for most municipal solid wastes. It reduces the overall volume of trash by as much as 90% and generates electricity for the town or city residents. According to a 1987 Environmental Protection Agency study, there are 75 resource recovery plants in operation in the United States and 60 more under construction. In Japan, there are 361 large continuous waste–to–energy facilities generating electricity.

EPS and other plastics enhance the burning of refuse and are an important component of waste–to–energy operations. EPS has a much higher heating value, about 17,800 BTUs per pound, than mixed refuse which averages 4500 BTUs per pound.

As stated by the U.S. Senate Commerce Committee, Subcommittee on the Environment, "If an average city were to replace its present 'dump and bury' disposal system with a total recovery system, it could efficiently burn its waste, benefit from its fuel value, and recover as much as 14% of its total energy needs."

Is EPS safe when it is burned?

EPS, when burned, produces carbon dioxide and water, the same by–products produced when you burn a piece of wood. *(For additional information, EPS Executive Summary, 86–102: "A Literature Review of the Combustion Toxicity of Expanded Polystyrene," Southwest Research Institute, is available upon request.)*

The Society of the
Plastics Industry, Inc.

SPI

Expanded Polystyrene Division

Growing concern about solid waste disposal and pollution has focused attention on plastics, including Expanded Polystyrene (EPS). Some local and state officials have proposed banning, taxing, or otherwise restricting plastic products in the well–intentioned belief that these measures will help solve solid waste disposal problems in their communities. Such proposals have led to confusion and misinformation about the impact these products have on our environment and their contribution to solid waste disposal and pollution problems.

The questions and answers provided in this fact sheet will demonstrate:

- Expanded Polystyrene products are environmentally sound. In fact, they constitute such a small portion of our nation's solid waste that banning or taxing them will not provide a meaningful solution to our country's waste disposal problems.

- Solutions to our nation's solid waste disposal problems require industry and government to work together to develop sensible, comprehensive approaches which include: recycling reusable materials; recovery of energy from plastics in modern waste–to–energy facilities; and environmentally safe siting of landfills for non–combustibles and incinerator ash.

The Society of the Plastics Industry, Inc., is a trade organization of more than 2,000 members representing all segments of the plastics industry in the United States. The EPS Division in SPI represents approximately 150 companies, a major portion of the industry's producers, serving the packaging and construction markets. The division's programs include education, research and testing.

For further information please contact:

The Society of the Plastics Industry, Inc.
EPS Division
1275 K Street N.W., Suite 400
Washington, DC 20005
(202) 371-5200