

Product Safety Summary

Styropor[®] Expandable Polystyrene

This Product Safety Summary is intended to provide a general overview of the chemical substance. The information on the Summary is basic information and is not intended to provide emergency response information, medical information or treatment information. The summary should not be used to provide in-depth safety and health information. In-depth safety and health information can be found on the Material Safety Data Sheet (MSDS) for the chemical substance.

Chemical Identity

Abbreviation:	EPS
CAS Number:	9003-53-6
Common Names:	Expandable polystyrene Polystyrene Ethylbenzene, homopolymer

Product Overview

- Styropor expandable polystyrene is sold as white spherical beads which are treated with steam and molded into foams.
- Foams made of polystyrene are used for making insulation panels, flotation devices and packaging materials.
- BASF does not make polystyrene for use in food contact applications.
- Styropor EPS contains small amounts of pentane, which allow it to be foamed, and a flame retardant.
- The primary potential hazards associated with polystyrene occur when making foam. Because it contains pentane, which is flammable, care must be taken to avoid ignition.
- The Occupational Safety and Health Administration has established a Permissible Exposure Limit of 1000 ppm as an 8 hour average for pentane. The American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV) is 600 ppm for 8 hours.
- For further safety and health information, request the current Material Safety Data Sheet (MSDS) for this substance.
- Use of hot wires cutters by processors to cut foam may result in the release of potentially toxic smoke and vapors.

Physical/Chemical Properties

- Low pentane Styropor Expandable Polystyrene is about 95% polystyrene, 3.5 – 3.8% pentane and less than 1% flame retardant.
- It is sold as white spherical beads, but, consumers encounter it as white molded objects, such as insulation block and packaging material for electronics.
- The beads have a density of 1.02-1.05, close to that of water.
- Styropor EPS dissolves in organic solvents, such as toluene.
- The beads contain about 4% pentane, which is flammable. Therefore, it is important to avoid sources of ignition when handling industrially. Foam made from the material does not pose a flammability concern.

Health Information

Acute Hazards

Styropor EPS beads and articles made from them are essentially non-toxic. Processing the beads may cause the release of pentane, which can cause irritation and central nervous system effects at high airborne concentrations.

Effects on Respiratory System:

Products made from EPS do not present any hazards to consumers. Industrial processing may result in potential exposure to pentane. The effects of overexposure to very high levels of pentane vapors include eye and respiratory irritation and central nervous system effects, such as unconsciousness.

Effects on Eyes:

EPS and its products are not irritating to the eyes. In industrial situations, pentane vapors may cause irritation if they are not controlled.

Effects on Skin:

EPS and its products are not irritating to the skin. In industrial situations, hot molten material may cause thermal burns.

Effects on Ingestion:

Accidental ingestion is not expected to result in injury. To avoid choking hazards, children should not be allowed to eat molded products.

Chronic Hazards

No chronic hazards related to EPS or its products have been reported.

Environmental Information

Spills should be swept up and discarded. EPS can be disposed of as non-hazardous waste.

Additional Hazard Information

Styropor EPS should be stored and handled away from sources of flame, sparks and electrostatic charges.

The following safety recommendations must be observed:

- Specify proper electrical equipment and adequate grounding for static electricity.
- Maintain a dust-free workplace and avoid generating dusts during handling.
- Maintain adequate ventilation in all work areas to control vapors.
- Provide adequate firefighting equipment, including automatic sprinklers, in work and storage areas.

Exposure Potential

Consumer exposure to expandable polystyrene is limited to products molded from EPS beads. As a result, exposure to dusts and pentane vapors are minimal and will not be hazardous

Workplace exposure to pentane vapors must be limited through the use of engineering controls, such as ventilation and hoods. In general, skin and eye exposures are prevented through the use of protective eye and face equipment and impermeable gloves and clothing.

Risk Management

Workers handling Styropor EPS beads can safely work with this material if adequately instructed and educated regarding proper handling procedures.

Workers should be trained to understand the potential fire hazards of working with pentane and materials that may release dusts.

Ventilation must be available in work areas to control potential airborne pentane exposures to acceptable levels.

Federal/Science/Other Findings

Operation Clean Sweep

<http://www.opcleansweep.org/>

National Institutes of Health Household Products Database

<http://hpd.nlm.nih.gov/cgi-bin/household/search?queryx=9003-53-6&tbl=TblChemicals&prodcats=all>

Contact Information

<http://www.basf.com>

MSDS

http://worldaccount.basf.com/wa/PublicMSDS~en_US/Search

Technical Information

http://www.basf.com/businesses/plasticportal/pp_home_en.html

References

Technical Leaflet S-2BFL: Styropor[®] expandable polystyrene BF Product Series, BASF Corporation, September 2005

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