

# Styropor® expandable polystyrene

## P-440H Product

### Products and their uses

Styropor P-440H is a non-modified product that can be used in a wide variety of applications, including shape molding of thin walled parts with fast molding cycles such as seedling trays, printed surface applications and leak resistant such as coolers.

Styropor P-440H product is compatible with many anti-stat, mineral oil and color additives added during processing. P-440H product does not contain chlorofluorocarbons or flame retardants.



The Chemical Company

### Description

Regular non-modified expandable polystyrene (EPS) containing approximately 5.2 – 5.8 wt% pentane as the blowing agent. The P-440H is supplied as spherical beads with a bulk density of approximately 40 lbs/ft<sup>3</sup> (640 kg/m<sup>3</sup>).

Product Specifications		
Bead Size (mm)	Application	Pre-puff Age (dependent on density)
0.355 – 0.85	General Packaging, Shape	4 to 24 hours

### Typical expanded density range\*

1.25 – 3.0 lbs/ft<sup>3</sup> (20 – 48 g/L)

\*(Typical densities are first and/or double pass pre-expansion. Results depend on equipment type and processing conditions.)

### Processing

Polystyrene foams made from Styropor P-440H products are produced in three stages: Pre-expansion, intermediate aging and molding. Full details are given in the brochure *Processing Styropor*.

### Pre-expansion

The minimum density achievable depends on the pre-expansion equipment and technique used. With Styropor P-440H product, batch expanders are recommended to obtain bulk densities shown above. Pre-expander pressures range from 0.15 – 0.35 bar. Care should be taken during expansion, as prolonged steam times will result in excessive loss of pentane and ultimate difficulty in achieving acceptable fusion during molding. In continuous expanders Styropor P-440H products may achieve densities of 1.25 pcf or lower, depending on equipment and conditions.

### Intermediate aging

The minimum recommended pre-puff intermediate aging period for low density shape molding is four (4) hours depending on density, ambient temperature and part thickness. Care should be taken when aging in excess of twenty-four (24) hours. Steam pressures and steam time may increase in order to obtain acceptable or quality moldings.

### Molding

This product is intended for molding on automatic molding machines. Molding can be accomplished under a wide range of conditions and densities.

### **Packaging and storage**

Styropor P-440H product is packaged in Flexible Intermediate Bulk Containers of 1,763 lbs. (800 kgs). Plastic liners are used to maintain product shelf life by retaining the blowing agent.

Styropor products should be stored indoors in a cool place (maximum temperature 80°F). In the unopened bulk containers, the typical shelf life after receipt is 30-60 days. The containers should be protected from rain, snow, frost, direct sunlight and mechanical damage.

### **Safety**

Styropor products and the finished foam products should not be exposed to ignition sources (including open flame, sparks, or electrostatic discharges) during storage, processing, shipment and application. Adequate ventilation in all processing areas must be provided to prevent hazardous accumulations of hydrocarbon vapors.

For complete safety precautions and recommendations, refer to the Styropor bulletin S-6 *Fire Safety Precautions in Styropor Processing Plants* and appropriate Material Safety Data Sheets.

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*Values shown are based on limited testing and are not intended to be used in establishing maximum or minimum ranges for specification purposes.*

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### **Useful link:**

<http://www.StyroporEPS.com>

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