

# Styropor® expandable polystyrene P40 H Product Series



The Chemical Company

## Products and their uses

Styropor P40 H products include P 240A H, P 340A H, P 340C H and P 440H. Styropor P40 H products can be used in a wide variety of applications not requiring a regular non-flame retardant material including shape molding applications, leak resistant containers such as fish boxes and coolers, printed surfaces requiring smooth surface finish.

## Description

Modified expandable polystyrene (EPS) containing approximately 5.2 – 5.8 wt% pentane as the blowing agent.

All products are supplied as spherical beads with a bulk density of approximately 40 lbs·ft<sup>-3</sup> (640 kg·m<sup>-3</sup>). The bead size range for each product is shown in Table 2.

Styropor P40 H products are compatible with many anti-stat, mineral oil and color additives added during processing.

## Packaging and storage

Styropor P40 H products are 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 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.

Table 1

Product	Intended uses
Styropor P 240A H	General packaging, shape or block molded parts, loose fill or cut in place packaging applications. Can be processed to a wide variety of densities.
Styropor P 340A H	Wide variety of shape molding applications, typically 1.4 lbs/ft <sup>3</sup> density and above applications with excellent fusion and requiring short aging and cycle time. Leak resistant applications such as coolers not requiring modified material.
Styropor P 340C H	A narrow bead size used for a wide variety of shape molding applications, typically 1.0 lbs/ft <sup>3</sup> density and above applications excellent fusion and surface finish and short cycle time. Leak resistant applications such as coolers not requiring modified material.
Styropor P 440 H	Shape molding of thin walled parts with fast molding cycles such as seedling trays, printed surface applications requiring smooth surface finish.



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**Table 2: Technical Product Specifications**

Product	Pentane Content	Moisture Content	Bead Size (mm)	
Styropor P 240A H	5.2 – 5.8%	1.2% max	0.85 – 1.70	≥ 97%
Styropor P 340A H P 340C H	5.2 – 5.8%	1.2% max	0.60 – 1.25	≥ 97%
Styropor P 440 H	5.7 – 5.8%	1.2% max	0.35 – 0.85	≥ 97%

**Processing**

Polystyrene foams made from Styropor P40 H 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 P40 H 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.

**Table 3**

Product	Typical expanded density range
Styropor P 240A H	1.0 – 3.0 lbs/ft <sup>-3</sup> (18-48 kg·m <sup>-3</sup> )
Styropor P 340A H	1.4-3.0 lbs/ft <sup>-3</sup> (16-48 kg·m <sup>-3</sup> )
Styropor P 340C H	1.0-3.0 lbs/ft <sup>-3</sup> (16-48 kg·m <sup>-3</sup> )
Styropor P 440 H	1.25-3.0 lbs/ft <sup>-3</sup> (20-48 kg·m <sup>-3</sup> )

**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**

These products are intended for molding on automatic molding machines. Molding can be accomplished under a wide range of conditions and densities.

**Safety**

Styropor products and the finished foam products should not be exposed to ignition sources (including open flame, sparks, or electrostatic charges) 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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