

POLYMERS

SABIC® EPS 452

Expandable Polystyrene Standard Grade

Product Description

Standard expanded Polystyrene EPS 452 is manufactured by the suspension polymerization of styrene monomer. The polymerization is generally carried out in a batch process. EPS 452 is an expandable polystyrene grade supplied in free-flowing beads, containing pentane (CFC free) as a foaming agent. It is used for fast cycle shape and block molding applications with good surface finish.

Typical Applications

EPS 452 is a standard fast cycle grade used for shape molding with wall thickness less than 10mm (5 - 10 mm) and for high density block molding.

Processing

EPS 452 is processed in three steps:

- Pre-expansion.
- Maturation and molding.

EPS 452 is heated by steam at 100°C in a pre-expander. The foaming agent present in the polystyrene beads vaporizes and mixes with steam. The gas mixture so produced subsequently softens the beads and expands them to 30-40 times to its initial size. In maturation process the foaming agent and steam condense in the cells of the pre-foamed beads causing partial vacuum, which is compensated by the diffusion of air into the beads. The maturation period could be between 3 and 24 hours. In the molding process the matured pre-foamed beads can further be processed by direct steam to the desired shape molding.

Typical data

Properties	Unit	Value (1)
Bead Distribution	mm	0.4 - 0.8
Minimum Density*	Kg/m ³	18
Normal Density Range	Kg/m ³	18 - 35

* One pre-expansion, lower density can be achieved by multiple pre-expansions.

Handling & Health Safety

EPS 452 presents no toxic hazard when handled under normal conditions. Excessive exposure to high concentration of pentane should be avoided. EPS 452 is not intended to be used where the product is likely to be exposed to fire.

Packaging

EPS 452 is supplied in 1 MT semi bulk cardboard containers (octabins).

Storage and Fire Precautions

EPS 452 grade contains flammable foaming agent, pentane, which can form explosive mixture with air. Hence, expandable polystyrene should be stored in closed containers below 25°C. Storage and processing areas should be adequately ventilated. Source of ignition like smoking, sparks, welding and naked flame should be strictly avoided. Should fire occur, the processor should use dry powder or carbon dioxide extinguishers, particularly in the area of hot wire cutting machines.

Food Regulation

EPS 452 is suitable for food contact application. Detailed information is provided in relevant Material Safety Datasheet and for additional specific information please contact SABIC local representative for certificate.

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