

POLYMERS

SABIC® EPS 450FF

Expandable Polystyrene Fire Retardant Grade

Product Description

Fire retardant expanded Polystyrene EPS 450FF is manufactured by the suspension polymerization of styrene monomer. The polymerization is generally carried out in a batch process and it contains a fire retarding additive in the formulation. EPS 450FF is an expandable polystyrene grade supplied in free-flowing beads containing pentane (CFC free) as a foaming agent.

Typical Applications

EPS 450FF grade is used for shape molding with wall thickness less than 10 mm (5-10 mm) and for high density block molding with good surface finish. EPS 450FF has retarded ignitability and the moldings made from it will conform to the requirement of DIN 53438 class K1 and K2.

Processing

EPS 450FF is processed in three steps:

- Consistent processability.
- Maturation and molding.

EPS 450FF 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 450FF presents no toxic hazard when handled under normal conditions. Excessive exposure to high concentration of pentane should be avoided. EPS 450FF is not intended to be used where there is possibility of contact with food.

Packaging

EPS 450FF is supplied in 1 MT semi bulk cardboard containers (octabins).

Storage and Fire Precautions

EPS 450FF 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 450FF is not intended 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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