

SABIC® EPS 452

EXPANDABLE POLYSTYRENE STANDARD

DESCRIPTION

Standard expanded Polystyrene SABIC® EPS452 is manufactured by the suspension polymerization of styrene monomer. The polymerization is generally carried out in a batch process. SABIC® EPS452 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

SABIC® EPS452 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.

TYPICAL PROPERTY VALUES

Revision 20251203

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
TYPICAL DATA			
Bead Distribution	0.4 – 0.8	mm	SABIC 020
Minimum Density ⁽¹⁾	18	kg/m³	SABIC 027
Normal Density Range	18 – 35	kg/m³	SABIC 027

(1) One pre-expansion, lower density can be achieved by multiple pre-expansions

PROCESSING CONDITIONS

SABIC® EPS452 is processed in three steps:

Pre-expansion, Maturation and Molding

SABIC® EPS452 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 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.

STORAGE AND HANDLING

SABIC® EPS452 is supplied in 1 MT semi bulk cardboard containers (octabins).

SABIC® EPS452 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

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