



321HS is one of the TPC Performance expandable polystyrene products range. It is a free flowing expandable polystyrene grade, consisting of spherical polystyrene beads containing pentane as the expansion agent. Expandable polystyrene (EPS) is normally expanded to achieve the low densities required for final step expansion. The typical density of this grade is around 22 kg/m³, but other densities are possible depending on applications and equipments. 321HS is especially high strength formulated to achieve low density foam without lumps during pre expansion. This grade is not fire retardant, so it is not suitable for building applications.

Applications: High Density Block, Shape Molding 321HS is used as a multi-application packaging material for contour moldings with a minimum wall thickness of 10 mm. Properly processed EPS foam packaging made from 321HS provides high mechanical strength also with low densities. It is not hygroscopic and does not become friable in low temperatures. Molded EPS packaging parts have to act as shock absorbers and cushion their content against blows from outside, i.e. they have to absorb the energy released in an impact. The mainly closed cell structure of molded foam parts made from 321HS absorbs the impact stress as "deformation work". In this process the air enclosed in the cells is first compressed, while bigger impact forces may also deform or crack the cell walls.

Packaging and storage: 321HS is shipped in jumbo bag or octabins (height 158 cm) on wooden pallets (115cm x 115 cm), containing 1000 kg net of material. The octabins are not weather or water-proof and must therefore not be exposed to outdoor conditions. In order to obtain the desired properties of 321HS, the raw material should be stored below 20 °C and be processed within 1 month.

Processing: Pre expansion With discontinuously operating, state-of-the-art pre expanders 321HS can be pre expanded to densities of approx. 22 kg/m³. Lower densities can be achieved by double pre expansion or in optimized machines. 321HS has been treated with an antistatic agent to prevent a buildup of electro-static charge during transport.

Intermediate aging: Intermediate aging should be between 10 and 48 hours.

Moulding: 321HS can be processed in industry standard molding machines within a relatively wide range of steaming settings. If a regenerative agent is added care has to be taken that the density of the regenerative agent equals the pre expansion density as closely as possible to prevent segregation during production.

Typical Properties

PROPERTY	UNIT	TEST METHOD	TYPICAL VALUE
BEAD SIZE	MM	SUNPOR 7.2.5 (MIN 90% BY WT)	(0.7-1)(>90%wt)
K-VALUE	—	SUNPOR 7.2.4	55
PENTANE CONTENT	WT%	SUNPOR 7.2.2	5.2%
EXPANDED DENSITY	KG/M3	SUNPOR 7.2.6	18-30
RESIDUAL MONOMER	PPM	SUNPOR 7.2.1	Less than 1000

*All above mentioned data are typical values and not to be construed as real specifications. Users should confirm results by their own tests. For more information about guaranteed items, please refer to S.S.S. (Standard Sales Specifications)

