

General description

EPS/PPO granulate which can be moulded into high toughness and/or high temperature foam. The material is available with and without flame retardant. The compressive strength of the material is appr. 15% higher than normal EPS at comparable densities, which makes the material very suitable for impact-absorbing applications.

PHYSICAL PROPERTIES	TEST METHOD	UNITS	SPECIFICATION				
Colour / form			Lentil-shaped granulate in light creamy or dark grey*				
			* Color can fluctuate between batches and is also depending on density of the foam				
Bulk Density	ISO 1183	g/cm ³	0,66				
Pentane Content		%	> 4,5%				
Moisture absorption		%	< 0,1%				
Compressive strength	EN1605 (10%)	kPa	40 kg/m ³ , 250 kPa 60 kg/m ³ , 500 kPa 80 kg/m ³ , 850 kPa				
Size range 90% between	Sieving	Mm	HT x12R/F 1.0-1.4 mm HT x11R/F 0.9-1.4 mm HT x08R 0.6-1.0 mm				
Thermal properties	ISO 2796-1980		Short term resistance*	Long term resistance	Flame retardant	Thermal Insulation mW/Mk*	Type
			110°C	105°C	No	33	EPS- HT600R
			100°C	95°C	No	33	EPS- HT400R
			90°C	85°C	Yes	35	EPS –HT200F
			* at 30 kg/m ³				
The temperature resistance is depending on load and duration and has to be tested in practice for the specific application * short term = 1 hour exposure without significant deformation (< 1%)							
Fire properties	ECE R44 FMVSS302 UL 94		HT200F				
			Test norm	Density range	Result		
			ECE R44 and FMVSS 302	25-60kg/m ³	0 mm/min		
UL94 (ASTM 4986-03)	25-60 kg/m ³	HF1					

Remarks:

HT 200F series is halogen free and contains no SVHC's.

Higher temperature resistance in foam can be made available depending on the application.

The temperature resistance can only be achieved only if residual pentane is removed f.e. by an extended oven treatment of at least 72 hours at 70°C.

N.B.

Information contained in this data-sheet is given in good faith and to the best of the knowledge and belief of Synbra Technology bv (The Company). The properties of plastics set out herein are typical values and do not constitute a specification. It is at all times the responsibility of the customer to ensure that materials supplied by the Company are suitable for the purpose for which they are intended. The Company accepts no liability whatsoever arising out of the use of the information herein contained or the use, application, adaptation or processing of the products herein described.

Processing guidelines

Pre-expansion

Pre-expanding EPS- HT materials can best be done on a pressure pre-expander, because of the higher softening temperatures.
An example of typical settings for EPS-HT 200 are listed below, but will be depending on the used equipment.

Kurtz batch KV 450 pressure pre-expander (batch weight: 2 kg):

Steaming time: 60 sec.

Steam pressure 0,4 bar 40 kg/m³

Steam pressure 0,8 bar 25 kg/m³

Moulding

Maturing time appr. 48 hours.

Moulding of 200 series can be done on a standard moulding machines.

Moulding pressure HT400R 1.3 bar recommended.

Processing conditions for other types can be made available available on request.

Packaging and storage

HT EPS is delivered in 1000KG cardboard octabins. Other packaging on request.

The material should be used up within 6 months after delivery.

Chemical resistance

HT EPS is resistant to most mineral acids and their water solutions. It is unaffected by alkali solutions regardless of concentration, temperature or duration of exposure.

The material may be detrimentally affected by strong oxidizing acids (i.e.: nitric and perchloric acids). Chlorine, bromine and chlorinated and aromatic hydrocarbons will also dissolve HT EPS foam.

When questions on chemical resistance we recommend that a piece of the foam is evaluated in the anticipated chemical environment.

Applications

The EPS HT material can be used in the following market segments

Segment	Key feature	EPS HT series	Application
Automotive interior	Energy Absorption/weight saving	HT400R	Door liner / sun visor / rear parcel shelf
		HT200F	Head rest core
Boilers	Thermal strength	HT200F	Boilers housing
	Increased insulation at high temperature	HT400R	Solar heat units Boiling water delivery system
Horticulture	Multiple use of tray (5 years +)	HT400R	Tomato growing system, steam cleanable
	Steam cleanable	HT400R	Sterilisable Seed trays
Packaging	Weight saving	HT400R	LCD panels
	Microwave application	HT400R	Microwavable food packaging

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