SYNTHOS PS GP 585X

General Purpose Polystyrene – GPPS

Technical Data Sheet
Date of edition: 2017-05-01
Edition: 3
Approved by: Product Manager – Michał Chełmecki
Previous editions of this document have lost their validity.

CHARACTERISTICS

SYNTHOS PS GP 585X is general purpose polystyrene (GPPS) of excellent heat resistance and good rheological properties. It is a colorless, thermoplastic material designed for extrusion, thermoforming and injection moulding.

Product has a form of cylindrical granules of diameter 2.5 to 6 mm. The product may contain small amounts of granulate finer than that mentioned above of irregular shapes. Presence of any mechanical impurities in the granulate is not allowed.

TECHNICAL PARAMETERS AND PROCESSING CONDITIONS

Parameters	Unit	Typical value	Specification range	Standard/ Method	Note
Melt mass-flow rate (MFR)	g/10 min	7,5 - 8,5	7.0 – 9.0	ISO 1133	200 °C; 5 kg
Charpy impact strength	kJ/m^2	9	min. 7.0	ISO 179/1eU	23 °C
Vicat softening temperature	°C	99	min. 98	ISO 306/B50	50 °C/h; 50 N
Residual styrene content	%	0,02	max. 0.03	Internal	-

Parameters	Unit	Typical value	Standard/ Method	Note
Flammability [1)]	Class	HB	UL 94	1,6 mm
Moulding shrinkage	%	0,2 - 0,5	Internal	-
Processing conditions				
Temperature/Time of drying [2)]	°C/h	70 / 2 - 4	-	hot-air drier
	°C/h	80 / 1	-	drier with a molecular sieve
Injection moulding: Melt temperature	°C	180 - 260	-	-
Injection moulding: Mould temperature	°C	10 – 60	-	-
Extrusion: Melt temperature	°C	200 - 240	-	-

1) Tested in Electro-technical testing institute, Prague, Czech Republic.

2) For products with high quality of surface

To each shipping lot/delivery a quality certificate including data on properties of the product determined during release control is issued. Scope of the testing which is covered by the quality certificate is each time agreed upon in the sales contract.

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APPLICATION

Injection moulding is used to produce parts with increased thermal resistance. Production of XPS sheets and plates by means of direct extrusion and blowing. It is suitable for blending with high-impact polystyrene (HIPS) and SBS copolymers to increase the thermal resistance of the product e.g. cups for hot drinks.

The composition of the polymer meets the requirements of the Health and can therefore be used for the production of articles coming into contact with food.

PROCESSING AND RECYCLING

For processing of SYNTHOS PS GP 585X in injection molding recommended melt temperature ranges from 180 to 260 °C, and mould temperature from 10 to 60 °C. For processing by extrusion, the recommended melt temperature is from 200 to 240 °C. Processing at temperature exceeding 280 °C may cause its degradation. The optimum setting for particular cases for injection and extrusion must be based on individual applications and equipment. The regranulate material can be added to the basic material. Depending on its quality and amount, such an additive will influence the final product's properties.

PACKAGING

SYNTHOS PS is usually delivered in truck tankers or in polyethylene bags containing 25 ± 0.2 kg (net weight) that are stored on palettes and secured by PE foil, or in “octabin” packages with weight of 1,100 kg. Following data are shown on packaging: manufacturer, name of product, number of grade, number of a coloured shade, serial number, weight and a filling code.
In case of product transported in bulk the above-mentioned information is given in the quality certificate as well as in the sales documents.

TRANSPORTATION

The covered road and railroad transportation equipment should be used for transportation. The manufacturer is not responsible for cleanliness of the customer's own transportation packaging. The relevant road and railroad regulations apply to transportation.
In accordance with: ADR, RID, ANDR, IMDG, ICAO, IATA, and UN, SYNTHOS PS GP is not a dangerous good for transportation. Transport in bags without pallets, for example placed in containers, is allowed provided that the bags are protected against tear and moving during transport.

Do not transport together with the organic solvents.

STORAGE

SYNTHOS PS can be stored in transportation packaging or in bulk in closed containers (silos). It is recommended to store the product in dry, well ventilated, covered warehouses; away from sources of heat. It can not be stored together with organic solvents. Product in bags can be stored outdoors. The outdoor storage does not have any impact on quality of stored material, but the quality of packaging (PE film) and cleanliness of the outer surface of the packaging is compromised. Hence, the manufacturer does not recommend storing the product outdoors. Material in octabin may not be stored outdoors because this type of packaging is not resistant to weather conditions.