

Product Information

04/2005

Polystyrol 454 C

PS-I



Product description

Polystyrol 454 C is an impact resistant polystyrene with a good balance of toughness, high flow, heat resistance and high gloss.

Processing

Polystyrol 454 C can be injection moulded under different conditions depending on machinery available and articles moulded. Mass temperature can be as high as 260°C. Polystyrol 454 C is suitable for gas assisted injection moulding. To achieve articles with very high gloss well polished surfaces are recommended. Extrusion temperatures should not exceed 240°C.

Applications

TV-front panels and back covers, VCR fronts, internal parts for refrigerators, office and household articles. Vacuum cleaner housings; toilet flush; telephones; air conditioner housings; toys; Coextruded gloss layers.

Physical form and storage

Polystyrol 454 C is supplied as cylindrical shaped granules. It has to be kept in its original containers in cool, dry place. Avoid direct exposure to sunlight. Polystyrol 454 C can also be stored in silos.

Food legislation

If used unmodified and under appropriate processing conditions parts from Polystyrol 454 C comply with the usual requirements for food packaging. Detailed written confirmations (e.g. BGVO, FDA) are given on request. Please contact our regional sales office.

Product safety

During processing of Polystyrol 454 C small quantities of styrene monomer may be released into the atmosphere. At styrene vapour concentrations below 20 ppm no negative effects on health are expected. In our experience, the concentration of styrene does not exceed 1 ppm in well ventilated workplaces - that is where five to eight air changes per hour are made.

Note

The data contained in this publication are based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed. In order to check the availability of products please contact us or our sales agency.

Typical values ¹⁾ at 23°C	Test method ²⁾	Unit	Values
Mechanical Properties			
Tensile modulus	ISO 527-1/-2	MPa	2200
Yield strain, 50 mm/min	ISO 527-1/-2	%	1.4
Yield stress, 50 mm/min	ISO 527-1/-2	MPa	27
Nominal strain at break, 50 mm/min	ISO 527-1/-2	%	25
Flexural modulus	ISO 178	MPa	2300
Flexural strength	ISO 178	MPa	41
Shear modulus	ISO 6721-2	MPa	900
Charpy impact strength (23°C)	ISO 179/1eU	kJ/m ²	150
Charpy impact strength (-30°C)	ISO 179/1eU	kJ/m ²	120
Charpy notched impact strength (23°C)	ISO 179/1eA	kJ/m ²	16
Ball indentation hardness	ISO 2039-1	MPa	90
Force	ISO 2039-1	N	358
Duration	ISO 2039-1	s	30
Thermal properties			
Vicat softening temperature VST/B/50	ISO 306	°C	82
Vicat softening temperature VST/A/50	ISO 306	°C	91
HDT A (1.80 MPa)	ISO 75-1/-2	°C	78
HDT B (0.45 MPa)	ISO 75-1/-2	°C	82
Processing			
Melt volume-flow rate MVR 200/5	ISO 1133	cm ³ /10min	14
Processing: Injection moulding (M), Extrusion (E), Blow moulding (B)	-	-	M.E
Melt temperature, injection molding	-	°C	180 - 260
Mold temperature, injection molding	-	°C	10 - 60
Electrical properties			
Relative permittivity (100Hz)	IEC 60250	-	2.5
Relative permittivity (1 MHz)	IEC 60250	-	2.5
Volume resistivity	IEC 60093	Ohm*m	>1E16
Surface resistivity	IEC 60093	Ohm	>1E13
Electric strength K20/P50	IEC 60243-1	kV/mm	160
Optical properties			
Surface gloss	-	Skalenteile	70
Flammability			
UL 94 (d = 1,6 mm)	UL 94	class	HB
UL 94 (d = 3,2 mm)	UL 94	class	HB
IEC 65 (d = 2,4 mm)	-	-	+
Other properties			
Density	ISO 1183	kg/m ³	1022
Water absorption, equilibrium in water at 23°C	similar to ISO 62	%	<0.1
Moisture absorption, equilibrium 23°C/50% r.h.	similar to ISO 62	%	<0.1

Footnotes

1) If the product definition doesn't state otherwise.
2) Specimens according to CAMPUS.