INEOS STYROLUTION

Styrolution PS 454N

High Impact Polystyrene (HIPS)

TECHNICAL DATASHEET

DESCRIPTION

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

FEATURES

- Good balance of toughness, high flow, and heat resistance
- High gloss
- UL 94 HB

APPLICATIONS

- Injection molding parts
- Air conditioners
- Refrigerators
- Water tanks for toilet flushing

Property, Test Condition	Standard	Unit	Values
Rheological Properties			
Melt Volume Rate, 200 °C/5 kg	ISO 1133	cm³/10 min	14
Mechanical Properties			
Charpy Notched Impact Strength, 23° C	ISO 179/1eA	kJ/m²	16
Tensile Stress at Yield, 23 °C	ISO 527	MPa	27
Tensile Strain at Yield, 23 °C	ISO 527	%	1.4
Tensile Modulus	ISO 527	MPa	2200
Elongation at Break (MD)	ISO 527	%	25
Flexural Strength, 23 °C	ISO 178	MPa	41
Flexural Modulus, 23 °C	ISO 178	MPa	2300
Hardness, Ball Indentation	ISO 2039-1	MPa	90
Thermal Properties			
Vicat Softening Temperature VST/B/50 (50N, 50 °C/h)	ISO 306	°C	82
Heat Deflection Temperature A; (annealed 4 h/80 °C; 1.8 MPa)	ISO 75	°C	78
Heat Deflection Temperature B; (annealed 4 h/80 °C; 0.45 MPa)	ISO 75	°C	82
Coefficient of Linear Thermal Expansion	ISO 11359	10^{-6}/°C	80
Thermal Conductivity	DIN 52612-1	W/(m K)	0.17
Electrical Properties			

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Property, Test Condition	Standard	Unit	Values
Dielectric Constant (100 Hz)	IEC 60250	-	2.5
Dissipation Factor (100 Hz)	IEC 60250	10^{-4}	1.5
Dissipation Factor (1 MHz)	IEC 60250	10^{-4}	4
Volume Resistivity	IEC 60093	*m	$>10^{16}$
Surface Resistivity	IEC 60093		$>10^{13}$
Other Properties			
Density	ISO 1183	kg/m³	1040
Processing			
Linear Mold Shrinkage	ISO 294-4	%	0.4 - 0.7
Melt Temperature Range	ISO 294	°C	180 - 260
Mold Temperature Range	ISO 294	°C	40
Injection Velocity	ISO 294	mm/s	200

Typical values for uncolored products

SUPPLY FORM

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

PROCESSING

Styrolution PS 454N can be injection molded under different conditions depending on machinery available and articles molded. Mass temperature can be as high as 260°C. It is suitable for gas assisted injection molding. To achieve articles with very high gloss, well-polished surfaces are recommended.

PRODUCT SAFETY

During processing of Styrolution PS small quantities of styrene monomer may be released into the atmosphere. At styrene vapor concentrations below 20ppm 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 were five to eight air changes per hour are made.

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DISCLAIMER

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