

Styrolution PS 158K

General Purpose Polystyrene (GPPS)

TECHNICAL
DATASHEET

DESCRIPTION

Styrolution PS 158K is a heat resistant, rapid freezing general purpose grade. It is suitable for expanded sheet and film; for blends with high impact Styrolution PS in heat contact applications; for transparent, impact resistant applications in blends with Styrolux.

FEATURES

- High heat resistance GPPS
- High transparency

APPLICATIONS

- Replacement of SAN in several application like water filter containers, pen parts etc.
- Transparent sheet for Showcases & displays, consumer electronics, household application, photo frames, building material etc.
- Ideal material for physically or chemically foamed high-quality foamed articles, such as foam containers, labels or profiles (PSP / XPS)
- In blends with high impact polystyrene or Styrolux
- Injection molded articles

Property, Test Condition	Standard	Unit	Values
Rheological Properties			
Melt Flow Rate, 200 °C/5 kg	ISO 1133	g/10 min	3
Melt Volume Rate, 200 °C/5 kg	ISO 1133	cm ³ /10 min	3
Mechanical Properties			
Izod Notched Impact Strength, 23 °C	ISO 180/A	kJ/m ²	2.5
Charpy Notched Impact Strength, 23° C	ISO 179	kJ/m ²	3
Charpy Unnotched, 23° C	ISO 179	kJ/m ²	17
Tensile Stress at Yield, 23° C	ISO 527	MPa	55
Tensile Strain at Break, 23° C	ISO 527	%	3
Tensile Modulus	ISO 527	MPa	3300
Tensile Creep Modulus (1000h)	ISO 899	MPa	2600
Tensile Creep Modulus (1h)	ISO 899	MPa	3300
Flexural Strength	ISO 178	MPa	103

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Property, Test Condition	Standard	Unit	Values
Hardness, Ball Indentation	ISO 2039-1	MPa	150
Thermal Properties			
Vicat Softening Temperature VST/B/50 (50N, 50°C/h)	ISO 306	°C	101
Vicat Softening Temperature, B/1 (120°C/h, 10N)	ASTM D 1525	°C	108
Vicat Softening Temperature, VST/A/50 (10N, 50°C/h)	ISO 306	°C	106
Heat Deflection Temperature A; (annealed 4 h/80 °C; 1.8 MPa)	ISO 75	°C	86
Heat Deflection Temperature B; (annealed 4 h/80 °C; 0.45 MPa)	ISO 75	°C	98
Coefficient of Linear Thermal Expansion	ISO 11359	10 ^{^-6} /°C	80
Thermal Conductivity	DIN 52612-1	W/(m K)	0.17
Electrical Properties			
Dielectric Constant (100 Hz)	IEC 60250	-	2.5
Dissipation Factor (100 Hz)	IEC 60250	10 ^{^-4}	0.9
Dissipation Factor (1 MHz)	IEC 60250	10 ^{^-4}	0.5
Dielectric Strength, Short Time, 1.5 mm	IEC 60243-1	kV/mm	135
Relative Permittivity (100 Hz)	IEC 60250	-	2.5
Relative Permittivity (1 MHz)	IEC 60250	-	2.5
Volume Resistivity	IEC 60093	Ohm*m	>1E16
Surface Resistivity	IEC 60093	Ohm	>1E14
Other Properties			
Density	ISO 1183	kg/m ³	1048
Bulk Density (with external lubricant)		kg/m ³	600
Water Absorption, Saturated at 23°C	ISO 62	%	<0.1
Moisture Absorption, Equilibrium 23°C/50% RH	ISO 62	%	<0.1
Processing			
Linear Mold Shrinkage	ISO 294-4	%	0.3 - 0.6
Melt Temperature Range	ISO 294	°C	180 - 260
Mold Temperature Range	ISO 294	°C	10 - 60

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Property, Test Condition	Standard	Unit	Values
Injection Velocity	ISO 294	mm/s	200

Typical values for uncolored products

SUPPLY FORM

Styrolution PS 158K should be kept in its original containers in cool, dry place. Avoid direct exposure to sunlight. Styrolution PS 158K can be stored in silos.

PROCESSING

Styrolution PS 158K can be injection molded at temperatures between 180 and 280°C. Recommended mold temperatures are between 10 and 60°C. Extrusion melt temperature should not exceed 240°C.

PRODUCT SAFETY

During processing of Styrolution PS resins small quantities of styrene monomer may be released into the atmosphere. At styrene vapor 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. Further information can be found in our Styrolution PS safety data sheets.

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