

# 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
<b>Rheological Properties</b>			
Melt Flow Rate, 200 °C/5 kg	ISO 1133	g/10 min	3
Melt Volume Rate, 200 °C/5 kg	ISO 1133	cm <sup>3</sup> /10 min	3
<b>Mechanical Properties</b>			
Izod Notched Impact Strength, 23 °C	ISO 180/A	kJ/m <sup>2</sup>	2.5
Charpy Notched Impact Strength, 23° C	ISO 179	kJ/m <sup>2</sup>	3
Charpy Unnotched, 23° C	ISO 179	kJ/m <sup>2</sup>	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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Hardness, Ball Indentation	ISO 2039-1	MPa	150
<b>Thermal Properties</b>			
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 <sup>-6</sup> /°C	80
Thermal Conductivity	DIN 52612-1	W/(m K)	0.17
<b>Electrical Properties</b>			
Dielectric Constant (100 Hz)	IEC 60250	-	2.5
Dissipation Factor (100 Hz)	IEC 60250	10 <sup>-4</sup>	0.9
Dissipation Factor (1 MHz)	IEC 60250	10 <sup>-4</sup>	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
<b>Other Properties</b>			
Density	ISO 1183	kg/m <sup>3</sup>	1048
Bulk Density (with external lubricant)		kg/m <sup>3</sup>	600
Water Absorption, Saturated at 23°C	ISO 62	%	<0.1
Moisture Absorption, Equilibrium 23°C/50% RH	ISO 62	%	<0.1
<b>Processing</b>			
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