

Styrolution® PS 158N

PS

INEOS Styrolution

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

Rheological properties	Value	Unit	Test Standard
ISO Data			
Melt volume-flow rate, MVR	3	cm³/10min	ISO 1133
Temperature	200	°C	-
Load	5	kg	-

Mechanical Properties	Value	Unit	Test Standard
ISO Data			
Tensile Modulus	3300	MPa	ISO 527
Stress at Break	55	MPa	ISO 527
Strain at Break	3	%	ISO 527
Tensile Creep Modulus, 1h	3300	MPa	ISO 899-1
Tensile Creep Modulus, 1000h	2600	MPa	ISO 899-1
Notched Impact Strength (Charpy), +23°C	3	kJ/m²	ISO 179/1eA

Thermal Properties	Value	Unit	Test Standard
ISO Data			
Glass Transition Temperature (10°C/min)	100	°C	ISO 11357-1/-2
Temp. of deflection under load (1.80 MPa)	86	°C	ISO 75-1/-2
Temp. of deflection under load (0.45 MPa)	98	°C	ISO 75-1/-2
Vicat softening temperature, 50°C/h 50N	101	°C	ISO 306
Coeff. of Linear Therm. Expansion, parallel	80	E-6/K	ISO 11359-1/-2
Burning Behav. at 1.5 mm Nom. Thickn.	HB	class	UL 94
Thickness tested	1.5	mm	-
UL recognition	yes	-	-
Burning Behav. at thickness h	HB	class	UL 94
Thickness tested	3.2	mm	-
UL recognition	yes	-	-
Oxygen index	18	%	ISO 4589-1/-2

Electrical Properties	Value	Unit	Test Standard
ISO Data			
Relative permittivity, 100Hz	2.5	-	IEC 62631-2-1
Relative permittivity, 1MHz	2.5	-	IEC 62631-2-1
Dissipation Factor, 100Hz	0.9	E-4	IEC 62631-2-1
Dissipation Factor, 1MHz	0.5	E-4	IEC 62631-2-1
Comparative tracking index	425	-	IEC 60112

Other Properties	Value	Unit	Test Standard
ISO Data			
Density	1050	kg/m³	ISO 1183

Material Specific Properties	Value	Unit	Test Standard
ISO Data			
Viscosity number	96	cm³/g	ISO 307, 1157, 1628

Rheological calculation properties	Value	Unit	Test Standard
ISO Data			
Density of melt	936	kg/m³	-
Thermal Conductivity of Melt	0.155	W/(m K)	-
Spec. heat capacity of melt	2300	J/(kg K)	-
Ejection temperature	96	°C	-

Test specimen production	Value	Unit	Test Standard
ISO Data			
Injection Molding, melt temperature	230	°C	ISO 294
Injection Molding, mold temperature	40	°C	ISO 294

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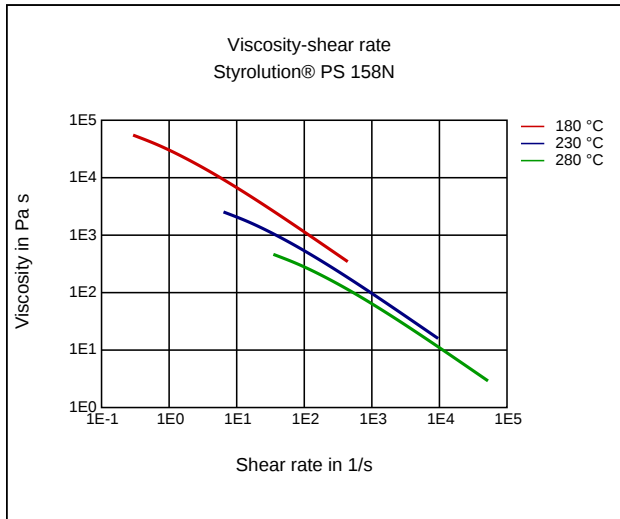
Injection Molding, injection velocity 200 mm/s ISO 294

Processing Recommendation Injection Molding

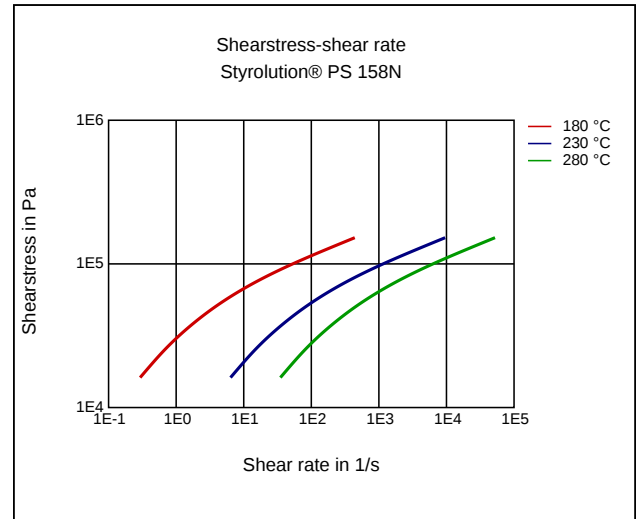
	Value	Unit	Test Standard
Melt temperature	180 - 280	°C	-
Mold temperature	10 - 60	°C	-

Diagrams

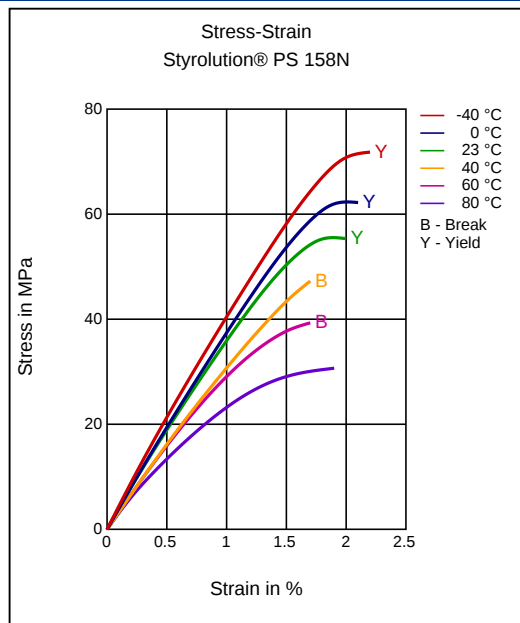
Viscosity-shear rate



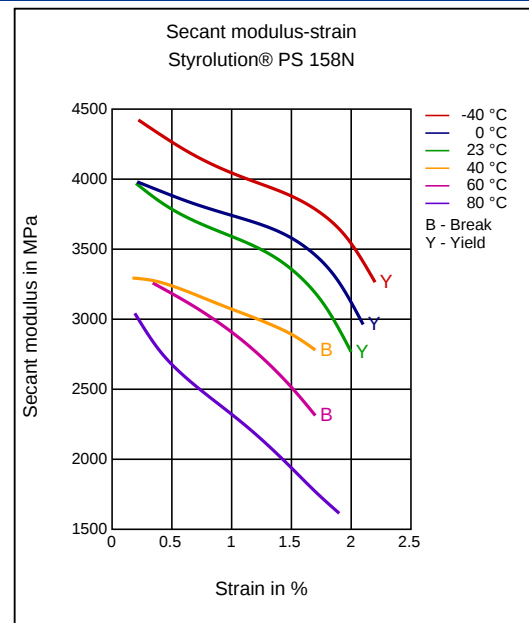
Shearstress-shear rate



Stress-strain



Secant modulus-strain

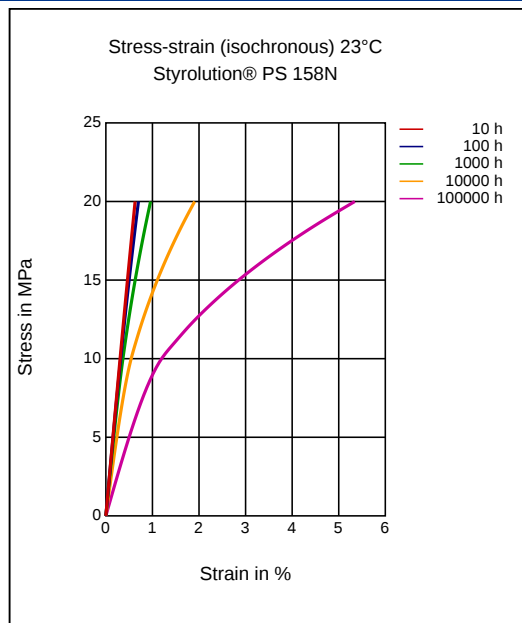


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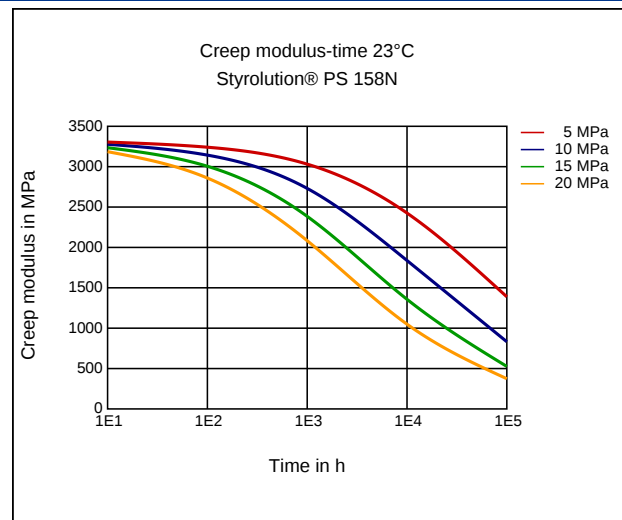
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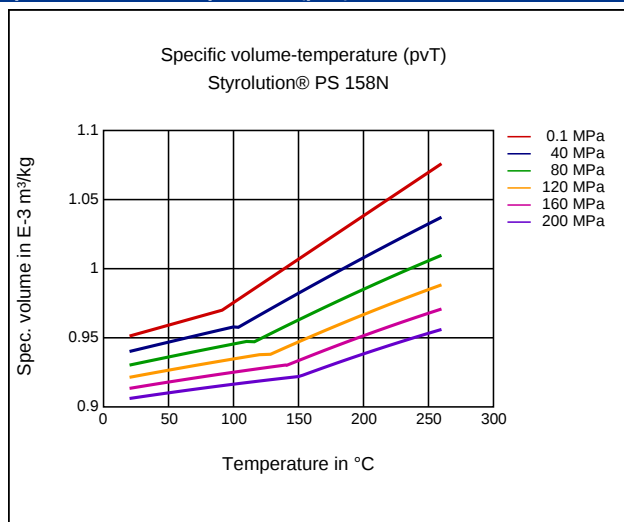
Stress-strain (isochronous) 23 °C



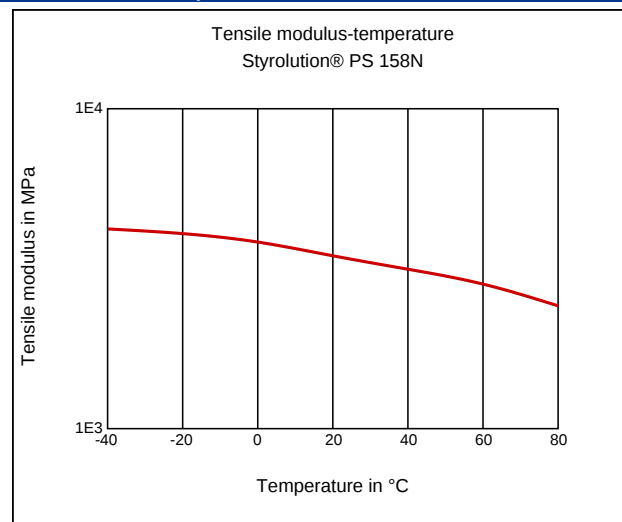
Creep modulus-time 23 °C



Specific volume-temperature (pvT)



Tensile Modulus-Temperature



Characteristics

Processing

Injection Molding, Film Extrusion, Profile Extrusion, Sheet Extrusion, Other Extrusion

Delivery form

Pellets

Special Characteristics

Transparent

Injection Molding

PROCESSING

injection molding, Melt temperature, range: 180 - 280 °C

injection molding, Melt temperature, recommended: 230 °C

injection molding, Mold temperature, range: 10 - 60 °C

injection molding, Mold temperature, recommended: 40 °C

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Polystyrol 158N can be injection molded at temperatures between 180 and 280 °C. Recommended mold temperatures are between 10 and 60 °C.

Film Extrusion

PROCESSING

Extrusion, Blown film, Melt temperature: 180 - 210 °C

Extrusion, Flat film, Melt temperature: 200 - 240 °C

Extrusion melt temperature should not exceed 240 °C.

Other Extrusion

PROCESSING

Extrusion, Pipes, Melt temperature: 180 - 210 °C

Profile extrusion

PROCESSING

Extrusion, Profiles, Melt temperature: 210 °C

Sheet Extrusion

PROCESSING

Extrusion, Plates, Melt temperature: 200 - 230 °C