

DATASHEET

PPSU

PPSU is an amorphous high-performance thermoplastic, offering better impact strength and chemical resistance than polysulphone and polyetherimide. PPSU also has superior hydrolysis resistance as measured by steam autoclaving cycles to failure, making it especially suited for repeated steam sterilisation applications.

Applications

- Medical Wands
- Endoscopic Probe Positioning Ferrule

Availability

- Colour – Black
- Type – Sheets & Rods
- Regularly produced in a wide variety of thicknesses

Typical Properties

General Properties	Method	Unit	Test Result
Physical Properties			
Colour	-	-	Black
Density	ISO 1183-1	g/cm ³	1.29
Water Absorption:			
- After 24h immersion in water of 23°C	ISO 62	mg	
- At saturation in water of 23°C	-	%	1.10
Thermal Properties			
Melting Temperature (DSC, 10°C/min)	ISO 11357 – 1/-3	°C	-
Glass Transition Temperature (DSC, 10°C/min)	ISO 11357 – 1/-2	°C	220
Thermal Conductivity at 23°C	-	W/(K.m)	0.30
Coefficient of Linear Thermal Expansion:			
- Average value between 23 and 100°C	-	W/(K.m)	55x10 ⁻⁶
- Average value between 23 and 150°C	-	W/(K.m)	55x10 ⁻⁶
- Average value above 150°C	-	W/(K.m)	65x10 ⁻⁶
Temperature of Deflection Under Load:			
- Method A: 1.8 MPa	ISO 75-1/-2	°C	205
Max Allowable Service Temperature in Air:			
- Continuously: for 5,000 to 20,000h	-	°C	180
Minimum Service Temperature	-	°C	-50
Flammability:			
- According to UL94 (3/6mm thickness)	-	-	V-0

Mechanical Properties			
Tension Test:			
- Tensile Strength	ISO 527-1/-2	MPa	83
- Tensile Strain at Yield	ISO 527-1/-2	%	8
- Tensile Strain at Break	ISO 527-1/-2	%	>50
- Tensile Modulus of Elasticity	ISO 527-1/-2	MPa	2450
Flexural Test:			
- Flexural Strength	ISO 178	MPa	108
- Flexural Modulus of Elasticity	ISO 178	MPa	
Compression Test:			
- Compressive Stress @ 1/2/5% Nominal Strain	ISO 604	MPa	21/41/83
Charpy Impact Strength - Unnotched	ISO 179-1-1eU	kJ/m ²	No break
Charpy Impact Strength - Notched	ISO 179-1-1eU	kJ/m ²	12
Rockwell Hardness	ISO 2039-2	-	90
Dynamic Coefficient of Friction	ISO 7148-2(15)	-	0.4-0.5
Wear Rate	ISO 7148-2(15)	Um/km	2500
Electrical Properties			
Electric Strength	EC 60243-1	kV/mm	25
Volume Resistivity	IEC 60093	Ohm.cm	>10E 14
Surface Resistivity	IEC 60093	Ohm	>10E 13
Relative Permittivity – at 1MHz	IEC 60250	-	3.4
Dielectric Dissipation Factor – at 1 MHz	IEC 60250	-	0.001