

Technical Data Sheet

PPSU MG black

Polyphenylsulfone, medical grade (PPSU MG)

Typical Properties

- Very high toughness and impact strength
- High resistance to repeated steam sterilisation
- High heat deflection temperature
- ISO 10993-5 tested on the semi-finished product
- Chemical resistant
- High resistance against gamma and x-ray radiation

Typical Industries

- Medical technology
- Surgical instruments and trial implants
- Endoscopy
- Ventilation technology

	Test Method	Unit	Value
General Properties			
Density	DIN EN ISO 1183-1	g / cm ³	1.29
Water absorption	DIN EN ISO 62	%	0.6
Flammability (thickness 3 mm / 6 mm)	UL 94		V0 / V0
Mechanical Properties			
Yield stress	DIN EN ISO 527	MPa	77
Elongation at break	DIN EN ISO 527	%	30
Tensile modulus of elasticity	DIN EN ISO 527	MPa	2500
Notched impact strength	DIN EN ISO 179	kJ / m ²	10
Thermal Properties			
Melting temperature	ISO 11357-3	°C	– (amorphous)
Glass transition temperature	ISO 11357-3	°C	220
Thermal conductivity	DIN 52612-1	W / (m * K)	0.35
Coefficient of linear thermal expansion	DIN 53752	10 ⁻⁶ / K	55
Service temperature, long term	Average	°C	-50 ... 180
Service temperature, short term (max.)	Average	°C	210
Heat deflection temperature	DIN EN ISO 75, method A, HDT	°C	205
Electrical Properties			
Dielectric constant	IEC 60250		3.44

	Test Method	Unit	Value
Volume resistivity	DIN EN 62631-3-1	$\Omega \cdot \text{cm}$	10^{15}
Dielectric strength	IEC 60243	kV / mm	15

This material is not intended for use in medical products that remain in the human body for more than 24 hours, or that are intended to remain in contact with internal human tissue or blood for more than 24 hours. The short-term maximum service temperature only applies to applications with very low mechanical stress over a few hours. The long-term maximum service temperature is based on thermal ageing of the material through oxidation, which results in a decrease of the mechanical properties. The value stated is the temperature that, after at least 5,000 hours, causes a 50% decrease in tensile strength (measured at room temperature) compared with the initial value. This value does not indicate the mechanical strength of the material at high service temperatures. In thick-walled parts, oxidation at high temperatures only affects the surface layer; the core of the part always remains unaffected. The minimum service temperature is largely determined by possible impact or shock loading in use; the values stated refer to low impact stress. The electrical properties were measured on natural-coloured, dry material. Other colourings or moist material can cause significant changes to the electrical properties. The values stated are average values secured through continuous statistical testing. They conform to the requirements of DIN EN 15860 and serve only as information about our products and as an aid to material selection. We do not thereby provide a legally binding guarantee of specific properties or of suitability for particular applications. Since the properties also depend on the dimensions of the semi-finished product and the degree of crystallisation, the actual property values of a given product may deviate somewhat from the figures stated.

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