

Chemical Designation

PPSU (Polyphenylsulfone)

Colour

ivory opaque

Density

1.31 g/cm³

Main features

- high thermal and mechanical capacity
- good heat deflection temperature
- hydrolysis and superheated steam resistant
- good impact strength
- high stiffness
- high strength
- good chemical resistance
- high gamma radiation resistance

Target Industries

- medical technology
- chemical technology
- electronics
- food technology
- mechanical engineering
- automotive industry

Mechanical properties	parameter	value	unit	norm	comment	
Tensile strength	50mm/min	81	MPa	DIN EN ISO 527-2	(1) For tensile test: specimen type 1b (2) For flexural test: support span 64mm, norm specimen. (3) Specimen 10x10x10mm (4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression. (5) For Charpy test: support span 64mm, norm specimen. n.b. = not broken	
Modulus of elasticity (tensile test)	1mm/min	2300	MPa	DIN EN ISO 527-2		
Tensile strength at yield	50mm/min	81	MPa	DIN EN ISO 527-2		
Elongation at yield (tensile test)	50mm/min	7	%	DIN EN ISO 527-2		
Elongation at break (tensile test)	50mm/min	> 50	%	DIN EN ISO 527-2		
Flexural strength	2mm/min, 10 N	107	MPa	DIN EN ISO 178		
Modulus of elasticity (flexural test)	2mm/min, 10 N	2300	MPa	DIN EN ISO 178		
Compression strength	1% / 2% / 5% 5mm/min, 10 N	18/30/66	MPa	EN ISO 604		
Compression modulus	5mm/min, 10 N	2000	MPa	EN ISO 604		
Impact strength (Charpy)	max. 7.5J	n.b.	kJ/m ²	DIN EN ISO 179-1eU		
Notched impact strength (Charpy)	max. 7.5J	13	kJ/m ²	DIN EN ISO 179-1eA		
Shore hardness	D	83		DIN EN ISO 868		
Thermal properties	parameter	value	unit	norm	comment	
Glass transition temperature		218	°C	DIN EN ISO 11357	(1) Found in public sources. (2) n.a. = not applicable (3) Found in public sources. Individual testing regarding application conditions is mandatory.	
Melting temperature		n.a.	°C	DIN EN ISO 11357		
Service temperature	short term	190	°C			
Service temperature	long term	170	°C			
Thermal expansion (CLTE)	23-60°C, long.	6	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2		
Thermal expansion (CLTE)	23-100°C, long.	6	10 ⁻⁵ K ⁻¹	DIN EN ISO 11359-1;2		
Specific heat		1.1	J/(g*K)	ISO 22007-4:2008		
Thermal conductivity		0.25	W/(K*m)	ISO 22007-4:2008		
Electrical properties	parameter	value	unit	norm		comment
surface resistivity		10 ¹⁴	Ω	-		
volume resistivity		10 ¹⁴	Ω*cm	-		
Other properties	parameter	value	unit	norm	comment	
Water absorption	24h / 96h (23°C)	0.1 / 0.2	%	DIN EN ISO 62	(1) Ø ca. 50mm, h=13mm (2) + good resistance (3) - poor resistance	
Resistance to hot water/ bases		+		-		
Resistance to weathering		-		-		
Flammability (UL94)	listed (value at 0.75mm)	V0		DIN IEC 60695-11-10;		

