

Chemical Designation

PSU (Polysulfone)

Colour

amber transparent

Density

1.24 g/cm³

Main features

- good heat deflection temperature
- high strength
- high stiffness
- high dimensional stability
- electrically insulating
- resistance against high energy radiation
- good weldable

Target Industries

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

Mechanical properties	parameter	value	unit	norm	comment
Tensile strength	50mm/min	89	MPa	DIN EN ISO 527-2	(1) For tensile test: specimen type 1b
Modulus of elasticity (tensile test)	1mm/min	2700	MPa	DIN EN ISO 527-2	1) (2) For flexural test: support span 64mm, norm specimen.
Tensile strength at yield	50mm/min	89	MPa	DIN EN ISO 527-2	(3) Specimen 10x10x10mm
Elongation at yield (tensile test)	50mm/min	5	%	DIN EN ISO 527-2	(4) Specimen 10x10x50mm, modulus range between 0.5 and 1% compression.
Elongation at break (tensile test)	50mm/min	15	%	DIN EN ISO 527-2	(5) For Charpy test: support span 64mm, norm specimen.
Flexural strength	2mm/min, 10 N	122	MPa	DIN EN ISO 178	2)
Modulus of elasticity (flexural test)	2mm/min, 10 N	2600	MPa	DIN EN ISO 178	
Compression strength	1% / 2% / 5% 5mm/min, 10 N	15/28/75	MPa	EN ISO 604	3)
Compression modulus	5mm/min, 10 N	2300	MPa	EN ISO 604	4)
Impact strength (Charpy)	max. 7.5J	175	kJ/m ²	DIN EN ISO 179-1eU	5)
Notched impact strength (Charpy)	max. 7.5J	4	kJ/m ²	DIN EN ISO 179-1eA	
Shore hardness	D	85		DIN EN ISO 868	
Thermal properties	parameter	value	unit	norm	comment
Glass transition temperature		188	°C	DIN EN ISO 11357	1) (1) Found in public sources.
Melting temperature		n.a.	°C	DIN EN ISO 11357	2) (2) n.a. = not applicable
Service temperature	short term	180	°C		3) (3) Found in public sources.
Service temperature	long term	160	°C		Individual testing regarding application conditions is mandatory.
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		1.2	J/(g*K)	ISO 22007-4:2008	
Thermal conductivity		0.21	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)	0.06 / 0.1	%	DIN EN ISO 62	1) (1) Ø ca. 50mm, h=13mm
Resistance to hot water/ bases		+		-	2) (2) + good resistance
Resistance to weathering		-		-	3) (3) - poor resistance
Flammability (UL94)	corresponding to	V0		DIN IEC 60695-11-10;	4) (4) Corresponding means no listing at UL (yellow card). The information might be taken from resin, stock shape or estimation. Individual testing regarding application conditions is mandatory.

