

Datasheet AS ZL 2100



PPSU is an amorphous high performance thermoplastic with very good mechanical, electrical and thermal properties for use at higher operating temperatures with low mechanical loads.

AS ZL 2100 offers superior hydrolysis resistance when compared to other amorphous thermoplastics as measured by steam autoclaving cycles to failure. This makes it an excellent choice for medical devices. It also resists common acids and bases, including commercial washing solutions, over a broad temperature range. It withstands up to 210 °C. Parts machined out of PPSU have very high dimensional stability.

PPSU has better impact and chemical resistance than PSU and PEI and has virtually unlimited steam sterilizability.

Used in: Medical, pharmaceutical equipment, electronic, wastewater and water treatment.

Applications: Sterilization trays, dental and surgical instrument handles, endoscopic probe positioning ferrules, medical wands, fluid handling coupling and fitting applications, end caps, dental and surgical instrument handles.

(1): Data of the resin only.

(2): Made by a pin/rotating disc test according DIN ISO 7148-2 under following conditions: Ra = 0.35 – 0.45 µm (steel disc), v = 0.3 m/s, p = 3 N/mm² and time T>16h.

Dry: Dried at 80 °C and 1 mbar until weight is constant (moisture content less than 0.2%).

Moist: After storage in a standard atmosphere of 23 °C and 50% relative humidity (DIN 50014) until saturation.

Availability*: In stock.

Availability **: Not in stock.

Material	
Material	Polyphenylsulfone
Color	Amber

Availability**	Unit	Value
Rod diameter	mm	10-150
Tube O.D.	mm	-
Sheet thickness	mm	10-100

Physical Properties	Test Standard	Unit	Condition of Specimen	Value
Mass density (method D and E)	ISO 1183	g/cm ³	Dry	1.29
Moisture absorption at 23 °C and 50% RH (saturation)	ISO 62	%		0.37
Water absorption at 23 °C (saturation)	ISO 62	%		1.1

Mechanical Properties	Test Standard	Unit	Condition of Specimen	Value
Tensile strength at break	ISO 527	MPa	Dry	70
Tensile strength at break	ISO 527	MPa	Moist	-
Elongation at break	ISO 527	%	Dry	>60
Elongation at break	ISO 527	%	Moist	-
Modulus of elasticity in tension	ISO 527	MPa	Dry	2300
Modulus of elasticity in tension	ISO 527	MPa	Moist	-
Charpy impact strength (+23 °C)	ISO 179/IeU	kJ/m ²	Dry	No break
Charpy impact strength (-40 °C)	ISO 179/IeU	kJ/m ²	Dry	-
Charpy impact strength (notched)	ISO 179/IeA	kJ/m ²	Dry	-
Charpy impact strength (notched)		kJ/m ²	Moist	-
Hardness shore scale D	ISO 868		Dry	84
Time yield limit σ 1/1000 (23 °C/50% RH)	ISO 899	MPa	Moist	-
Time yield limit σ 1/1000 (100 °C)	ISO 899	MPa	Dry	-
Apparent modulus E C/1000 20 (23 °C/50% RH)	ISO 899	MPa	Moist	-

Electrical Properties	Test Standard	Unit	Condition of Specimen	Value
Dielectric constant 1 MHz	IEC 250		Dry	-
Dielectric constant	IEC 250		Moist	-
Dissipation factor tan δ (1 MHz)	IEC 250		Dry	-
Dissipation factor tan δ	IEC 250		Moist	-
Dielectric strength	IEC 243	kV/mm	Dry	-
Dielectric strength	IEC 243	kV/mm	Moist	-
Volume resistivity	IEC 93	$\Omega \cdot \text{cm}$	Dry	>10 ¹³
Volume resistivity	IEC 93	$\Omega \cdot \text{cm}$	Moist	-
Surface resistivity ROA	IEC 93	Ω	Dry	>10 ¹⁵
Surface resistivity ROA	IEC 93	Ω	Moist	-
Resistance to tracking (KA/KB method)	IEC 112		Dry/Moist	-
Resistance to tracking (KC method)	IEC 112		Dry/Moist	-

Thermal Properties	Test Standard	Unit	Condition of Specimen	Value
Heat distortion temperature (method A)	ISO 75	°C	Dry	207
Heat distortion temperature (method B)	ISO 75	°C	Dry	-
Melting point (method A)	ISO 3146	°C		225
Max. service temperature for few hours operation		°C		-
TEP 5.000 hours (50% of tensile strength) ⁽¹⁾	IEC 216	°C		-
TEP 20.000 hours (50% of tensile strength) ⁽¹⁾	IEC 216	°C		-
Thermal coefficient of linear expansion	DIN 53752	1/K·10 ⁻⁵	Dry	5.6
Thermal conductivity (method A)		W/(K·m)	Dry	-
Specific heat	IEC 1006	J/(g·K)	Dry	-
Fire performance (flameability according VDE)	VDE 0304		Dry	-
Fire performance (flameability of interior materials in passenger cars h>1 mm)	FMVSS 302	mm/min	Moist	-
Fire performance (flameability according UL standards, thickness of specimen 1.6 mm)	UL 94			V0

Friction Properties	Test Standard	Unit	Condition of Specimen	Value
Resistance to wear ⁽²⁾	ISO 7148-2	$\mu\text{m}/\text{km}$	Dry	-