

## Datasheet AS ZL 1900



PPS is a lower cost alternative to PEEK in applications at somewhat lower temperatures. PPS is a semi-crystalline engineering thermoplastic suitable for components demanding thermal stability up to 200 °C, high dimensional stability and offers broad resistance to chemicals. PPS has good creep resistance at elevated temperatures. Moisture absorption in AS ZL 1900 is negligible and so ensures that electrical insulating properties such as dielectric constant and dissipation (loss) factor are unaffected by wet or humid application conditions. AS ZL 1900 has no known solvents below 200 °C and is inert to steam, strong bases, fuels and acids. Unfilled PPS is not usually considered for bearing or other wear applications, but it has shown superior wear resistance in such applications involving aggressive chemical environments. PPS products are inherently flame retardant.

(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/mm<sup>2</sup> 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	Polyphenylenesulfide
Color	Beige

Availability**	Unit	Value
Rod diameter	mm	10-60
Tube O.D.	mm	-
Sheet thickness	mm	10-50

Physical Properties	Test Standard	Unit	Condition of Specimen	Value
Mass density (method D and E)	ISO 1183	g/cm <sup>3</sup>	Dry	1.35
Moisture absorption at 23 °C and 50% RH (saturation)	ISO 62	%		-
Water absorption at 23 °C (saturation)	ISO 62	%		0.02

Mechanical Properties	Test Standard	Unit	Condition of Specimen	Value
Tensile strength at break	ISO 527	MPa	Dry	33
Tensile strength at break	ISO 527	MPa	Moist	-
Elongation at break	ISO 527	%	Dry	-
Elongation at break	ISO 527	%	Moist	-
Modulus of elasticity in tension	ISO 527	MPa	Dry	4200
Modulus of elasticity in tension	ISO 527	MPa	Moist	-
Charpy impact strength (+23 °C)	ISO 179/IeU	kJ/m <sup>2</sup>	Dry	No break
Charpy impact strength (-40 °C)	ISO 179/IeU	kJ/m <sup>2</sup>	Dry	-
Charpy impact strength (notched)	ISO 179/IeA	kJ/m <sup>2</sup>	Dry	-
Charpy impact strength (notched)		kJ/m <sup>2</sup>	Moist	-
Hardness shore scale D	ISO 868		Dry	-
Time yield limit $\sigma$ 1/1000 (23 °C/50% RH)	ISO 899	MPa	Moist	-
Time yield limit $\sigma$ 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 $\delta$ (1 MHz)	IEC 250		Dry	-
Dissipation factor tan $\delta$	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	$>10^{12}$
Volume resistivity	IEC 93	$\Omega \cdot \text{cm}$	Moist	-
Surface resistivity ROA	IEC 93	$\Omega$	Dry	$>10^{12}$
Surface resistivity ROA	IEC 93	$\Omega$	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	95
Heat distortion temperature (method B)	ISO 75	°C	Dry	115
Melting point (method A)	ISO 3146	°C		280
Max. service temperature for few hours operation		°C		-
TEP 5.000 hours (50% of tensile strength) <sup>(1)</sup>	IEC 216	°C		-
TEP 20.000 hours (50% of tensile strength) <sup>(1)</sup>	IEC 216	°C		-
Thermal coefficient of linear expansion	DIN 53752	1/K $\cdot$ 10 <sup>-5</sup>	Dry	5.5
Thermal conductivity (method A)		W/(K $\cdot$ m)	Dry	-
Specific heat	IEC 1006	J/(g $\cdot$ 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 <sup>(2)</sup>	ISO 7148-2	$\mu\text{m}/\text{km}$	Dry	-