

Datasheet AS ZL 1000 GF30



PEI is a high strength amorphous thermoplastic polymer and performs in continuous use up to 170 °C paired with an excellent flame resistance (UL 94 V-0) and low smoke generation.

The glass reinforced AS ZL 1000 GF30 (PEI filled with 30% glass fiber) yields a product with an exceptional strength-to-weight ratio and increased tensile strength with even greater rigidity and dimensional stability and low creep. PEI can also be custom made with 10% (AS ZL 1000 GF30) glass fiber filling.

Good impact resistance, although chemical attack under stress might lead to cracking.

Used in: Medical, electrical, electronic and semiconductor, automotive, aerospace and specialty applications.

Applications: Load-bearing components, structural probes, microwave applications, replacing glass in medical lamps, reusable medical devices, manifolds resistant to daily sanitation, high voltage circuit breaker housings, electrical insulators, electrical hardware components, integrated-circuit chip carriers for accelerated testing at high temperatures, non-combustible plenum connectors, high-temperature bobbins, coils and fuse blocks, under the hood automotive components, connector clamps for printed-wiring boards, jet-engine components.

(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	PEI filled with 30% glass fiber
Color	Grey

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 ³	Dry	1.51
Moisture absorption at 23 °C and 50% RH (saturation)	ISO 62	%		-
Water absorption at 23 °C (saturation)	ISO 62	%		-

Mechanical Properties	Test Standard	Unit	Condition of Specimen	Value
Tensile strength at break	ISO 527	MPa	Dry	169
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	9300
Modulus of elasticity in tension	ISO 527	MPa	Moist	-
Charpy impact strength (+23 °C)	ISO 179/IeU	kJ/m ²	Dry	-
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	93
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	3.4
Dielectric constant	IEC 250		Moist	-
Dissipation factor tan δ (1 MHz)	IEC 250		Dry	0.0023
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	210
Heat distortion temperature (method B)	ISO 75	°C	Dry	212
Melting point (method A)	ISO 3146	°C		-
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 \cdot 10 ⁻⁵	Dry	-
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 ⁽²⁾	ISO 7148-2	$\mu\text{m}/\text{km}$	Dry	-