

Datasheet AS ZL 1820

AS ZL 1820 is a thermoplastic fluorine polymer with very high chemical resistance and in addition PCTFE has the highest hardness, strength and stiffness of the fluorine plastics. It is form stable, can easily be mechanically processed and can be used in a wide temperature range.

(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	Teflon
Color	-

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

Physical Properties	Test Standard	Unit	Condition of Specimen	Value
Mass density (method D and E)	ISO 1183	g/cm ³	Dry	-
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	-
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	-
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	-
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 $\tan \delta$ (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	-
Volume resistivity	IEC 93	$\Omega \cdot \text{cm}$	Moist	-
Surface resistivity ROA	IEC 93	Ω	Dry	-
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	$^{\circ}\text{C}$	Dry	-
Heat distortion temperature (method B)	ISO 75	$^{\circ}\text{C}$	Dry	-
Melting point (method A)	ISO 3146	$^{\circ}\text{C}$		-
Max. service temperature for few hours operation		$^{\circ}\text{C}$		-
TEP 5.000 hours (50% of tensile strength) ⁽¹⁾	IEC 216	$^{\circ}\text{C}$		-
TEP 20.000 hours (50% of tensile strength) ⁽¹⁾	IEC 216	$^{\circ}\text{C}$		-
Thermal coefficient of linear expansion	DIN 53752	$1/\text{K} \cdot 10^{-5}$	Dry	-
Thermal conductivity (method A)		$\text{W}/(\text{K} \cdot \text{m})$	Dry	-
Specific heat	IEC 1006	$\text{J}/(\text{g} \cdot \text{K})$	Dry	-
Fire performance (flameability according VDE)	VDE 0304		Dry	-
Fire performance (flameability of interior materials in passenger cars $h > 1 \text{ mm}$)	FMVSS 302	mm/min	Moist	-
Fire performance (flameability according UL standards, thickness of specimen 1.6 mm)	UL 94			-

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