

Datasheet AS ZL 250



PA 6.6 noted for its high temperature resistance and high tensile strength. It is the hardest and most rigid type of extruded nylon. Main characteristics are high resistance to fuels, oils, greases, most organic solvents and alkalis. Moisture absorption is lower than for PA 6.

Used in: Parts exposed to mechanical stress and strain under elevated temperatures.

Applications: Friction bearings, gears and guide rails, cams and cam followers, guides and clutch parts, sleeves, valve seats and articles subjected to high loads and/or for high temperature.

(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	Nylon 6.6
Color	Ivory

Availability*	Unit	Value
Rod diameter	mm	6-150
Tube O.D.	mm	25-265
Sheet thickness	mm	2-60

Physical Properties	Test Standard	Unit	Condition of Specimen	Value
Mass density (method D and E)	ISO 1183	g/cm ³	Dry	1.15
Moisture absorption at 23 °C and 50% RH (saturation)	ISO 62	%		2.8±0.3
Water absorption at 23 °C (saturation)	ISO 62	%		8.0±0.5

Mechanical Properties	Test Standard	Unit	Condition of Specimen	Value
Tensile strength at break	ISO 527	MPa	Dry	80
Tensile strength at break	ISO 527	MPa	Moist	60
Elongation at break	ISO 527	%	Dry	50
Elongation at break	ISO 527	%	Moist	150
Modulus of elasticity in tension	ISO 527	MPa	Dry	3200
Modulus of elasticity in tension	ISO 527	MPa	Moist	1600
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	No break
Charpy impact strength (notched)	ISO 179/IeA	kJ/m ²	Dry	80
Charpy impact strength (notched)		kJ/m ²	Moist	-
Hardness shore scale D	ISO 868		Dry	80
Time yield limit σ 1/1000 (23 °C/50% RH)	ISO 899	MPa	Moist	6
Time yield limit σ 1/1000 (100 °C)	ISO 899	MPa	Dry	3.5
Apparent modulus E C/1000 20 (23 °C/50% RH)	ISO 899	MPa	Moist	400

Electrical Properties	Test Standard	Unit	Condition of Specimen	Value
Dielectric constant 1 MHz	IEC 250		Dry	3.2
Dielectric constant	IEC 250		Moist	5
Dissipation factor tan δ (1 MHz)	IEC 250		Dry	0.026
Dissipation factor tan δ	IEC 250		Moist	0.2
Dielectric strength	IEC 243	kV/mm	Dry	120
Dielectric strength	IEC 243	kV/mm	Moist	80
Volume resistivity	IEC 93	$\Omega \cdot \text{cm}$	Dry	10 ¹⁵
Volume resistivity	IEC 93	$\Omega \cdot \text{cm}$	Moist	10 ¹²
Surface resistivity ROA	IEC 93	Ω	Dry	10 ¹³
Surface resistivity ROA	IEC 93	Ω	Moist	10 ¹⁰
Resistance to tracking (KA/KB method)	IEC 112		Dry/Moist	KB>600
Resistance to tracking (KC method)	IEC 112		Dry/Moist	KC>600

Thermal Properties	Test Standard	Unit	Condition of Specimen	Value
Heat distortion temperature (method A)	ISO 75	°C	Dry	100
Heat distortion temperature (method B)	ISO 75	°C	Dry	>200
Melting point (method A)	ISO 3146	°C		255
Max. service temperature for few hours operation		°C		≤200
TEP 5.000 hours (50% of tensile strength) ⁽¹⁾	IEC 216	°C		95
TEP 20.000 hours (50% of tensile strength) ⁽¹⁾	IEC 216	°C		80
Thermal coefficient of linear expansion	DIN 53752	1/K·10 ⁻⁵	Dry	7-10
Thermal conductivity (method A)		W/(K·m)	Dry	0.23
Specific heat	IEC 1006	J/(g·K)	Dry	1.7
Fire performance (flameability according VDE)	VDE 0304		Dry	11 b
Fire performance (flameability of interior materials in passenger cars h>1 mm)	FMVSS 302	mm/min	Moist	<100
Fire performance (flameability according UL standards, thickness of specimen 1.6 mm)	UL 94			HB

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