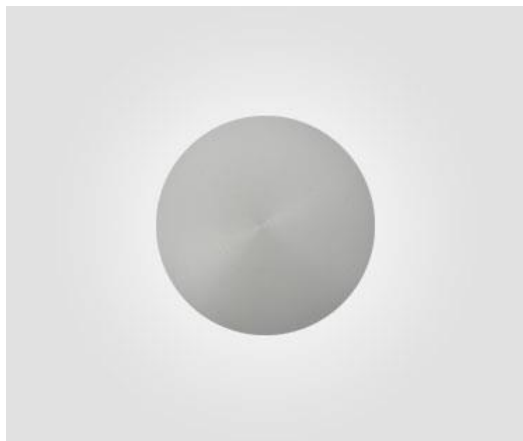


Datasheet AS ZL 202



PA 6 extruded is a tough material with high resistance to abrasion and impact. PA 6 is commonly used as a substitution material for bronze, aluminum and other non-ferrous metals, as it has significant weight advantages. AS ZL 202 has a specific gravity of 1,15 g/cm³ and bronze has 8,8 g/cm³ making the comparative volume price very attractive. Using PA 6 also reduces lubrication requirements and is non-abrasive to mating surfaces. It features good mechanical properties. Nylons can absorb up to 8% water (by weight) under humidity or submerged in water. This increases the excellent shock and vibration resistance but can also lead to dimensional changes. Mechanical, electrical and dimensional properties are accordingly influenced by moisture absorption. AS ZL 202 is approved for contact with food (BfR, FDA). All these important characteristics add up to impressive cost performance ratios.

AS ZL 202 can also be custom made in various colors.

Quick facts: Material for general purpose wear and structural parts which need a good balance of strength and toughness.

Used in: Pulp and paper industry, offshore and marine, textile, general machine building, food industry, material handling, electronics, construction, mining, aerospace and many more.

Applications: Sliding parts, wear components, ball bearing races, friction bearings, pulleys, bogies, rope pulleys, sheaves, rollers, wheels, gears, slipper blocks, vibration dampeners and absorbers, bowling pin setters, scrapers, spiral conveyors.

(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
Color	White

Availability*	Unit	Value
Rod diameter	mm	6-310
Tube O.D.	mm	25-310
Sheet thickness	mm	0.3-100

Physical Properties	Test Standard	Unit	Condition of Specimen	Value
Mass density (method D and E)	ISO 1183	g/cm ³	Dry	1.13-1.15
Moisture absorption at 23 °C and 50% RH (saturation)	ISO 62	%		3.0±0.4
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	50
Elongation at break	ISO 527	%	Dry	50-100
Elongation at break	ISO 527	%	Moist	200
Modulus of elasticity in tension	ISO 527	MPa	Dry	3000
Modulus of elasticity in tension	ISO 527	MPa	Moist	1500
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	70
Charpy impact strength (notched)		kJ/m ²	Moist	-
Hardness shore scale D	ISO 868		Dry	82
Time yield limit σ 1/1000 (23 °C/50% RH)	ISO 899	MPa	Moist	5.5
Time yield limit σ 1/1000 (100 °C)	ISO 899	MPa	Dry	2.5
Apparent modulus E C/1000 20 (23 °C/50% RH)	ISO 899	MPa	Moist	230

Electrical Properties	Test Standard	Unit	Condition of Specimen	Value
Dielectric constant 1 MHz	IEC 250		Dry	3.5
Dielectric constant	IEC 250		Moist	7
Dissipation factor tan δ (1 MHz)	IEC 250		Dry	0.023
Dissipation factor tan δ	IEC 250		Moist	0.3
Dielectric strength	IEC 243	kV/mm	Dry	100
Dielectric strength	IEC 243	kV/mm	Moist	60
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	55-75
Heat distortion temperature (method B)	ISO 75	°C	Dry	>160
Melting point (method A)	ISO 3146	°C		220
Max. service temperature for few hours operation		°C		≤180
TEP 5.000 hours (50% of tensile strength) ⁽¹⁾	IEC 216	°C		90
TEP 20.000 hours (50% of tensile strength) ⁽¹⁾	IEC 216	°C		75
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	-