

# Datenblatt | Data sheet

## Plastic ball PA

Semicrystalline thermoplastic Nylon@ 6/Nylon@ 6.6 polymer balls, they provide low weight, high corrosion, wear and abrasion resistance. They are auto lubricant and with good ductility, hardness and electric insulating properties. Useful even for high temperature applications.

PA 6 and PA 6.6 are very similar, PA 6.6 has better mechanical properties (stiffness, wear and heat resistance) and slightly lower water absorption. These improved properties compared to PA 6 lead to slightly higher costs.

### Field of application

Special valves, low load bearings, flow meters, switches, handgrips, medical and industrial applications.

### Corrosion resistance

Nylon@ balls are insoluble into diluted mineral acids and in most organic acids. They are resisting to alkalis, petroleum products, greases, inorganic salt solutions, low gradation alcohols, motor oil, transmission fluids, methanol, ketones, esters. They do not resist to strong acids and bases.

### Material

Technical name	Alternative Name	Abbreviation
Polyamide	Nylon® 6 / Nylon® 6.6	PA 6 / PA 6.6

### Physical / mechanical / thermal / electrical / magnetic characteristics

Characteristic	Symbol	Unit	Type	Note	Value
Density	$\delta$	g/cm <sup>3</sup>	Physical	Ambient temperature	1,11
Modulus of Elasticity	E	GPa	Mechanical		2500
Friction coefficient	$\mu$	-	Mechanical	Ambient temperature	0,25
Specific heat	C	J/kg*K	Thermal	Ambient temperature	2,10
Coefficient of linear thermal expansion	$\alpha$	10 <sup>-6</sup> /°C	Thermal	( $\Delta T = 0 - 100$ °C)	87,5
Thermal conductivity	$\lambda$	W/(m*K)	Thermal	Ambient temperature	0,25
Volume resistivity	$\rho$	$\Omega$ *m	Electrical	-	> 10 <sup>13</sup>
Relative magnetic permeability	$\mu$	-	Magnetical	Diamagnetic	<~1

### Technical characteristics

Characteristic	Type	Unit	Value	Unit	Value
Hardness	Mechanical	Shore D	75 - 85	-	-
Yield point load in compression	Mechanical	MPa	86 - 103	psi*10 <sup>3</sup>	12,4 - 15
Operating temperature	Thermal	°C	-30 - 80	°F	-22 - 176

### Available with

Diameter min/max (mm)	Diameter min/max (in)	Precision grade
1,500 - 160,000	1/16 - 14	0 / I / II / III / IV