

Datenblatt | Data sheet

Plastic ball Torlon®

Ball made of amorphous thermoplastic with very good mechanical properties and the highest values for stiffness / toughness among plastics. Suitable for use at high temperatures. Very good resistance to creep strain. Used as electrical insulators. Torlon® 4301 has excellent abrasion and wear resistance. Chromatic appearance may vary.

Field of application

Special bearings for oil-free operation at high temperatures for which high wear resistance is required, automotive component manufacturing, aerospace, electronic, marine and sport fishing industries.

Corrosion resistance

Resistant: Aliphatic and aromatic, chlorinated and fluorinated hydrocarbons, most acids at moderate temperatures and lubricants used in the automotive and aerospace sectors

Not resistant: Saturated vapors, strong bases and acids with high temperatures

Material

Technical name	Alternative Name	Abbreviation
Polyamidimid	Torlon® 4301	PAI + Graphit + PTFE
Polyamidimid	Torlon® 4203L	PAI

Physical / mechanical / thermal / electrical / magnetic characteristics

Characteristic	Symbol	Unit	Type	Note	Value
Density	δ	g/cm ³	Physical	Ambient temperature	1,42
Modulus of Elasticity	E	GPa	Mechanical	4203L 4301	4135 6800
Friction coefficient	μ	-	Mechanical	Ambient temperature	0,21
Specific heat	C	J/kg*K	Thermal	Ambient temperature	0,34
Coefficient of linear thermal expansion	α	10 ⁻⁶ /°C	Thermal	($\Delta T = 0 - 100$ °C)	28,0
Thermal conductivity	λ	W/(m*K)	Thermal	4203L 4301	0,26 0,54
Volume resistivity	ρ	Ω *m	Electrical	-	> 10 ¹³
Relative magnetic permeability	μ	-	Magnetical	Diamagnetic	<~1

Technical characteristics

Characteristic	Type	Unit	Value	Unit	Value
Hardness	Mechanical	Shore D	80 - 85	-	-
Yield point load in compression	Mechanical	MPa	150 - 220	psi*10 ³	22 - 32
Operating temperature	Thermal	°C	-196 - 200	°F	-320,8 - 392

Available with

Diameter min/max (mm)	Diameter min/max (in)	Precision grade
1,500 - 100,000	1/16 - 4	I / II / III / IV

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