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Plastic ball PMMA

Amorphous thermoplastics balls, provide good hardness, transparency, abrasion and outdoor resistance. Fair mechanical properties, shock resistance and corrosion resistance.

Field of application

Acrylic balls are used in check valves, visual flow equipment, laboratory applications, contact juggling. They could be considered as cheaper choice than polycarbonate and lighter than glass.

Corrosion resistance

Good resistance against aqueous solutions, diluted inorganic acids, aliphatic hydrocarbons, ammonia, alkalis, greases and oils, balls are not resisting against aromatic hydrocarbons, halogens, ketones, esters, ethyl and methyl alcohols.

Material

Technical name	Alternative Name	Abbreviation
Polymethyl-methacrylate	Acrylic, Plexiglass	PMMA

Physical / mechanical / thermal / electrical / magnetic characteristics

Characteristic	Symbol	Unit	Type	Note	Value
Density	δ	g/cm^3	Physical	Ambient temperature	1,18
Modulus of Elasticity	E	MPa	Mechanical		2910
Friction coefficient	μ	-	Mechanical	Ambient temperature	0,45
Specific heat	C	J/kg*K	Thermal	Ambient temperature	0,30
Coefficient of linear thermal expansion	α	10^{-6}/°C	Thermal	(ΔT = 0 - 100 °C)	67
Thermal conductivity	λ	W/(m*K)	Thermal	Ambient temperature	0,18
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	84 - 87	-	-
Yield point load in compression	Mechanical	MPa	80 - 120	$psi*10^3$	11 - 17
Operating temperature	Thermal	°C	-40 - 90	°F	-40 - 194

Available with

Diameter min/max (mm)	Diameter min/max (in)	Precision grade
1,500 - 100,000	1/16 - 4	0 / I / II / III / IV / V

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