

RUBY BALLS

Monocrystalline aluminum oxide based ceramics balls, the typical red colour of ruby is due to small amounts of impurities. They provide excellent hardness, corrosion resistance and high temperatures resistance properties, good wear resistance and dimensional stability. They are auto lubricant and easy polishing materials. Balls are manufactured according to A.F.B.M.A. standards.

Applications

Special bearings, pumps and valves (chemical pumps, check valves), measurement instruments, pen tips, optical and probing applications, flow meters.

Commercial name	Other name	Formula	Oxide %
Monocrystalline Aluminum Trioxide	Ruby	Al ₂ O ₃ (+Cr ₂ O ₃ /Si ₂ O ₃)	98,0-99,99

Physical / mechanical / thermal / electric / magnetic properties

Property	Symbol	U.o.M.	Type	Notes	Values
Density	δ	g/cm ³	Physical	Room temp.	3,98
Young's modulus	E	GPa	Mechanical	-	420
Friction coefficient	μ	-	Mechanical	Room temp.	0,15
Specific heat	c	J/kg-K	Thermal	Room temp.	750
Coefficient of linear thermal expansion	α	10 ⁻⁶ /°C	Thermal	(ΔT=0-100°C)	5,8
Thermal conductivity	λ	W/(m-K)	Thermal	Room temp.	39,0
Volume resistivity	ρ	Ω*m	Electric	-	> 10 ¹⁴
Relative magnetic permeability	μ	-	Magnetic	Diamagnetic	<-1

Technical data

Property	Type	U.o.M.	Values	U.o.M.	Values
Hardness	Mechanical	HV	1570 - 2170	-	-
Ultimate compressive strength	Mechanical	MPa	2030 - 2130	psix10 ³	294 - 309
Service temperature	Thermal	°C	-196 / 1750	°F	-320,8 / 3250

Range

Diameters (min/max)	U.o.M.	Diameters (min/max)	U.o.M.	Precision Grade (AFBMA)
0,127 - 14,986	mm	0.005 - 0.590	"	G3-5-10-15-25-50-100-200

Corrosion Resistance

Good corrosion resistance in contact with acids (even strong acids), alkalis and halogens, even at high temperatures.