

ALUMINUM OXIDE (Al₂O₃) BALLS

Polycrystalline structure light weight oxide balls, they provide good mechanical characteristics, corrosion, abrasion and heat resistance. They are auto lubricant and good electric insulators. Natural colour white/ivory. Balls are manufactured according to ASTM F 2094 Class II/III standards.

Special bearings, check valves, pumps and valves that operate in aggressive environments, petroleum pumps, flow meters, measurement instruments, medical devices.			
Aluminium Trioxide	Alumina	Al ₂ O ₃	99.3 - 99.9

Physical / mechanical / thermal / electric / magnetic properties

Property	Symbol	U.o.M.	Type	Notes	Values
Density	δ	[g/cm ³]	Physical	Room temp.	3.90
Young's modulus	E	[GPa]	Mechanical	-	370
Friction coefficient	μ	-	Mechanical	Room temp.	0.2
Specific heat	c	[J/kg-K]	Thermal	Room temp.	795
Coefficient of linear thermal expansion	α	[10 ⁻⁶ /°C]	Thermal	(ΔT=0-100°C)	7.5
Thermal conductivity	λ	[W/(m·K)]	Thermal	Room temp.	31.0
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]	1250 - 1700	-	-
Ultimate compressive strength	Mechanical	[MPa]	2100 - 2600	[psix10 ³]	304 - 377
Service temperature	Thermal	[°C]	-100 / 1600	[°F]	-148 / 2912

Range

Diameters (min/max)	U.o.M.	Diameters (min/max)	U.o.M.	Precision Grade (ISO 3290-2)
0.300 - 100.000	[mm]	1/64 - 4	["]	G3-G5-10-16-20-24-28-40-60-100

Excellent corrosion resistance in water, salt solutions, acids, they are resistant even into aggressive environments except hydrofluoric, hydrochloric acids, hot sulphuric acid and strong alkaline solutions.