

Datenblatt | Data sheet

Aluminum oxide

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.

Field of application

Special bearings, check valves, pumps and valves that operate in aggressive environments, petroleum pumps, flow meters, measurement instruments, medical devices.

Corrosion resistance

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

Material

Technical name	Alternative Name	Abbreviation	% Oxide
Dialuminium trioxide	Aluminum oxide	Al ₂ O ₃	99,00 - 99,99

Physical / mechanical / thermal / electrical / magnetic characteristics

Characteristic	Symbol	Unit	Type	Note	Value
Density	δ	g/cm ³	Physical	Environmental temp.	3,90
Modulus of Elasticity	E	GPa	Mechanical		365
Friction coefficient	μ	-	Mechanical	Environmental temp.	0,20
Spezific heat	C	J/kg*K	Thermal	Environmental temp.	795
coefficient of linear thermal expansion	α	10 ⁻⁶ /°C	Thermal	($\Delta T = 0 - 100$ °C)	7,8
Thermal conductivity	λ	W/(m*K)	Thermal	Environmental temp.	31,0
Volume resistivity	ρ	Ω *m	Electrical	-	> 10 ¹⁴
Relative magnetic permeability	μ	-	Magnetical	Diamagnetic	<~1

Technical characteristics

Characteristic	Type	Unit	Value	Unit	Value
Hardness	Mechanical	HV	1250 - 1700	-	-
Ultimate compressive strength	Mechanical	MPa	2100 - 2600	psi * 10 ³	304 - 377
Operating temperature	Thermal	° C	-100 - 1600	° F	-148 - 2912

Available with

Diameter min/max (mm)	Diameter min/max (in)	Precision grade
0,300 - 100,000	1/64 - 4	G 10 / 16 / 20 / 25 / 28 / 40 / 60 / 100