ALUMINIUM OXIDE Al_2O_3

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

APPLICATIONS

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

CHEMICAL COMPOSITION

Commercial name	Other name	Formula	Oxide / %
Aluminiumtrioxide	Alumina	Al_2O_3	99,0 – 99,99

PHYSICAL / MECHANICAL / THERMAL / ELECTRIC / MAGNETIC PROPERTIES

Property	Symbol	U.o.M.	Type	Notes	Values
Density	δ	[g/cm^3]	Physical	Room temp.	3,90
Youngs modulus	E	[GPa]	Mechanical	-	365
Friction coefficient	μ	-	Mechanical	Room temp	0,20
Spezific Heat	C	[J/kg-K]	Thermal	Room temp.	795
Coefficient of thermal expansion	α	[10^{-6}/ºC]	Thermal	(ΔT=0-100°C)	7,8
Thermal conductivity	λ	[W/(m·K)]	Thermal	Room temp.	31,0
Volume resistivity	ρ	[Ω*m]	Electric	-	>10^{14}
Rel. magnetic permeability	μ	-	Magnetical	Diamagnetic	<~1

TECHNICAL DATA

Property	Type	U.o.M.	Values	U.o.M	Values
Hardness	Mechanical	[HV]]	1400-1600	-	-
Ult. compressive strength	Mechanical	[MPa]	2300- 4000	[psix103]	-148 / 2912
Service Temperature	Thermal	[ºC]	0 – 1200	[ºF]	304 – 377

QUALITY AND DIAMETER

DRM mm	U.o.M.	DRM "	U.o.M.	Quality DIN5401 / ISO 3290
0,300 - 200,000	[mm]	1/64 – 8	["]	G5-G100

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.