

ALUMINA OXIDE CERAMIC BALLS

Ceramic balls are particularly well suited for use in extremely harsh environments where high temperatures, corrosive and erosive substances are present.

Standard 99.5% alumina oxide ceramic balls have proven performance in wear, heat and corrosive environments, as well as, in maintaining dimensional stability at temperatures up to 20000°F.

Alumina resists oxidation and is tolerant to water, salt solutions, and many chemicals and acids, but is not suitable for use in hydrochloric or hydrofluoric acids or strong alkaline solutions.

Typical applications include pumps, valves and flow meters.

Alumina Oxide Ceramic Balls: Available Grades and Sizes		
Grade	Size Range in Inches and Millimeters	
C10*	1/8 - 1 25.400	3.175 -
C24*	1/8 - 1 25.400	3.175 -
48	1/8 - 2 50.800	3.175 -
100	1/8 - 4 101.600	3.175 -
200	1/8 - 6 152.400	3.175 -

Alumina Oxide - *Alumina Oxide is specified as grade C10 and C24 which is equal to grade 10 and 24, except surface finish is less than or equal to 3Ra.

Balls per Pound		
Size		Balls per Pound
Inches	Millimeters	
1/8	3.175	6896.55
5/32	3.968	3558.72
3/16	4.762	2061.86
7/32	5.556	1297.02
1/4	6.350	870.32
9/32	7.143	610.50
5/16	7.937	445.43
3/8	9.525	257.20
13/32	10.318	203.17
7/16	11.112	166.11
1/2	12.700	108.62
5/8	15.875	56.39
3/4	19.050	33.01
1	25.400	13.85

Material Analysis	
Property/Material	Alumina Oxide - 99.5% pure
Chemistry(wt%).	99.5% Al ₂ O ₃ - .5% Other
Hardness kg/mm ³	1700 H _v
Density (gm/cc).	3.87
Transverse Rupture Strength (psi)	45,000
Ultimate Compressive Strength (psi)	>330,000
Ultimate Tensile Strength (psi).	31,000
Modulus of Elasticity (psi).	53 x 10 ⁶
Maximum Work Temperature	1400 ⁰ C
Fracture Toughness (K _{1C}) kg/mm ^{1.5} .	13.5