

CERAMIC VALVES



For MARUWA ceramic valves, high performance and high reliability are realized by means of our original material technology, press technology, and high-precision processing technology developed over many years. Sliding parts other than valves are available through our surface polishing technology.

The sliding properties can be further improved by applying carbon coating developed by our company.

■ Features

- High strength, resistance against wear
Excellent in resistance against wear, and hardness second to diamond.
- Thermal conductivity, heat resistance, thermal shock resistance
High thermal conductivity, excellent in heat resistance/thermal shock resistance.
- Chemical resistance
Excellent resistance against chemicals not to be damaged by acid and alkali.

■ Application

- Faucet valve
- Sliding parts

■ Characteristics

Material name			Alumina (Al ₂ O ₃)		
Product No.			AP960	AP90T	
Coloration			White	Greenish white	
Alumina purity		%	96	90	
Apparent density		kg/m ³	3.7×10 ³	3.7×10 ³	
Water absorption		%	0	0	
Mechanical characteristics	Vickers hardness	GPa	15.7	13.7	
	Bending strength	MPa	313	294	
	Compressive strength	MPa	1961	—	
Thermal characteristics	Coefficient of linear expansion	40~400°C ×10 ⁻⁶ /°C	7.3	6.2	
	Thermal conductivity	25°C W/(m•K)	23.8	17.9	
	Specific heat	J / (kg • K)	0.75×10 ³	0.75×10 ³	
	Thermal shock resistance	°C	200	200	
Electrical characteristics	Dielectric strength	kV/mm	10	10	
	Volume resistivity	20°C	Ω • cm	10 ¹⁴	—
		300°C		10 ¹³	—
		500°C		10 ¹⁰	—
Dielectric constant	1MHz	9.4	—		

*The above value is a reference by test piece measurement.
The characteristic value is different depending on the shapes of the product.