

Typical Properties

Properties of Aluminum Oxide Composites with SiC Microfiber

Property	Units	Wt (%) SiC in Al ₂ O ₃		Alumina (99.5%)	Zirconia (TZP)	Tungsten Carbide (with 6% Co)
		7.5 % CT-8	25 % HA9S			
Density	g/cm ³	3.77	3.72	3.89	6.07	14.5
Flexural Strength (4 pt bend)	MPa	450	550	380	1350	2400
Young's Modulus	GPa	385	400	360	205	610
Vickers Hardness	GPa	18.3	20.7	17.0	13.5	20
Fracture Toughness (Indentation)	MPa·m ^{1/2}	4.5	8.5	4.0	8.5	15
Thermal Conductivity	W / m·K	26	35	25	2.2	94
Coefficient of Thermal Expansion	10 ⁻⁶ / °C	7.2	6.8	7.6	10.0	5.0
Thermal Shock Resistance (ΔT)	°C	400	900	200	350	-
Service Temperature (no load)	°C	600-1700	600-1700	1700	2000	400

