

### Ceramic Properties Standard

		Units	AIN 140	AIN 180	
MECHANICAL	Density	theoretical	g/cm <sup>3</sup>	3.26	3.32
	Density	measured	g/cm <sup>3</sup>	3.24	3.30
	Flexural Strength		MPa	350	> 300
	Young's Modulus		GPa	310	310
	Compressive Strength		GPa	2.1	> 2.0
	Fracture Toughness		MPa·m <sup>1/2</sup>	3.35 ± 0.2	3.35 ± 0.2
THERMAL	Thermal Conductivity	20° C	W/m K	140 ± 10	180 ± 10
	Coefficient of Thermal Expansion	RT - 100° C		3.6	3.6
		RT - 300° C	10 <sup>-6</sup> K <sup>-1</sup>	4.6	4.6
		RT - 500° C		5.2	5.2
		RT - 1000° C		5.6	5.6
	Specific Heat		J/kg·K	738 ± 20	738 ± 20
Thermal Shock Resistance		-	excellent	excellent	
ELECTRICAL	Dielectric Strength	1.5 mm	kV	≥ 25 ①	≥ 20 ①
	Dielectric Constant	1 MHz	-	8.6	8.6
	Dielectric Loss (tan δ)	1 MHz	-	0.5 x 10 <sup>-3</sup>	0.5 x 10 <sup>-3</sup>
	Volume Resistivity		Ω·cm	> 10 <sup>12</sup>	> 10 <sup>12</sup>

① Not linear scalable. The chart is intended to illustrate typical properties. Property values vary with method of manufacture, size, and shape of part. Data contained herein is not to be construed as absolute and does not constitute a representation or warranty for which CoorsTek assumes legal responsibility. CoorsTek and Amazing Solutions are registered trademarks of CoorsTek, Inc.

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