



502-1810



502-1820



502-1830



502-1830

DENSE CERAMICS — BN COMPOSITES

Material Properties ¹	502-1810	502-1820	502-1830
Composition	BN + Al ₂ O ₃	BN + AlN	BN + ZrO ₂
Binder	B ₂ O ₃	B ₂ O ₃	B ₂ O ₃
Thermal Properties			
Max Use Temperature			
Oxidizing, °F, (°C)	1830 (1000)	1830 (1000)	1830 (1000)
Vacuum, °F, (°C)	3180 (1750)	3270 (1800)	3180 (1750)
Inert, °F, (°C)	3180 (1750)	3270 (1800)	3180 (1750)
Coefficient Thermal Expansion, in/in/°F x 10 ⁻⁶ (°C)	1.1 (2.0)	1.6 (2.8)	2.0 (3.5)
Thermal Conductivity, W/m-K	30	85	30
Mechanical Properties			
Compressive Strength, psi (MPa)	21,025 (145)	27,725 (205)	31,900 (220)
Flexural Strength, psi (MPa)	9,425 (65)	12,325 (85)	13,050 (90)
Electrical Properties			
Volume Resistivity, ohm-cm	> 1 × 10 ¹³	> 1 × 10 ¹³	1 × 10 ¹²
Dielectric Constant, 1 MHz	3.8	7.2	8.5
Physical Properties			
Density, g/cc	2.25–2.35	2.75–2.85	2.90–3.00
Water Absorption, %	1.8	1.3	1.2
Color	Light Grey	Grey	Grey