

### **BASIC PROPERTIES**

- AlN resists to numerous metal welding (ferrous alloys and super alloys)
- It has a good resistance to thermal shock
- It is a good electrical insulator and has a good thermal conductivity.

### **APPLICATIONS**

Electronic application  
Microelectronic (LSI , portes capteurs, high frequency models)  
Naval radio systems  
Defense systems  
Railways systems (inverters for driving systems)  
Aviation systems (telecommunication, research satellites)  
Environmental: émission control

<b>MATERIAL</b>		<b>ALUMINIUM NITRIDE</b>
Chemical Formula		AlN
Aspect / color		Grey / black
Porosity		0 (Impervious)
<b>Mechanical</b>		<b>Measuring unit</b>
Poisson's ratio	-	0,25
Hardness	Mohs	5
Hardness	Vickers	1200
Hardness	Knoop	1170
Young modulus	GPa	300
Compression resistance	MPa	2068
Flexion resistance	MPa	428
Mechanical resistance (3pts flexion) at 20°C	MPa	300
Crushing resistance at 20°C	MPa	2100
Traction resistance at 20°C	MPa	190
Fracture toughness	MPa.m <sup>1/2</sup>	3,5
<b>Physical</b>		
Maximum temperature use (inert atmosphere)	°C	1600
Absolute density	g/cm <sup>3</sup>	3,3
Density	g/cm <sup>3</sup>	3,3
Water absorption	%	0
<b>Electrical</b>		
Electrical resistivity at 20°C	Ohm, m	> 1013
Electrical resistivity	Wcm	1014
Dielectric constant at 1 MHz	-	8 - 9,1
Dielectric strength	kV/mm	15
Loss tangent for 1 MHz	Hz	5x10 <sup>-4</sup>
<b>Thermal</b>		
Specific heat at 20°C	cal/g.°C	0,25
Thermal conductivity at 20°C	W/m.°K	82,30
Thermal conductivity at 500°C	W/m.°K	-
Thermal shock resistance	Δ T°C	400

*\*These values are for informational purposes only and do not bind company's responsibility.*