

## Sapphal® U High purity (99.9%) Translucent Alumina

To Our Customers:

For your benefit, the following is a copy of the Material Properties Sheet provided to us by one of our International Suppliers.

Thank you for your business, we appreciate you very much. Thermal Support

<b>Sapphal® U</b>			
<b>High purity (99.9%) Translucent Alumina</b>			
<b>Properties</b>		<b>Units</b>	<b>Performance</b>
Density		g/cm <sup>3</sup>	3.98
Water absorption		%	0
Crystal Size	Average	micron	20
Color			Translucent
Gas permeability			0
Flexural strength	800°	Mpa	285
Elastic modulus	20°C	Gpa	>390
Compressive strength	20°C	Mpa	>2500
Fracture toughness	K	MPa.m <sup>1/2</sup>	4-5
Hardness	Vickers	kg/mm <sup>2</sup>	1700
Poisson ratio	20°C		0.24
Thermal conductivity	20°C	W/m.K	35
Coefficient of thermal expansion	25-1000°C	1x10 <sup>-6</sup> /°C	8
Specific heat	100°C	J/kg.K	880
Thermal shock resistance	ΔT	°C	200
Maximum Use Temperature		°C	1800
Dielectric strength	.8mm	Ac-kV/mm	23
Dielectric loss	1 MHz 25°C		1x 10 <sup>-5</sup>
Dielectric constant	1 MHz 25°C		9.9

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 Thermal Support or Our Supplier assumes legal responsibility. Close control of values of most properties can be maintained if specified.