STL-100
ALUMINUM NITRIDE LOSSY DIELECTRICS

STL-100 aluminum nitride-silicon carbide (AlN-SiC) composite lossy dielectrics are vacuum compatible ceramic microwave absorbers that are developed as drop-in replacements for beryllia-silicon carbide (BeO-SiC) composites at a more economical cost and without BeO's toxicity concerns for high power microwave applications.

Sienna's STL-100 lossy dielectrics can be designed to meet specific microwave energy absorption and frequency requirements by varying their dielectric properties (dielectric constant, loss tangent) through compositional adjustments.

Sienna's STL-100 lossy dielectrics offer:

- Customizable dielectric properties to meet specific absorption and frequency requirements
- Temperature independent loss characteristics up to 500°C
- Thermal conductivity that is comparable to or better than BeO-SiC composites
- No out-gassing in vacuum
- High mechanical strength

These attributes make Sienna's STL-100 lossy dielectrics the best choices as high performance microwave absorbers for a wide range of vacuum electron devices.

- Loss loads and HOM Absorbers (wedges, rings) in Particle Accelerators
- Severes and Terminations in high power microwave tubes
- Loss buttons in coupled cavity microwave tubes

Contact us for applications assistance, and for fast prototyping and production needs.

425-485-7272
425-485-8651 fax
www.siennatech.com
19501 - 144th Ave. NE, Suite F-500
Woodinville, WA 98072

SIENNA TECHNOLOGIES Inc.®
providing solutions through advanced materials

STL-100
AIN LOSSY DIELECTRIC PROPERTIES

	STL-100U3	STL-100U7	STL-100F	STL-100HTC
Composition	AIN - SiC (Composite)	AIN - SiC (Composite)	AIN - SiC (Composite)	AIN - SiC (Composite)
Density, g/cm^3	3.30	3.28	3.24	3.25
Outgassing	No	No	No	No
Thermal Conductivity, W/m•K	95±10	90±10	55±5	120±10
Thermal Expansion Coefficient, X10^{-6}/°C	4.5	4.5	4.5	4.5
Dielectric Constant 6 GHz	8.85	9.45	25	25
Loss Tangent 6 GHz	0.018	0.03	0.32	0.21
Flexural Strength, MPa			650	410
Elastic Modulus, GPa	320	325	360	360
Hardness, GPa	12	12	16	16
Application	Lossy Dielectric, Replacement for BeO-SiC and MgO-SiC Composites	Lossy Dielectric, Replacement for BeO-SiC and MgO-SiC Composites	Lossy Dielectric, Replacement for BeO-SiC Composites, HOM Absorbers, Loss Buttons	Lossy Dielectric, Replacement for BeO-SiC Composites, HOM Absorbers, Severes, Teminations, Wedges
Additional Attributes	• Properties can be tailored by changing composition.	• Properties can be tailored by changing composition.	• Properties can be tailored by changing composition.	• Properties can be tailored by changing composition. • High thermal conductivity

SIENNA TECHNOLOGIES Inc.®
providing solutions through advanced materials

425-485-7272
425-485-8651 fax
www.siennatech.com
19501 - 144th Ave. NE, Suite F-500
Woodinville, WA 98072