

### LOW LOSS LOW-K DIELECTRIC MATERIAL



Eccostock LoK is a low dielectric constant, low loss and low weight thermosetting plastic for RF and microwave insulation. It weighs only about half that of polystyrene and one quarter that of polytetrafluorethylene.

Eccostock LoK has better dimensional stability than other low loss plastics. It will not cold flow, nor will it flow when heat is applied. Soldering iron temperatures will not soften Eccostock LoK, only slightly degrade in the immediate area of contact.

It is completely unicellular and is unaffected by moisture.

### FEATURES AND BENEFITS

- Low dielectric constant
- Lightweight
- Good dimensional stability

### MARKETS

- Commercial Telecom
- Security and Defense

### SPECIFICATIONS

TYPICAL PROPERTIES	ECCOSTOCK LOK
Temperature Range °C (°F)	-70 to 150 (-94 to 302)
Frequency	60 Hz to 10 Ghz
Density g/cc	0.54
Dielectric Constant	1.7
Dielectric Strength, volts/mil (kv/mm)	300 (11.8)
Dissipation Factor	<0.004
Volume Resistivity, ohm-cm	10 <sup>14</sup>
Flexural Strength, kg/cm <sup>2</sup> (psi)	420 (6,000)
Coefficient of Linear Expansion, per°C (°F)	50 x 10 <sup>-6</sup> (28 x 10 <sup>-6</sup> )
Thermal Conductivity W/mK	0.4
Water absorption (%gain in 24h at 25°C)	0.1

*Data for design engineer guidance only. Observed performance varies in application. Engineers are reminded to test the material in application.*

### APPLICATIONS

- Eccostock LoK is specifically designed for use in coaxial, waveguide and antenna support problems. Due to the low dielectric constant, reflections in transmission lines are minimized.
- RF coils wound on Eccostock LoK exhibit higher Q than when wound on polystyrene or other plastic stock.

## AVAILABILITY

- Eccostock LoK is available in the following standard sizes:
  - Sheets 30.5 x 30.5cm (12" x 12") in thicknesses of 0.32, 0.64, 0.95, 1.27, 1.59, 1.91, 2.54, 3.81, 5.08, 6.35 & 7.62 cm (1/8, 1/4, 3/8, 1/2, 5/8, 3/4, 1.0, 1.5, 2.0, 2.5 & 3.0")
  - Rods 30.5 cm (12") long in diameters of 0.32, 0.64, 0.95, 1.27, 1.59, 1.91, 2.54, 3.81, 5.08, 6.35 & 7.62 cm (1/8, 1/4, 3/8, 1/2, 5/8, 3/4, 1.0, 1.5, 2.0, 2.5 & 3.0").
  - Bars 30.5 cm (12") long in squares of 0.64, 0.95, 1.27, 1.59, 1.91, 2.54, 3.81 & 5.08 cm (1/4, 3/8, 1/2, 5/8, 3/4, 1.0, 1.5 & 2.0").
- Other sizes, shapes, thicknesses, and configurations are available on special order.

## INSTRUCTIONS FOR USE

- Machinability of Eccostock LoK is excellent.
- Gumming does not occur and automatic screw machine operations are possible with it.