EMERSON & CUMING MICROWAVE PRODUCTS

RoHS Compliant

ECCOSTOCK® HiK500F

High Temperature, Low Loss, Adjusted Dielectric Constant Stock

Material Characteristics

- ECCOSTOCK® HiK500F is a series of high temperature, low loss plastic stock with adjusted dielectric constants up to 30
- Does not support fungal growth per MIL-STD-810E
- Low out gassing properties for space applications
- Low water absorption

Applications

- Since water absorption is low, ECCOSTOCK® HiK500F can be used in outdoor applications
- ECCOSTOCK® HiK500F is primarily used in place of ECCOSTOCK® HiK where increased temperature handling is required

Availability

- ECCOSTOCK® HiK500F is available in the following dielectric constants: 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 16, 20, 25 & 30
- Sheets: 12" x 12" (30.5cm x 30.5cm) in thicknesses of 1/8, 1/4, 3/8, 1/2, 5/8, 3/4, 1.0, 1.5, 2.0, 2.5 & 3.0" (0.32, 0.64, 0.95, 1.27, 1.59, 1.91, 2.54, 3.81, 5.08, 6.35 & 7.62 cm)
- Rods: 12" long (30.5cm) in diameters of 1/8, 1/4, 3/8, 1/2, 5/8, 3/4, 1.0, 1.5, 2.0, 2.5 & 3.0" (0.32, 0.64, 0.95, 1.27, 1.59, 1.91, 2.54, 3.81, 5.08, 6.35 & 7.62 cm)
- Bars: 12" long (30.5cm) in squares of 1/4, 3/8, 1/2, 5/8, 3/4, 1.0, 1.5 & 2.0" (0.64, 0.95, 1.27, 1.59, 1.91, 2.54, 3.81 & 5.08 cm)
- Other sizes, shapes, thicknesses, dielectrics, and configurations are available on special order
- Upon special requests, custom shapes may be available with a Pressure Sensitive Adhesive (PSA)

Related E&C Products

- ECCOSTOCK® HiK - A similar material to our ECCOSTOCK® HiK500, but with a lower temperature capability
- ECCOSTOCK® HiK500F can be bonded to itself using ECCOSTOCK® HiK Cement

Machining Recommendations

- ECCOSTOCK® HiK500F must be machined using diamond blades. Carbide tools are not recommended and may break due to the hardness of this material. Water solution cooling agents are also highly recommended

Typical Properties

Appearance	White, opaque
Temperature Range* °F (°C)	-69 to 400 (-56 to 204)
Dielectric Accuracy, K<16 (K>16)	± 3% (± 10%)
Specific Gravity	2.2
Dissipation Factor, 1 to 10 GHz	<0.002
Volume Resistivity, ohm-cm	$>10^{14}$
Dielectric Strength, volts/mil	>300
Flexural Strength, psi (kg/cm^2)	10,000 (703)
Izod Impact, ft-lb/inch of notch	0.3
Coefficient of Linear Expansion	36 x 10^{-6} °C
%TML	0.47
%CVCM	0.041
Weight of HiK500 K=10 (1" x 12" x 12"), lbs	13
Weight of HiK500 K=20 (1" x 12" x 12"), lbs	16
Weight of HiK500 K=30 (1" x 12" x 12"), lbs	18

Properties will vary to a degree with the dielectric constant. Typical values for the middle of the dielectric constant range are given above
*Physical and electrical properties are stable after continuous exposure at 510°F for a minimum of 40 hours.