

ECCOSTOCK[®] CPE

Cross-Linked Polyethylene Rod and Sheet Stock

Material Characteristics

- Cross-linked polyethylene rod and sheet stock
- The material is thermosetting; it will not flow even when subjected to excessive and prolonged heat. The surface may darken with no effect on the bulk properties of the material
- Physical properties of ECCOSTOCK[®] CPE are similar to those of polyethylene at room temperature
- It can be used as a direct substitute for polytetrafluoroethylene with a consequent weight and cost savings

Applications

- ECCOSTOCK[®] CPE is used for insulators, cavity tuning probes, patch antennas, and dielectric support pieces

Availability

- ECCOSTOCK[®] CPE is available in the following standard sizes:
- 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)
- Other sizes, shapes, thicknesses, and configurations are available on special order
- Upon special requests, custom shapes may be available with a Pressure Sensitive Adhesive (PSA)

Machining

- ECCOSTOCK[®] CPE is easy to machine and a smooth low friction surface is readily obtainable. It will not gum on machining which can be done with standard cutting and grinding tools

Typical Properties

Appearance	Ivory, opaque stock
Service Temperature, °F (°C)	<400 (<204)
Dielectric Constant, 100 Hz to 10 GHz	2.4
Dissipation Factor, 100 Hz to 10 GHz	<0.0007
Insulation Resistance, ohm-cm	>10 ¹⁴
Specific Gravity	0.98
Coefficient of Linear Expansion, (cm/cm/°C)	90 x 10 ⁻⁶
Thermal Expansion, per °F (per °C)	5.6 x 10 ⁻⁵ (10 x 10 ⁻⁵)
Tensile Strength, psi (kg/cm ²)	2,600 (182)
Tensile Modulus, psi (kg/cm ²)	40,000 (2,800)
Flexural Yield, psi (kg/cm ²)	5,400 (378)
Flexural Modulus, psi (kg/cm ²)	500,000 (35,000)
Water absorption, % gain in 24 hours at 25°C	<0.01
%TML	1.89
%CVCM	0.111