

# PEN Film

**Formula:** PEN

**Thickness:** 0.05mm

**Length 1:** 300mm

**Length 2:** 300mm

**Structure:** Biaxially Oriented

**Transparency:** Transparent

**Colour:** Clear

**CAS Number:** 24968-11-4

**UOM Code:** 038-463-59

**SKU:** 1000005179-group

**Product Code:** ES36-FM-000150

## Material Properties for Polymers

### Chemical Resistance

Element	Value
Acids - concentrated	Good-Poor
Acids - dilute	Good
Alcohols	Good
Alkalis	Good
Aromatic hydrocarbons	Good
Greases and Oils	Good
Halogenated Hydrocarbons	Good
Ketones	Good

### Mechanical Properties

Element	Value
Coefficient of friction	0.27- biax film
Elongation at break( % )	60- biax film
Tensile modulus( GPa )	5-5.5- biax film
Tensile strength( MPa )	200- biax film

### Electrical Properties

<b>Element</b>	<b>Value</b>
Dielectric constant @1MHz	3.2@10KHz
Dissipation factor @ 1kHz	0.005
Dissipation factor @ 1MHz	0.0048@10KHz
Dielectric strength( kV mm <sup>-1</sup> )	160@0.075mm
Surface resistivity( Ohm/sq )	10 <sup>1?</sup>
Volume resistivity( Ohmcm )	10 <sup>1?</sup>

## **Physical Properties**

<b>Element</b>	<b>Value</b>
Flammability	VTM-2 - UL94, 0.075mm
Resistance to Ultra-violet	Fair
Optical transmission( % )	84@0.075mm
Water absorption( % )	0.4
Density( gcm <sup>-3</sup> )	1.36

## **Thermal Properties**

<b>Element</b>	<b>Value</b>
Upper working temperature( C )	155
Thermal conductivity( W m <sup>-1</sup> K <sup>-1</sup> )	0.15@23°C
Coefficient of thermal expansion( x10 <sup>-6</sup> K <sup>-1</sup> )	20-21- biax film