

# Electrical Grade Polyamide/imide Film

**Grade:** Electrical Grade

**Formula:** PAI

**Thickness:** 9.5mm

**Length 1:** 100mm

**Length 2:** 100mm

**Colour:** Brown

**UOM Code:** 189-369-28

**SKU:** 1000027653-group

**Product Code:** AM31-SH-000100

## Material Properties for Polymers

### Chemical Resistance

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

### Electrical Properties

Element	Value
Dielectric constant @ 1MHz	3.9-5.4
Dissipation factor @ 1MHz	0.03-0.042
Dielectric strength( kV mm <sup>-1</sup> )	23at 1mm
Surface resistivity( Ohm/sq )	8-50 x 10 <sup>12</sup>
Volume resistivity( Ohmcm )	0.08-2 x 10 <sup>12</sup>

### Physical Properties

<b>Element</b>	<b>Value</b>
Flammability	V0
Radiation resistance	Good
Resistance to Ultra-violet	Good
Limiting oxygen index( % )	44-45
Water absorption - equilibrium( % )	0.3
Water absorption - over 24 hours( % )	0.3
Density( gcm <sup>3</sup> )	1.42-1.46

## **Mechanical Properties**

<b>Element</b>	<b>Value</b>
Hardness - Rockwell	E72-86
Poisson's ratio	0.38
Elongation at break( % )	7-15
Tensile modulus( GPa )	4.5-6.8
Izod impact strength( J m <sup>-1</sup> )	60-140- notched
Tensile strength( MPa )	110-190

## **Thermal Properties**

<b>Element</b>	<b>Value</b>
Heat-deflection temperature - 1.8MPa( C )	278-9
Lower working temperature( C )	-200
Upper working temperature( C )	200-260
Specific heat( J K <sup>-1</sup> kg <sup>-1</sup> )	1000
Thermal conductivity( W m <sup>-1</sup> K <sup>-1</sup> )	0.26-0.54@23°C
Coefficient of thermal expansion( x10 <sup>-5</sup> K <sup>-1</sup> )	25-31

## **Pultrusions**

<b>Element</b>	<b>Value</b>
Compressive strength( MPa )	170-220