

# Additive Free Polymer PS Disk

**Grade:** Additive Free Polymer

**Formula:** PS

**Thickness:** 0.05mm

**Diameter:** 25mm

**Structure:** Biaxially Oriented

**Transparency:** Clear/Transparent

**UOM Code:** 175-032-02

**SKU:** 1000065318-group

**Product Code:** ST31-FM-000150

## Material Properties for Polymers

### Physical Properties

Element	Value
Abbe number	30.8
Flammability	HB
Radiation resistance	Good
Refractive index	1.59-1.6
Resistance to Ultra-violet	Poor
Limiting oxygen index( % )	19
Water absorption - over 24 hours( % )	0.4
Density( gcm <sup>3</sup> )	1.05

### Chemical Resistance

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

## Electrical Properties

Element	Value
Dielectric constant @ 1MHz	2.4-3.1
Dissipation factor @ 1kHz	0.0002
Dielectric strength( kV mm <sup>-1</sup> )	20
Volume resistivity( Ohmcm )	>10 <sup>12</sup>

## Mechanical Properties

Element	Value
Hardness - Rockwell	M60-90
Poisson's ratio	0.35
Elongation at break( % )	1.6
Tensile modulus( GPa )	2.3-4.1
Izod impact strength( J m <sup>-1</sup> )	19-24
Tensile strength( MPa )	30-100

## Thermal Properties

Element	Value
Heat-deflection temperature - 0.45MPa( C )	90
Heat-deflection temperature - 1.8MPa( C )	80
Upper working temperature( C )	50-95
Specific heat( J K <sup>-1</sup> kg <sup>-1</sup> )	1200
Thermal conductivity( W m <sup>-1</sup> K <sup>-1</sup> )	0.1-0.13@23°C
Coefficient of thermal expansion( x10 <sup>-5</sup> K <sup>-1</sup> )	30-210