

# Polycarbonate Disk

**Formula:** PC

**Thickness:** 0.006mm

**Diameter:** 40mm

**CAS Number:** 25766-59-0

**UOM Code:** 127-499-82

**SKU:** 1000035862-group

**Product Code:** CT30-FM-000160

## Material Properties for Polymers

### Physical Properties

| Element                               | Value   |
|---------------------------------------|---------|
| Abbe number                           | 34      |
| Flammability                          | V0-V2   |
| Radiation resistance                  | Fair    |
| Refractive index                      | 1.584-6 |
| Resistance to Ultra-violet            | Fair    |
| Limiting oxygen index( % )            | 25-27   |
| Water absorption - equilibrium( % )   | 0.35    |
| Water absorption - over 24 hours( % ) | 0.1     |
| Density( gcm <sup>3</sup> )           | 1.2     |

### Chemical Resistance

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

## Mechanical Properties

| Element  | Value   |
|--|---------|
| Coefficient of friction                            | 0.31    |
| Hardness - Rockwell                                | M70     |
| Poisson's ratio                                    | 0.37    |
| Elongation at break( % )                           | 100-150 |
| Tensile modulus( GPa )                             | 2.3-2.4 |
| Izod impact strength( J m <sup>2</sup> )           | 600-850 |
| Abrasive resistance - ASTM D1044( mg/1000 cycles ) | Oct-15  |
| Tensile strength( MPa )                            | 55-75   |

## Electrical Properties

| Element                                   | Value                              |
|---|------------------------------------|
| Dielectric constant @ 1MHz                | 2.9                                |
| Dissipation factor @ 1MHz                 | 0.01                               |
| Dielectric strength( kV mm <sup>2</sup> ) | 15-67                              |
| Surface resistivity( Ohm/sq )             | 10 <sup>12</sup>                   |
| Volume resistivity( Ohmcm )               | 10 <sup>12</sup> -10 <sup>14</sup> |

## Thermal Properties

| Element   | Value          |
|---|----------------|
| Heat-deflection temperature - 0.45MPa( C )                            | 140            |
| Heat-deflection temperature - 1.8MPa( C )                             | 128-138        |
| Lower working temperature( C )  | -135           |
| Upper working temperature( C )  | 115-130        |
| Specific heat( J K <sup>-1</sup> kg <sup>-1</sup> )                   | 1200           |
| Thermal conductivity( W m <sup>-1</sup> K <sup>-1</sup> )             | 0.19-0.22@23°C |
| Coefficient of thermal expansion( x10 <sup>-5</sup> K <sup>-1</sup> ) | 66-70          |

## Pultrusions

| Element                     | Value |
|-----------------------------|-------|
| Compressive strength( MPa ) | >80   |