# Polycarbonate Film Metallized with Aluminum

Polycarbonate film metallised with aluminium provides reflectivity, shielding, and thermal management for optical devices, RF?sensitive electronics, architectural films, and thermal?cycling research. **SKU:** 1000044718-group
**Product Code:** CT30-MZ-000120

## 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?³ ) | 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?¹ ) | 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?¹ ) | 15-67 |
| Surface resistivity( Ohm/sq ) | 10¹? |
| Volume resistivity( Ohmcm ) | 10¹?-10¹? |

## 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?¹ kg?¹ ) | 1200 |
| Thermal conductivity( W m?¹ K?¹ ) | 0.19-0.22@23°C |
| Coefficient of thermal expansion( x10?? K?¹ ) | 66-70 |

## Pultrusions

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