

# POLYCARBONATE

## SPECIFICATIONS SHEET

### DETAILS

**Chemical Name:** Polycarbonate

**Abbreviation:** PC

**Properties (Colour):** Crystal/Transparent, Opaque, Smoked (Brown) and Other

**Properties (Form):** Rod, Plate

**Machining:** Excellent

**Types:** Clear. Coloured. Mirrored. Abrasion-Resistant. Anti-Static. More.

**Chemical Resistance:** Good chemical resistance against diluted acids, aliphatic hydrocarbons and alcohols. Moderate chemical resistance against oils and greases

**Chemical Resistance:** Acetals have good resistance to solvents and lubricants but are attacked by strong acids and alkalis.

### KEY BENEFITS

- High impact strength
- Dimensional stability
- Optical clarity
- Moldable
- Durable
- Excellent chemical resistance
- Lightweight
- Light transmission
- UV resistant
- Long lasting performance in outdoor environments

### MECHANICAL PROPERTIES

Density $\rho$ (g/cm <sup>3</sup> )	1.20
Tensile Strength at Yield $\sigma_s$ (MPa)	55-70
Elongation at Break %	60-100
Modulus of Elasticity Tensile $E_t$ (Mpa)	2200
Modulus of Elasticity Bending $E_b$ (Mpa)	-
Impact Strength kJ/mm <sup>2</sup>	NO BREAK
Hardness Ball Indent	100
Creep 1 % after 1000hr MPa	18
Coefficient of friction against Steel $\mu$	0.52-0.58

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(CONT.)

## THERMAL PROPERTIES

Melting Point °C	160
Glass Transition Temperature °C	145
Thermal Conductivity W/M°C	0.19
Specific Heat J/(g.K)	1.2
Coefficient of Linear Expansion $\alpha$ 10 <sup>-6</sup> .°K	66-70
Safe Working Temp. Short Term °C	135
Safe Working Temp. Continuous °C	115
Minimum Working Temperature °C	-130

## ELECTRICAL PROPERTIES

Dielectric Constant $\hat{\epsilon}$ 106 Hz	3
Dielectric loss Factor tand 106 Hz	0.006
Volume Resistance W.cm	10 <sup>14</sup> -10 <sup>16</sup>
Surface Resistance W	10 <sup>15</sup>
Dielectric Strength kV/mm	27
Moisture Absorption % (at 50%RH)	0.2

\*Whilst all care has been taken to provide accurate & up to date information, we cannot provide legal certification of properties. We recommend that this information be used as a design guide only. Actual testing should be undertaken to confirm data if certification is required.\*