

POLYMETHYLMETHACRYLATE (PMMA)-ACRYLIC SPECIFICATIONS SHEET

DETAILS

Chemical Name: Polymethyl Methacrylate

Common/Trade Names: Perspex®

Abbreviation: PMMA

Properties (Colour): Clear, opaque as well as a range of colours and tints

Properties (Form): Rod, Tube, Sheet and Blocks

Machining: Due to acrylics brittle nature care has to be taken in order to achieve fine finishes, without chipping

Types: Extruded, Cast

Chemical Resistance: Unaffected by aqueous solutions of most laboratory chemicals, by detergents, cleaners, dilute inorganic acids, alkalis, and aliphatic hydrocarbons - however, acrylics are NOT recommended for use with chlorinated or aromatic hydrocarbons, esters, or ketones

KEY BENEFITS

- Material clarity
- UV resistant
- Lighter & stronger than glass
- Exceptionally long life span
- Can be bent and formed
- Good scratch resistance
- Great for displays

MECHANICAL PROPERTIES

Density ρ (g/cm ³)	1.18
Tensile Strength at Yield s (Mpa)	80
Elongation at Break %	3-10
Modulus of Elasticity Tensile E_t (Mpa)	3000
Modulus of Elasticity Bending E_b (Mpa)	-
Impact Strength kJ/mm ²	16
Hardness Ball Indent	180
Creep 1 % after 1000hr MPa	-
Coefficient of friction against Steel μ	-

POLYMETHYLMETHACRYLATE (PMMA)-ACRYLIC (CONT.)

THERMAL PROPERTIES

Melting Point °C	130
Glass Transition Temperature °C	105
Thermal Conductivity W/M°C	0.19
Specific Heat J/(g.K)	1.47
Coefficient of Linear Expansion α 10 ⁻⁶ .°K	70-75
Safe Working Temp. Short Term °C	90
Safe Working Temp. Continuous °C	60
Minimum Working Temperature °C	-40

ELECTRICAL PROPERTIES

Dielectric Constant $\hat{\epsilon}$ 106 Hz	3.4
Dielectric loss Factor tand 106 Hz	0.004
Volume Resistance W.cm	10 ⁵
Surface Resistance W	
Dielectric Strength kV/mm	>45
Moisture Absorption % (at 50%RH)	1

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.