

**PMMA (POLYMETHYLMETHACRYLATE)****MATERIAL DATA SHEET**

PMMA is a rigid, transparent, thermoplastic material. Naturally colorless and exceptionally clear, it can also be tinted for an almost infinite range of colours. The light transmission and diffusion parameters can be varied on request.

It is inert to many corrosive chemicals and is the plastic material of choice for outdoor use (resistant to UV and general weathering).

## Applications:

- Signs and signboards: illuminated panels, 3D lettering, indicator panels
- POS advertising: display stands, testers, notice-boards
- Interior design: shop-fitting, furniture, glazing
- Architectural fittings: street furniture, safety fittings, acoustic screens, skylights
- Transport: deflectors, sun visors, registration plates, ship hatches and portholes
- Industry: machine guards, dials, precision parts

PROPERTIES	Test methods	Units	VALUES
Color	-	-	Transparent
Density	ISO 1183-1	g/cm <sup>3</sup>	1.19
Water absorption:			
- after 24 h immersion in water of 23°C	ISO 62	%	0.30
- after 8 days	ISO 62	%	0.50
- max. total immersion 1200 hrs	-	%	1.19
<b>Thermal Properties</b>			
Specific heat	ASTM C 351	J/g/°C	1.32
Thermal conductivity at 23°C	DIN 52612	W/m/°C	0.19
Coefficient of linear expansion	EN 2155-1	mm/m/°C	0.065
Temperature of deflection under load (method A: 1.8 MPa)	ISO 75	°C	102
Max. allowable service temperature in air continuously for 20,000 h	-	°C	80
Vicat softening point point B 50 conditioned samples	ISO 306	°C	105
Forming oven temperature	-	°C	140-175
Flammability according to UL 94	-	-	HB
<b>Mechanical Properties at 23°C</b>			
Tension test			
- tensile stress at break	ISO 527	MPa	74
- tensile elongation at break	ISO 527	%	5
- tensile modulus of elasticity	ISO 527-1/-2	MPa	3300
Compressive stress	ISO 684	MPa	110
Charpy impact strength - unnotched	ISO 179/2D	kJ/m <sup>2</sup>	10
Izod impact strength (notched)	ISO 180/A	kJ/m <sup>2</sup>	1.3
Hardness, Shore scale D	ISO 868	-	80
Hardness, Shore scale M	ISO 2039	-	95
Dynamic coefficient of friction	ISO 7148-2	-	0.15 - 0.22
Shear strength – dynamic modulus	DIN 53445	MPa	1700
<b>Electrical Properties at 23 °C</b>			
Electric strength	DIN 53481	kV/mm	20-25
Transverse resistivity	DIN 53482	Ohm.cm	> 10 <sup>15</sup>
Dielectric constant to 50 Hz	-	-	3.7
Dielectric constant to 0.1 MHz	-	-	2.6
<b>Optical Properties at 23 °C</b>			
Light transmittance (3/8/10 mm thick)	ISO T 51068	%	92
Refractive index	ISO T 51064	-	1.492

Note: 1 g/cm<sup>3</sup> = 1,000 kg/m<sup>3</sup> ; 1 MPa = 1 N/mm<sup>2</sup> ; 1 kV/mm = 1 MV/m.

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