

Physical properties of cast P.M.M.A.

Mechanical properties	Value	Unit	Standard
Density	1,19	g/cm ³	DIN 53479
Impact strength (standard small test specimen)	12	kJ/m ²	DIN 53453
Notched impact strength (standard small test specimen)	2	kJ/m ²	DIN 53453
Tensile strength (1/1 test specimen 3; V= 5 mm./min)	80	N/mm ²	DIN 53455
Elongation at break (1/1 test specimen 3; V= 5 mm. / min)	5,5	%	DIN 53455
Elongation at break (test specimen 80 x 10 x 4 mm.)	115	N/mm ²	DIN 53452
Compressive yeald stress	110	N/mm ²	DIN 53454
Modulus of elasticity	3300	N/mm ²	DIN 53457
Dynamic shear modulus at c. 10 Hz	1700	N/mm ²	DIN 53445
Indentation hardness brinell H _{961/30}	200	N/mm ²	DIN 53456
Optical properties			
Transmittance of 3 mm. thick material in the visible range	~ 92	%	DIN 5036
Refractive index n ²⁰ _D	1,491		DIN 53491
Thermal properties			
Coefficient of linear thermal expansion per 0...50 °C	70 - 10 ⁻⁶	1/°C	VDE 0304/1
Thermal conductivity	0,19	W/m°C	DIN 52612
U-Value at thickness of 3 mm. of 5 mm. of 10 mm.	5,6 5,3 4,4	W/m°C	DIN 4701
Forming temperature (oven temperature)	~160	°C	
Demoulding temperature	>80	°C	
Maximum continuos service temperature	78	°C	
Vicat softening temperature method B	115	°C	DIN 53460
Heat distortion temperature ISO 75, deflection 1,80 N/mm ²	105	°C	DIN 53461
Dimensional stability under heat acc. to Martens method	95	°C	DIN 53458
Flammability rating	HB	-	UL 94
Electrical properties			
Volume resistivity	> 10 ¹⁵	Ohm-cm	DIN 53482
Surface resistance	5 - 10 ¹³	Ohm	DIN 53482
Dielectric strength (test specimen thick 1 mm.)	~30	kV/mm	DIN 53481
Dielectric constant at 50 Hz at 0,1 MHz	3,6 2,7		DIN 53483
Dissipation factor at 50 Hz at 0,1 MHz	0,06 0,02		DIN 53483
Tracking resistance	KC>600		DIN 53480
Behaviour towards water			
Water absorption in weight gain after 24 hrs immersion	0,3	%	DIN 53495