

Technical Data Sheet PMMA-GS (cast)

PMMA-GS transparent

PMMA-GS, acrylic glass (cast), Plexiglas® GS, Acrylite® GP, Perspex®

Typical Properties

- High light transmission (~92 %)
- Very good weathering and UV resistance
- Higher heat deflection temperature than XT
- Excellent machinability and polishability (also thick parts)
- Better chemical and stress-crack resistance than XT
- Hard, high-gloss surface
- Low weight (density 1.19 g/cm³)
- Suitable for food contact

Typical Industries

- Advertising and display technology (POS)
- Lighting and illumination technology
- Mechanical and plant engineering (viewing / guard parts)
- Model, pattern and mould making
- Building and architectural glazing
- Food industry (protective / sneeze guards)

	Test Method	Unit	Value
General Properties			
Density	DIN EN ISO 1183-1	g / cm ³	1.19
Water absorption (24 h)	DIN EN ISO 62	%	0.2
Flammability	UL 94		HB
Building material class	DIN 4102		B2 (normally flammable)
Optical Properties			
Light transmission (3 mm)	DIN 5036-3	%	~ 92
Refractive index n _D ²⁰	DIN EN ISO 489		1.49
Mechanical Properties			
Tensile strength (23 °C)	DIN EN ISO 527	MPa	80
Elongation at break	DIN EN ISO 527	%	5.5
Tensile modulus	DIN EN ISO 527	MPa	3300
Flexural strength	DIN EN ISO 178	MPa	115
Impact strength (Charpy, unnotched)	DIN EN ISO 179	kJ / m ²	15
Notched impact strength (Charpy)	DIN EN ISO 179	kJ / m ²	1.6
Ball indentation hardness	DIN EN ISO 2039-1	MPa	175
Thermal Properties			

	Test Method	Unit	Value
Glass transition temperature	ISO 11357	°C	~ 110
Vicat softening temperature	DIN EN ISO 306, Vicat B 50	°C	115
Heat deflection temperature	DIN EN ISO 75, method A, HDT	°C	105
Service temperature, long-term	Average	°C	-40 ... 80
Service temperature, short-term (max.)	Average	°C	100
Coefficient of linear thermal expansion	DIN 53752	10 ⁻⁶ / K	70
Thermal conductivity	DIN 52612-1	W / (m * K)	0.19

Electrical Properties

Volume resistivity	DIN EN 62631-3-1	Ω * cm	>10 ¹⁵
Surface resistivity	DIN EN 62631-3-2	Ω	5 · 10 ¹³
Dielectric strength	IEC 60243	kV / mm	~ 30

The values stated are typical average values for transparent, cast PMMA (PMMA-GS); they serve as an aid to material selection and are not a legally binding warranty of specific properties. PMMA is an amorphous thermoplastic and has no defined melting point. Cast PMMA (GS) has a higher molecular weight than extruded PMMA (XT) and therefore a higher heat deflection temperature as well as better chemical and stress-crack resistance; however, its thickness tolerance is greater and XT is better suited to laser cutting. PMMA is resistant to dilute acids and alkalis but is attacked by many solvents, alcohols and esters – media resistance must be verified case by case. As the properties also depend on grade, dimension and processing, the actual property values of a specific product may deviate somewhat from the data.