

TECHNICAL SHEET Setacryl[®] and Polarlite[®] Cast acrylic sheets

Technical-commercial information

Setacryl[®] is the basic range of sheets cast in Polimethyl Methacrylate with in a glossy surface on both sides.

Polarlite[®] is the range of sheets cast in Polymethyl methacrylate (PMMA), produced and marketed by Madreperla SpA . The sheets have one glossy and one matt surface.

Setacryl[®] and **Polarlite[®]** have the following characteristics:

- Resistance to impacts 8-10 times higher than glass
- Very high resistance to external agents and to UV rays (10 year guarantee)
- Higher light transmission than glass (transparent type)
- Yellowing and haze (turbidity) index very low even on significant thicknesses (different cm)
- Resistance to chemical aggression by saturated hydrocarbons, acids and diluted alkali, mineral oils and oils and greases of natural and vegetable origin
- Excellent workability (thermoforming, bending, gluing, milling) higher than extruded acrylic sheets
- Cold curvability (minimum radius 270/330 times the thickness)
- Very wide range of colours

The Madreperla production range is completed by the following specialities (see the specific documentation for details) :

Food Contact[®]	Sheets certified for applications in contact with food stuffs
Setaparfum[®]	Sheets with improved resistance to chemical aggression
Seta-LED[®]	Sheets for LED backlighting
Seta-LETTER[®]	Opaque coloured sheets with mono-matt-finished surfaces
Setashield[®]	Sheets with high UV and/or IR filter
Satinglas[®]	Sheets with both surfaces with matt finish
Setasand[®]	Sheets with both surfaces sanded
Metallic[®]	Sheets with metalized effect
Iridis[®]	Sheets with iridescent/pearly effect
Stone[®]	Sheets with natural stone effect
Setapan[®]	Solid surface in opaque colours

The sheets we supply are produced in observance of the requirements of standard UNI EN ISO 7823-1

(Polymethyl methacrylate sheets – types, dimensions and characteristics – cast sheets) where this is applicable. By request sheets with stricter requirements than the above-mentioned standard are produced. For details, contact our technical-commercial offices.

Standard colours and thicknesses are reported in our delivery program. Other thicknesses and colours can be produced on request and with a minimum quantity.

Standard protection

The film printed with the logo indicates the side to be used. The film is thermo-mouldable onto the products with a glossy surface, even if it is the responsibility of the user to check that the film is compatible with its usage. All the P.E. films used are suitable for laser cutting.

*Warning : for sheets with matt surface (**Polarlite®** and **Satinglas®**) the protection film **is not thermo-mouldable**.*

Cuts to measure, square cuts and dimensional tolerances

By request shapes can be supplied cut to measure: minimum surface 400 cm².

The sheets are supplied with the following tolerances: standard sheet 0/+10 mm – formats cut to measure +/-1mm/ml. Square cuts can be supplied by request.

Untrimmed sheets can be supplied by request. The sheets are supplied with invoicing net of surplus allowance. Small surface defects can be found in the allowance. The size of the untrimmed sheet is, approximately, 4 cm more than the trimmed size.

Colour formulation

Our laboratories are available to develop new colours or personalised duplicating with a minimum quantity as indicated in the specific technical sheet (“Minimum quantity of productions by request”)



TECHNICAL SHEET Setacryl[®] and Polarlite[®] Physical-chemical properties.

The following table reports the characteristic properties of standard **Setacryl[®]** and **Polarlite[®]** sheets; coloured opaline sheets have different physical-chemical properties (in addition to optic ones, obviously) depending on the type.

	Method	Unit Of measurement	Values
Physical Properties			
Density	ISO 1183	g/cm ³	1.19
Water absorption after 24 h	ISO R 62/DIN53495	%	0.3
Optic Properties			
Transmittance (on colourless material)	ISO 4892-1 DIN 5036	%	92
Haze (on colourless material)	ASTM D 1003	%	< 0.5
Refraction index (on colourless material)	ISO 4892/DIN 53491	°C	1.49
Mechanical Properties			
Coefficient of elasticity due to pulling stress 23°C	ISO 527-2/1 B/1	MPa	3300
Ultimate elongation 23°C	ISO 527-2/1 B/5	%	5
Tensile strength 23°C	ISO 527-2/1 B/5	MPa	76
Flexing resistance	ISO 178	MPa	110
Compression resistance	ISO 604	MPa	110
IZOD impact resistance with notch	ISO 180/ 1 A	kJ/m ²	1.4
Charpy impact resistance without notch	ISO 179/ 1	kJ/m ²	13
Abrasion resistance	ISO 14782	%	0.5 to 1
Maximum allowed tension		MPa	5-7
Minimum cold curvature radius		mm	330 x thickness.
Thermal Properties			
Softening time (Vicat)	ISO R 306 Method A	°C	>108
Deflection time (HDT)	ISO 75/A	°C	>102
Maximum running time		°C	80
Linear Expansion Coefficient	VDE 0304/1		7
Thermal conductivity	DIN 52612	W/m/°C	0.17
Fire behaviour			
Self-ignition temperature	DIN 51794	°C	430 c.a.
Fire behaviour	NF P 9250		M4
Other Properties			
Poisson coefficient	ISO 527 -1		0.39
Thermoforming Parameters			
Thermoforming interval		°C	140-190
Heating furnace temperature		°C	130-180
Maximum heating temperature		°C	200
Shrinkage after heating		%	2.5 max

This information is given as a guide and does not represent the technical specifications of the materials and therefore does not imply any responsibility on the part of MADREPERLA SpA