TECHNICAL SHEET SETAPARFUMÒ
Cast acrylic sheets with improved resistance to chemical aggression Setaparfum Ò

Technical-commercial information

Setaparfum® is a cast acrylic sheet developed by Madreperla Spa for applications which require an improved resistance to chemical aggression. Cast acrylic sheets, in their own right, have a high resistance to chemical aggression, especially compared with acrylic sheets obtained by extrusion. The polymer from extrusion in fact (having a molecular weight on average 10 times lower than that of the polymer obtained by casting) is more prone to attack by substances such as, for example, perfumes, sun creams, machine oils, cleaning products, especially in the present of tensions in the product caused by post-machining procedures (drilling, mill cutting, flame polishing, laser cutting, hot bending, thermoforming).

The formulation of the Setaparfum® sheet further improves the performance of the cast methacrylate: tests carried out in our laboratories show that in certain conditions, Setaparfum® is 40 times more resistant than extruded acrylic and 5-6 times more resistant than the standard cast (these tests concern long-term assessments of the appearance of micro-cracks and distortion values critical for causing mechanical tensions in the test piece). Setaparfum® therefore is the sheet particularly indicated for producing

- Display units for perfume/cosmetics stores
- Protection shields for industrial machines
- Laboratory equipment
- Equipment in the medical sector
- Protection shields POP/POS sector

When heated for thermoforming operations, Setaparfum,® sheets have a melt strength slightly higher than standard cast sheets: this could require slight changes to thermoforming parameters (temperatures and/or time the product remains in the furnace or slightly higher IR heating). The improved performance in the presence of chemical aggression of Setaparfum® sheets may also cause small changes in the gluing method compared with the standard cast: a slightly lower adherence value is therefore normal.

The performance assessment of the product carried out with Setaparfum® must in any case envisage verification of the material in conditions as close as possible to those of its use, due to the possible critical aspects caused by the variability of the post-machining procedures and environmental conditions (temperature, % of aggressive component of the agent on contact).

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Our laboratories and the technical-commercial office are at your disposal for assessments and more detailed information.

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 cm^2.
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”)

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MADREPERLA

cast acrylic sheets

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Physical-chemical properties.

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

	Method	Unit of measure-ment	Values
Physical Properties			
Density	ISO 1183	g/cm3	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/m2	1.4
Charpy impact resistance without notch	ISO 179/ 1	kJ/m2	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 50	°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

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