



SETACRYL® DATA SHEET

Setacryl® is our cast acrylic sheets range with a glossy surface on both sides.

Technical conditions:

Our sheets are produced in accordance to ISO 7823-1.

Cut-to-size sheets:

On request, we can supply cut-to-size sheets with minimum surface required 400cm².

Tolerances on size:

The Tolerances are as follows:

- standard sizes: 0/+ 10mm.
- cut to size +/- 1mm/lm

Squared cutting:

On request we can supply squared cuttings.

Untrimmed sheets:

Our cast acrylic sheets can be supplied on request untrimmed. Minor defects may occur in the oversize. Only net dimensions will be charged to the customer. The untrimmed size of the sheets is roughly 40mm bigger than the trimmed one.

Color formulation:

Slight differences may occur in shade between different production batches of the same color, caused by different pigments batches, although every care has been put in production.

It is recommended not to use different production batches for the same fabrication.

Out of standard items:

Other thicknesses, dimensions and colors can be produced on request with minimum quantities.

The order is accepted for the smallest production batch.

We have a large number of color formulation ready, don't hesitate to contact us for information about color matching.

Light transmission:

The light transmission remains constant from 3mm to 10mm.

Storage:

The correct way to store acrylic sheets is to place them horizontally, on the supplied flat bulk skids, in a well ventilated, consistent temperature area. Avoid storing acrylic sheets where extreme variations in temperature may occur. Extreme temperature changes expand or contract the acrylic sheets.

Special vertical racks can be used to store the sheets vertically. The rack should allow the sheets to lean approximately 10° (gradient).



Standard protection:

The side with printed logos identifies the side to be used as view side (guaranteed side).
The film is thermoformable for all Setacryl® sheets (glossy surface), but customers should perform a trial before use.
The film protecting Polarlite®, SatinIgas®, Stone®, Chroma®, Metallic Matt® and Seta-LETTER®, (satin surfaces, also in their Green Cast® version) is not suitable for thermoforming.
All protection films are suitable for laser cutting.
In order to preserve the sheet from scratches, avoid sliding sheets across work surface debris. Dirt can penetrate the masking, scratching the sheet.

Cleaning:

Acrylic sheets can be cleaned using a mild soap solution or a specific plastic cleaner, combined with a lint free cloth.
To remove grease, oil, or tar use hexane or kerosene followed by a mild soap solution.
Avoid cleaners containing alcohol or ammonia.

Safety:

Acrylic is a combustible thermoplastic that will ignite when in contact with any source of ignition. Unlike other polymers, does not produce toxic or corrosive gases and produces very little smoke. Production of molten droplets is reduced compared to extruded sheets.

When storing acrylic sheets, be aware of the material properties.

Madreperla acrylic sheets classify:

- HB according to UL94
- E according to EN 13501

Thickness tolerances:

The sheets are produced upon ISO 7823-1.

Formula to calculate the thickness tolerance. The thickness can vary within the same sheet:

$$\pm (0,4 + (0,1 \times s))$$

Where "s" is the nominal thickness in mm

Following the formula, the following thickness tolerances are accepted for cast acrylic sheets:

| spess. in mm | 3 mm | 4mm | 5mm | 6mm | 8mm | 10mm | 12mm | 15mm | 18mm | 20mm | 25mm |
|--------------|-------|-------|-------|-----|-------|-------|-------|-------|-------|-------|-------|
| TOL. | ± 0,7 | ± 0,8 | ± 0,9 | ± 1 | ± 1,2 | ± 1,4 | ± 1,6 | ± 1,9 | ± 2,2 | ± 2,4 | ± 2,9 |

GENERAL PROPERTIES

| General properties | MM | Test standard | Unit | Typical value |
|---|------|-----------------------|-------------------|-------------------|
| Density | | ISO 1183 | g/cm ³ | 1,19 |
| Water absorption after 24 h | 4 | ISO R 62/DIN 53495 | % | 0,3 |
| Water absorption after 8 days | 4 | ISO R 62/DIN 53495 | % | 0,5 |
| Max. Water absorption after 1200h | 3 | Internal | % | 1,75 |
| Mechanical properties | MM | Test standard | Unit | Typical value |
| Poisson's ratio | 4 | ISO 527 – 1 | | 0,39 |
| Tensile strength at 23°C | 4 | ISO 527 – 2/1B/5 | Mpa | 76 |
| Modulus of elasticity at 23°C | 4 | ISO 527 – 2/1B/1 | MPa | 3300 |
| Elongation at break at 23°C | 4 | ISO 527 – 2/1B/5 | % | 6 |
| Flexural strength | 4 | ISO 178 | MPa | 130 |
| Notched impact strength (Izod) | 4 | ISO 180/1A | KJ/m ² | 1,4 |
| Impact strength (Charpy) | 4 | ISO 179/1 | KJ/m ² | 12 |
| Rockwell hardness M scale | 4 | ISO 2039-2 | | 100 |
| Compressive yield stress | 4 | ISO 604 | MPa | 130 |
| Electrical properties | MM | Test standard | Unit | Typical value |
| Dielectric strength | | DIN 53481 | KV/mm | 20 to 25 |
| Volume resistivity | | DIN 53482 | Ohm x cm | >10 ¹⁵ |
| Dielectric constant to 50Hz | | DIN 53483 | | 3,7 |
| Dielectric constant to 1 MHz | | DIN 53483 | | 2,6 |
| Optical properties | MM | Test standard | Unit | Typical value |
| Transmittance | 3-10 | ISO 4892-1 / DIN 5036 | % | >92 |
| Haze (on colorless material) | | ASTM D 1003 | % | <0,5 |
| Refractive index (on colorless material) | | ISO 4892 / DIN 53491 | | 1,492 |
| Thermal properties | MM | Test standard | Unit | Typical value |
| Coefficient of linear expansion | | ISO EN 2155-1 | mm/m/°C | 0,065 |
| Thermal conductivity | | DIN 52612 | W/m/°C | 0,17 |
| Specific heat | | ASTM C 351 | J/g/°C | 1,35 |
| Softening temperature (Vicat) | | ISO R 306 Method B50 | °C | >108 |
| Heat deflection temp. under load (HDT) | | ISO 75/A | °C | 102 |
| Dimensional change at heating (shrinkage) | | | % | 2,5 |
| Permanent service temperature | | | °C | 80 |



| Thermoforming parameters | MM | Test standard | Unit | Typical value |
|--|-----|-----------------|------|------------------------|
| Forming oven temperature | | | °C | 130-190 |
| Max. heating temperature | | | °C | 200 |
| Max. linear shrinkage after heating thick <3mm | | | % | 2 |
| Flammability test | MM | Test standard | Unit | Typical value |
| Ignition temperature | BRD | DIN 51794 | °C | 450 approx |
| Fire rating | BRD | DIN 4102 | | B2, normally flammable |
| | FR | NF P 9250 | | M4 |
| | UK | BS 476 Part.7 | | class 3 |
| | EU | EN 13501-1-2009 | | E |
| | USA | UL 94 | | HB |
| Melt behavior when burning | FR | NF P 92505 | | Non dripping 3mm |

The trials have been done on random samples and the values are not strictly binding.
The data and information given are intended as a general guide to the use of our products.
Madreperla S.p.A may not be held liable in regard to the product description and the suitability of a product for a particular application or purpose.