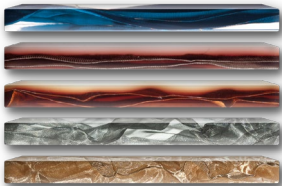


# PHOENIX MIRAGE STAR



## Product Description

Deep raptures, stunning lacework structures and a shimmering appearance show the true beauty of **Phoenix Mirage STAR**. Delicate fabric sweeps and translucent material creates a profound sense of depth. The cast acrylic sheet, illuminated to perfection, resembles a magical landscape left to its own devices - truly unique, elegant, and radiant.

**Phoenix Mirage STAR** can exist with integrated LED lighting to create an astounding vibrant piece of decorative wall art.

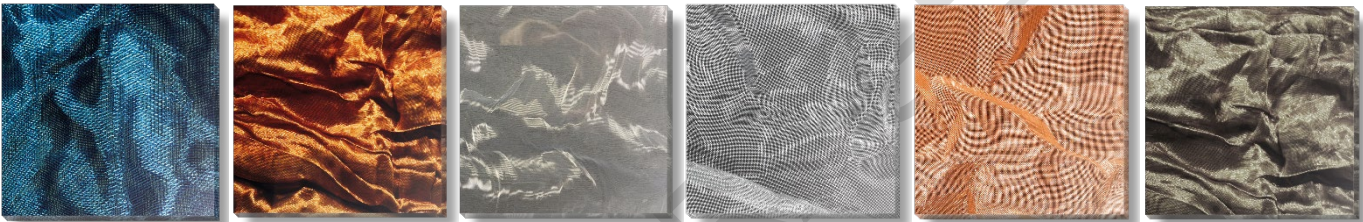
**STAR** is produced from pure PMMA cross linked polymers for higher durability and resistance against scratching and UV rays. Hand-crafted, **STAR** is designed with a fine wire material (Blue, Copper, Ice, Inox and Salmon), introduced during the production, and forming of the panels.

**STAR** is a functional and decorative panel. It can be produced in varied thicknesses and can be used for an array of project installations and applications. **STAR** is ethically sourced, non-toxic, halogen free UV resistant and hand-crafted.

## Available Colors

Blue, Copper, Ice, Inox, Salmon, Silver

*(Variations in dye lots may result in slight color differences between samples provided and finished product)*



## Available Sizes

(Custom thicknesses on request)

| Panel Size      | 94.48" x 39.37"<br>(2400mm x 1000mm) | 118.11" x 47.24"<br>(3000mm x 1200mm) |
|-----------------|--------------------------------------|---------------------------------------|
| Panel Thickness |                                      |                                       |
| 10mm (0.39")    | *                                    | *                                     |
| 12mm (0.47")    | *                                    | *                                     |
| 15mm (0.59")    | *                                    | *                                     |
| 18mm (0.70")    | *                                    | *                                     |
| 20mm (0.78")    | *                                    | *                                     |

## Panel Weight

| Panel Size      | 94.48" x 39.37"<br>(2400mm x 1000mm) | 118.11" x 47.24"<br>(3000mm x 1200mm) |
|-----------------|--------------------------------------|---------------------------------------|
| Panel Thickness |                                      |                                       |
| 10mm (0.39")    | 29 kg (63.9 lbs.)                    | 43.2 kg (95.2 lbs.)                   |
| 12mm (0.47")    | 35 kg (77.1 lbs.)                    | 52 kg (114.6 lbs.)                    |
| 15mm (0.59")    | 43.2 kg (95.2 lbs.)                  | 65 kg (143.3 lbs.)                    |
| 18mm (0.70")    | 52 kg (114.6 lbs.)                   | 78 kg (171.9 lbs.)                    |
| 20mm (0.78")    | 58 kg (127.8 lbs.)                   | 86.4 kg (190.4 lbs.)                  |

## Edge Finishing

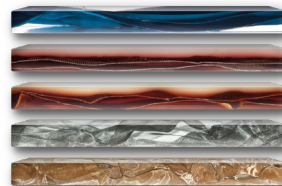
Edges of Phoenix Mirage STAR can be polished for an upcharge and are available in a variety of different forms. In addition to a straight edge, edges may accept beveling, rounding, etc. Additional finishing, such as sanding or polishing, can also be provided to some edges. We use a polishing paste and a cotton rotative disc it is possible to polish till a glass transparent cut. Surface scratches can also be removed in the same way.

## Tolerances

Thickness: +0,6 mm+10% of the nominal thickness (extended UNI EN 7823); sheet dimensions: +-3% on nominal size  
Material tolerances for PMMA cast acrylic up to 25 mm thickness according to DIN EN ISO 7823-1 must be considered.

Processing tolerances acc. to DIN ISO 2768

# PHOENIX MIRAGE STAR



## Product data sheet

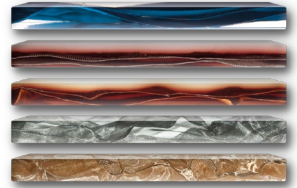
Polymerization: Homopolymer & Copolymeric (Monomers)

Polymethylmethacrylate -PMMA in Sheet and Block Form

| CHEMICAL COMPOSITION                                    |                                                     |                    |              |
|---------------------------------------------------------|-----------------------------------------------------|--------------------|--------------|
| PMMA (polymethylmethacrylate)                           | 96-100% depending on compound                       |                    |              |
| Functional monomers and other additives                 | 0-4% depending on compound                          |                    |              |
| Estimated molecular weight                              | between 3.8x10 <sup>6</sup> and 9.5x10 <sup>6</sup> |                    |              |
| Residual constituents of free monomers                  | <1% (typical 0.45%) depending on compound           |                    |              |
| MECHANICAL                                              | Value                                               | Unit of measure    | Standard     |
| Density                                                 | 1.19                                                | g/cm <sup>3</sup>  | ISO 1183     |
| Impact value                                            | 1.8                                                 | K/m <sup>2</sup>   | ISO 180/1A   |
| Tensile strength at 20°C                                | 68                                                  | Mpa                | ISO 527      |
| Elongation at rupture                                   | 4                                                   | %                  | ISO 527      |
| Bending properties                                      | 103                                                 | Mpa                | ISO 178      |
| Compressive strength                                    | 103                                                 | Mpa                | ISO 604      |
| Ball impact strength                                    | 166                                                 | Mpa                | ISO 2039-1   |
| Scratch resistance after grinding wheel test            | 37                                                  | % Haze             | ISO 9532     |
| ACOUSTIC                                                |                                                     |                    |              |
| Acoustic velocity at 20°C                               | 2800                                                | m/s                |              |
| Estimated sound insulation value Rw for 10mm            | 32                                                  | dB                 |              |
| OPTICAL                                                 |                                                     |                    |              |
| Transmittance                                           | 92.2                                                | %                  | DIN 5036/3   |
| UV-translucence                                         | no                                                  | %                  |              |
| Reflection loss                                         | < 4                                                 | %                  |              |
| Total energy transmission factor g                      | 84                                                  | %                  | DIN EN 410   |
| Absorption in visible range                             | < 0.05                                              | %                  |              |
| Optical refraction index                                | 1.49                                                |                    | ISO 489      |
| ELECTRICAL                                              |                                                     |                    |              |
| Earth resistance                                        | > 10 <sup>14</sup>                                  |                    | DIN VDE 0303 |
| Surface resistance                                      | > 10 <sup>14</sup>                                  |                    | DIN VDE 0303 |
| Dielectric coefficient at 60Hz                          | 3.5                                                 |                    | DIN VDE 0303 |
| Dielectric loss factor at 60Hz                          | 0.065                                               |                    | DIN VDE 0303 |
| BEHAVIOUR IN WATER                                      |                                                     |                    |              |
| Water absorption 24h 20°C sample 65x65x2mm <sup>3</sup> | 42                                                  | mg                 | ISO 62       |
| Max. increase in weight after water absorption          | 2.2                                                 | %                  | ISO 62       |
| THERMAL                                                 |                                                     |                    |              |
| Linear Coeff. of expansion between 0 and 55°C           | 0.07                                                | mm/m°C             | DIN 53572-A  |
| Possible expansion through heat and moisture            | 7                                                   | mm/m               |              |
| Thermal conductivity                                    | 0.19                                                | W/mK               | DIN 52612    |
| Coeff. of thermal conductivity sample 10mm              | 4.45                                                | W/m <sup>2</sup> K | DIN 4701     |
| Specific heat                                           | 1.47                                                | J/gK               |              |
| Recommended forming temperature                         | 140                                                 | C                  |              |
| Maximum surface temperature                             | 190                                                 | C                  |              |
| Maximal recommended continued use temp.                 | 81                                                  | C                  |              |
| Relaxation temperature                                  | > 85                                                | C                  |              |
| Auto-inflammation temperature                           | 420                                                 | C                  |              |
| Waste gas volume                                        | low                                                 |                    |              |
| Toxicity of waste gases                                 | no                                                  |                    |              |
| Corrosivity of waste gases                              | no                                                  |                    |              |
| Material class                                          | B2                                                  |                    |              |
| Vicat-softening temperature                             | 112                                                 | C                  |              |



# PHOENIX MIRAGE STAR



## Technical Information

Our panels are cast starting by only optical-class methyl methacrylate virgin monomer, manufactured under strict rules and standards. This is the original and the only monomer, which can be used to manufacture polymethylmethacrylate homopolymer + copolymeric (PMMA) since 1933.

PMMA is NON-TOXIC and COMPATIBLE WITH the HUMAN BODY: First class methacrylate can be applied in contact with the human body like a prosthesis: PMMA is skull, bone, and teeth replacement material since the 50's. Since our plant produces goods for technical markets, our PMMA was certified according to CE 93/42 (number of authorization IT 0068/QPR-DM/053-2011) for medical use like, for example, orthodontic prosthesis: it passed all tests (carcinogenic, mutagenic, residual monomer, cell growth).

PMMA is 100% Recyclable; one of the few plastic materials that can be turned again into monomer in a reliable process called "cracking process". Just to go a bit deeper, PMMA is one of the few materials, which comes back into the original liquid form and can be reused for second choice applications like paints, automotive parts and acrylic textiles or recycled acrylic sheets, good for several purposes.

Our panels are produced 99.7% with a 100% recyclable nontoxic monomer. We believe THIS IS GREEN! This raw material costs far more than the recycled one but guarantees a total traceability of the eventual pollutants (manufacturers

of monomer give a certificate of analysis batch after batch) and express more stable and uniform properties. Recycled "materials" (no one, in the end, knows from what raw material source they are done!) contains huge proportion of "recycled plastics." Most of them come from Far east plants and contain, evidently, a lot of polymers that are very difficult to control. So, batch after batch there are different properties, different compositions and, in the end, different pollutants (styrene, PVC like polymers and antimony and heavy metals like pollutants derived by plastic composition that were allowed to be produced years ago). All our factory waste is sent to recycling plants with a traced register.

CAST PMMA is the "leader" of plastic for outdoor use: highly opaque to UV is often stabilized with the economic benzophenone's compounds (some of these are suspected carcinogenic). We protect our panels with high-cost FOOD GRADE UV stabilizers. Our panels will not become opaque within 30 years. Most of the polyesters and "eco" panels produced worldwide will last one tenth of this time below the sun reporting quickly hazing and yellowing.

Lastly, our panels are manufactured by pure MMA polymerized entirely in our plants and converted in PMMA; typical residual unconverted monomer present in CAST PMMA ranges by 1,2 till 2% (often above...); our panels were tested during the abovementioned certification to contain an unconverted monomer quantity of 0,37%, an excellent value that can be achieved only if working with all care.

## Recyclability

Plastic is typically hard to fully recycle. Polymer needs to be selected, grinded and often melted together which is an extremely expensive and lengthy process, sometimes pollutant; this process is often conducted in developing countries where pollution legislation and regulations are less stringent. Plastics as PS, PC, PP, PET and similar once dismissed can be re-used just as fillers as, for example, for asphalt, concrete, or rubber.

PMMA is one of the few plastics that can be fully converted back into its raw material (MMA) via pyrolysis. Pyrolysis is a green and ambient friendly process that allows almost 100% recovery of PMMA into a monomer that can be recycled and reused without a limit. Our regulations are strict and since PMMA is a precious plastic, the process is conducted safely and cautiously to receive top quality material back.

Our factories are specialist companies for pyrolysis and so our polymer can be recovered fully and rapidly in an ambient friendly procedure.