

# Oroglas® Glue 2.1

Two-component transparent, polymerising glue. This glue is a viscous solution of PMMA in MMA monomer. A catalyst (Oroglas® Additive 1), added at the time of use, causes the monomer to polymerise as PMMA.

## APPLICATIONS

For bonding Oroglas® Cast in a range of applications such as POS displays, signs, display cases, etc.

This adhesive can also be used for bonding other plastic materials, such as polystyrene and ABS, after they have first been annealed as a precaution. In such cases, prior testing is recommended.

In order to achieve optimum adhesion, the adhesive joint should be between 0.5mm and 1mm thick. For assembling angles, Oroglas® edges should be chamfered

## TYPES OF BOND

Edge-to-edge bonding (cases, boxes)

Angled bonding with chamfered edges (POS displays)

Edge-to-surface bonding (raised lettering on signs)

Surface-to-surface bonding (chessboards, decorative panels, flat lettering)

This list of examples is not exhaustive.

## PROPERTIES

Viscosity at 20°C (Brookfield): 1200- 1800 mPa.s

Density at 20°C: 1.05 g/cm<sup>3</sup>

Flash point: 10°C

Solids content: ≈ 31%

Storage temperature: Maximum 30°C

Colour: Transparent, with a light violet tint

## PRECAUTIONS IN USE

We strongly recommend that receptacles be closed tightly as soon the required quantity has been taken.

Use precision equipment to weigh the adhesive and the catalyst: 4 parts Oroglas® Additive 1 to 100 parts Oroglas® Glue 2.1, by mass or volume.

Fit a protective cap to applicator tubes to avoid them becoming blocked and do not leave glue in the tubes for more than 10 minutes. Do not apply

if the temperature is lower than 17°C, in a damp atmosphere or to a damp surface.

## TOXICITY AND SAFETY

Oroglas® Glue 2.1 contains MMA, which is highly flammable and its vapour can cause irritation to the skin, eyes and respiratory tract.

- Do not inhale the vapour

- Work in a well-ventilated area

- Avoid contact with the skin and eyes

Oroglas® Glue 2.1 has a closed-vessel flash point of 10°C, which makes it flammable.

Store well away from heat and any source of ignition.

Do not smoke whilst using the product.

Oroglas® Additive 1 can irritate the eyes and respiratory tract. Avoid all contact with the eyes and mucous membranes.

For further information, see the Safety Data Sheet for each component.

## STORAGE PRECAUTIONS

Unopened packages should be stored in a cool, dry, well-ventilated place. If stored unopened, in their original packaging, hermetically sealed and at a temperature between 8°C and 30°C.

Oroglas® Glue 2.1 and Oroglas® Additive 1 can be kept for up to two years from the date of packaging.

## PACKAGING

Oroglas® Glue 2.1 is supplied in full cartons containing 12 bottles of 1kg. Full cartons cannot be split. Bottles are made from aluminium for safety and corrosion reasons. Each individual package is labelled with important information from the safety data sheet and the production batch number.

Oroglas® Additive 1 is packaged separately but supplied with Oroglas® Glue 2.1



## GUIDELINES FOR USE

### Releasing internal strains:

The Oroglas® Cast to be glued can be subject to internal strains caused by various machining or forming operations. Such strains must therefore be released, otherwise cracking (crazing) will occur on contact with solvents in the adhesive. If machining (cutting or milling) operations have been performed with efficient cooling (clean water, or water + air), the edges need only be sanded off before bonding.

Disc polishing, forming and hot-bending result in an increased risk of crazing, which justifies stoving.

With laser cutting and flame polishing, it is essential that the parts be annealed before any attempt at bonding.

### Preparation of surfaces:

Polymerising glues work by adding material and can compensate for any roughness. The surfaces of the joint should preferably be roughened to increase the contact area. Previously machined edges should be dry-sanded and smooth surfaces roughened with sandpaper.

The surfaces to be bonded must be completely dry and clean. Remove all traces of grease from the parts to be glued using petroleum ether or a 50/50 mixture of water/methylated spirit.

If necessary, areas adjacent to the area being bonded can be protected by a special adhesive resistant tape (e.g. polypropylene). If necessary, preassemble the parts using the same adhesive tape.

### Applying the adhesive:

After incorporating and mixing the Oroglas® Additive 1 catalyst, close the mixing vessel and let it stand for 5 to 10 minutes to allow any air bubbles to escape naturally. Do not shake at this stage. The adhesive is then usable for about 30 minutes.

When pre-assembling, adhesive may be applied to the joint area using a syringe or polyethylene bottle fitted with a nozzle. Other means, such as coating by casting, can be used for large surfaces. Joints should be kept under pressure by moderate clamping at between 50 and 300 g/cm<sup>2</sup>.

### Drying and hardening time:

The external surface of glued joints will dry in approximately 2 hours at 20°C (guide time).

Hardening varies with thickness, temperature and humidity. It is usually possible to handle glued objects (carefully) after 2 to 3 hours but a minimum of 24 hours must elapse before any machining.

Complete hardening is achieved after heating in a ventilated oven for 1 to 3 hours at 80°C (or 2 to 5 hours at 60°C for thermoformed parts).

Polymerisation of Oroglas® Glue 2.1 is accompanied by a reduction in volume of approximately 15%. The volume of adhesive to be applied must always be greater than the volume of the joint surface cavity.

### Properties of joints made with Oroglas® Glue 2.1:

Mechanical strength is determined by traction applied to test samples formed by end-to-end bonding.

Measurements have been made using test samples heated for 4 hours at 60°C and on samples that had been left to harden naturally for 4 days at room temperature. The values below are given for guidance only and are not guaranteed.

Tensile strength:

After 4 days of natural hardening: 45 to 50 Mpa

After heating at 60°C: 48 to 53 Mpa

REFERENCE : 526.80000

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