



MAGMA ACRYLICS (Pty) Ltd

Exclusively developed acrylic adhesive products

PRODUCT DATA MAGMA BOND C3

Magma Bond® C3 - Single Component UV Acrylic Adhesive

1. PRODUCT NAME & GENERAL USE..

Magma Bond® C3 - is a single component polymerisation adhesive that hardens using a process commonly known as UV curing, ultraviolet curing is a photochemical process in which high-intensity ultraviolet light is used to instantly react with the adhesive to cure or “dry” the bonding properties of the adhesive. It produces high strength bonds to acrylic sheet and offers excellent weathering resistance. The main adhesive component is a viscous mixture made of acrylic polymer dissolved in monomer which is combined with complex makeup of chemicals to give the adhesive its unique properties.

2. APPLICATION..

Magma Bond® C3 - is intended for bonding acrylic sheet preferably on transparent area bonds of clear acrylic i.e. premium acrylic, cast sheet and parts made of acrylic moulding compounds with one another, but also for other clear plastics such as PC, XT and PVC. Applications include sign making, model making, structural engineering and acrylic sheet repair. Unsupported gaps of up to 1 to 2mm can be produced. When bonding extruded acrylic surface crazing/stress cracking might occur unless the sheet is annealed prior to bonding. The bonding properties obtained when using **Magma Bond® C3** are of approximately the same strength as the acrylic sheet. Typical joint strengths are 35 MPa for cold cured joints & 45 MPa for post cure heat treated joints. **Magma Bond® C3** - is not recommended for structural applications on aircraft.

3. TYPICAL VALUES OF PROPERTIES..

- Viscosity (Brookfield A/60/68°F/20°C): 1600 +/- 200 cp
- Density/68°F/20°C: ~ 1.03 g/cm³
- Refractive index n_{D68}: ~ 1.44
- Colour: Clear
- Flash point (DIN 51755): < 39°F / 4°C
- Solids content: 30 +/- 1%
- Storage stability: 1 year after filling, if correctly stored
- Packaging materials: aluminium, HDPE, PP & glass
- Cleaning agents for equipment: Magma Bond® M1
- Thinner: Magma Bond® M1, Advisory maximum amount of 10%
- Curing by evaporation and absorption in the jointing material

4. GUIDELINES FOR USE..

1. SURFACE PREPARATION

Substrates to be bonded should be perfectly clean, dry and free from dust and grease.

2. APPLICATION / BONDING

The minimum film thickness that can be successfully used is 5 thou (0.13 mm) thick. Since the adhesive shrinks on curing allowance must be made for this when making butt joints and fillet joints. When bonding an edge to face the edge should have a 10° chamfer to allow a sufficient quantity of adhesive into the joint.

Magma Bond® C3 must be at room temperature i.e. 16 - 25°C. If it has been stored below 15°C it must be allowed to come to room temperature before use, at low temperatures from 5°C and below the solution may potentially not function as per manufactures specifications so it's important to ensure contents are carefully returned to the optimal temperature range before use.

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The UV lighting required to activate the hardening process is either direct or indirect sunlight or this process can be achieved by using a 125 watt Mini-flood fitting with an OSRAM HQL (MBF-U)125 watt lamp. The lamp shall be switched on not less than 5 minutes prior to the test, in order to reach its full light intensity. The sample shall be placed immediately below the glass cover of the light fitting.

All bonding operations should not be undertaken at temperatures below 15°C otherwise the setting time may be affected. Ideally the room temperature should be 15 - 25°C. Setting begins as soon as C2 Catalyst Component is added, the adhesive should harden within 1.5 - 2 hours at 20 +/- 5°C, after this time the joint can be handled carefully. Light machining is possible after approx. 4 hours, but for the best results, the joint should be left to cure for 24 hours before further processing.

Once the adhesive has set the final bond strength can be increased by heat curing the material. This can only be done at least one hour after the adhesive has set. Non-thermoformed components can be heated for 3 to 4 hours at 80°C. Thermoformed, highly stretched components may be heated for 4 to 5 hours at 70°C. Do not heat components until at least 1 hour after cement has set.

Gap filling - Because of its high viscosity the gap filling properties of Magma Bond® C3 are significantly better than any of the Solvent Adhesives. Special masking techniques will be needed to keep the adhesive in place if large gaps are to be filled. In addition the adhesive shrinks in volume by approximately 20% as it hardens so cavities must be over filled to allow for this reaction.

5. TYPICAL CHARACTERISTICS..

Magma Bond® C3 Colour - crystal clear! After prolonged outdoor exposure (years) in warm climates a slight crazing of the bond line may appear, however this can be rectified by polishing. This will not affect the mechanical properties of the cement..

6. SAFETY MEASURES & HEALTH PROTECTION..

Contains Methyl Methacrylate. Irritates the eyes, respiratory system and skin. May cause sensitisation by skin contact. Keep away from sources of ignition. Do not smoke. Wear suitable protective gloves. Avoid contact With the skin. In case of swallowing seek medical aid immediately.

For further information refer to the relevant Health & Safety Data Sheet.

7. STORAGE..

Magma Bond® C3 - store in a dark and dry flame proof area in a temperature ranging from 5°C to 25°C.

8. SHELF LIFE..

12 months from date of manufacture stored under the above conditions.

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