



**MAGMA ACRYLICS** (Pty) Ltd

Exclusively developed acrylic adhesive products

## PRODUCT DATA

### MAGMA BOND C2

#### Magma Bond® C2 - Two Component Acrylic Adhesive

##### 1. PRODUCT NAME & GENERAL USE..

**Magma Bond® C2** - is a two component polymerisation acrylic adhesive that hardens at room temperature by polymerisation. 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. The second part of the two component is a liquid catalyst solution that initiates the polymerisation of the combined elements of both the viscous mixture & catalyst that give the adhesive its unique properties.

##### 2. APPLICATION..

**Magma Bond® C2** - is intended for bonding acrylic sheet to itself, but it will bond acrylic sheet to other materials such as wood, but also for other 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. It will also bond extruded acrylic sheet, but will cause surface crazing and stress cracking of the sheet unless the sheet is annealed prior to bonding. The bonding properties obtained when using **Magma Bond® C2** are of approximately the same strength as the acrylic sheet. Typical joint strengths are 35 MPa for cold cured joints and 45 MPa for post cure heat treated joints.

**Magma Bond® C2** - 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/cm<sup>3</sup>
- Refractive index n<sub>D68</sub>: ~ 1.44
- Colour: clear, with slight straw colour tint(if exposed to UV)
- Flash point (DIN 51755): ~ + 50°F/10°C
- Solids content: 28 +/- 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 / pot life (at 200 g adhesive, 68°F/20°C):-  
2% Magma Bond® M1: ~ 60 min / ~ 30 min  
5% Magma Bond® M1: ~ 50 min / ~ 25 min

##### 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® C2** 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; this could take several hours.

###### • MIXING RATIO By WEIGHT

**Magma Bond® C2** - Main Component (**100grams**), proportional to C2 Catalyst Component (**5grams**)= **5%**. A percentage range of C2 Catalyst= **2%to5%**. Adhesive will be compromised if these proportions are not applied.

# MAGMA ACRYLICS

Add C2 Component to C2 Catalyst Component and mix thoroughly, after mixing cover the vessel and leave until the larger bubbles have risen to the surface. The bubbles should be allowed to rise and the job completed within 20 minutes of adding C2 Component to C2 Catalyst Component, if not used within 20 minutes the bond will be weakened and will result in inferior final performance properties.

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® C2 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® C2 Colour** - After prolonged outdoor exposure (years) in warm climates a slight yellowing of the bond line may appear. This will not affect the mechanical properties of the cement. If C2 Catalyst Component becomes deeply coloured (straw/yellow) the hardening time should be tested by mixing a small amount of the two components. Obtain a new bottle of C2 Catalyst Component if the cement is slow to set or if the Catalyst appearance has started to turn a light straw/yellow colour..

## 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..

C2 Component & C2 Catalyst Component - store in a dark and dry flame proof area in a temperature ranging from 5°C to 25°C. At low temperatures from 5°C and below C2 Catalyst Component may potentially crystallise out of solution. It is important that all solid deposits are re-dissolved before use. This should be done carefully by warming to Approx. 25°C and shaking.

## 8. SHELF LIFE..

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

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