



**MAGMA ACRYLICS** (Pty) Ltd

Exclusively developed acrylic adhesive products

## PRODUCT DATA

### MAGMA BOND E1

#### Magma Bond® E1 - Solvent Acrylic Adhesive

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

**Magma Bond® E1** - is a solvent based acrylic adhesive that hardens at room temperature by both absorption and evaporation of the solvent and depositing polymer into the joint. In addition to the bonding process the solvent softens the surfaces being joined so that they fuse together, hardening as the solvent migrates into the body material. It produces a strong bond to acrylic sheet and offers excellent weathering resistance. The main adhesive component is a low viscous mixture with a combination of complex makeup of chemicals to give the adhesive its unique properties. The product is quickly and easily used directly from the tin!

##### 2. APPLICATION..

**Magma Bond® E1** - is intended for bonding acrylic sheet preferably on either transparent or coloured area bonds of acrylic i.e. premium acrylic, cast sheet and parts made of acrylic moulding compounds with one another, but also for other plastics such as ABS, GS, & XT. Applications include sign making, model making and display units. Unsupported gaps of up to 0.1mm can be produced. The bonding properties of **Magma Bond® E1** are for general fabrication work that does not require a high bond, making it a versatile product that's been specially developed to reduce the problems of rapid drying & 'skinning' common with solvent based adhesives

**Magma Bond® E1** - is not recommended for structural applications on aircraft.

##### 3. TYPICAL VALUES OF PROPERTIES..

- Viscosity (Brookfield II/12/60°F/20°C):  $\leq 14$  mPa • s
- Density/60°F/20°C:  $\sim 1.22$  g/cm<sup>3</sup>
- Refractive index nD68:  $\sim 1.40$
- Colour: Clear
- Flash point (DIN 51755):  $< 95^\circ\text{F} / 35^\circ\text{C}$
- Solids content: 1 +/- 1%
- Storage stability: 1 year after filling, if correctly stored
- Packaging materials: aluminium, HDPE, PP & glass
- Cleaning agents for equipment: Magma Bond® M1
- Curing by evaporation and absorption in the joining materials

##### 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 2 thou (0.05 mm) thick. Since the adhesive evaporates on curing allowance must be made for this when making any type of acrylic joint.

**Magma Bond® E1** must be used on acrylic at room temperature i.e. 16°C to 25°C. If fabrication work is performed below the optimal temperature range the solution may potentially not function as per manufacturer's specifications, so it's important to ensure the optimal temperature range is reached before use.

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- Although **Magma Bond® E1** was developed for minimal evaporation and skinning, the following steps and techniques will reduce possible problems in the bonding process.

- **LIMIT EXPOSURE TO AIR BEFORE APPLYING ADHESIVE.**

Dispense the adhesive directly into the joint using a small flexible polythene bottle with a suitable nozzle or a hypodermic syringe with a wide-bore needle. Use a dispenser that holds no more adhesive than is required for the job. Prevent the nozzle or needle from becoming clogged by inserting a steel wire or pin whenever the dispenser is not in use.

- **REDUCE THE EVAPORATION THAT OCCURS BETWEEN APPLYING THE CEMENT & ASSEMBLING THE PARTS.**

Refrigerate the adhesive for at least 12 hours before use. A domestic refrigerator is suitable (5°C to 10°C). If this is not possible, an alternative is to cool the adhesive containers in cold water, although this is less effective. The quantity of adhesive needed for the following day or shift should be placed in the refrigerator approx. 12 hours before use. Ready filled dispensers should also be kept cool by returning them to the refrigerator after use.

Joints will be hardened after about 1 hour at room temperature but should not be machined for at least 12 hours. To obtain maximum strength more rapidly, leave the bonded area to harden at room temperature for at least 24 hours then heat for 5 hours at 80°C.

Gap filling - Because of its low viscosity the gap filling properties of **Magma Bond® E1** are limited, that means mating surfaces must be machined to close tolerances.

The solvent in **Magma Bond® E1** may cause soluble colourants to migrate from one piece of acrylic to the next. If colour is important, check for any migration by making a small test joint.

## 5. TYPICAL CHARACTERISTICS..

**Magma Bond® E1** 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 Solvent Chemicals. 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® E1** - store in a dark and dry flame proof area in a temperature ranging from 5°C to 30°C.

## 8. SHELF LIFE..

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

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