

# THE GENUINE

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Laminating  
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resin for the O&P  
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A. Algeo Ltd

t: +44 (0)151 448 1228 f: +44 (0)151 448 1008 e: sales@algeos.com w: www.algeos.com



# NEW IMPROVED EASIER TO USE PROSTHETIC LAMINATING RESIN FORMULA

Epoxy-Acryl is the latest innovation in the new generation of Acrylic / Epoxide thermosetting laminating resins offering significant advantages over all other resins in the industry.

- Increased shelf life of up to 8 months.
- Faster gel-to-cure interval time.
- Thinner viscosity allowing easier hand lay-up, workability and fiber wet out.
- A lighter colour with improved clarity.
- Faster strength generation with reduced stress cracking and fewer defects.
- Increased shop cost savings and productivity.
- Excellent corrosion resistance and suitable for use in contact with food when properly cured.
- Easier to use and pigment to any desired colour.
- Fabricate high quality, lightweight laminations.
- Does not liberate gas and will not develop air pockets during curing.
- Low shrinkage of less than 3% compared to polyester resins with a shrinkage of around 7% to 8%.
- BPO Hardener available in either white paste or white powder format

The increased shelf life will save you money by allowing you to order larger quantities per order and take advantage of Ortholam's pre-payment price-quantity schedule. (Email the office for more details.)

You will experience faster gel-to-cure interval times using this new improved Epoxy-Acryl formula. Using the recommended 3% BPO paste or powder hardener at 24 deg C /75 deg F and shop humidity at 40% RH, Epoxy-Acryl will set in 15 ~ 20 minutes. Your results may vary marginally depending on your particular conditions. Minor modifications to the amount of hardener used may be needed to achieve the desired results.

Epoxy-Acryl is a high performance thermo-setting laminating resin that offers exceptional physical properties and ease of use to the prosthetic and orthotic industry. Epoxy-Acryl has a very high fracture resistance without sacrificing rigidity. These unique physical properties allow the designer to create laminations that are very thin, yet strong and durable.

A small amount of non-detrimental post cure manipulation is possible by heating the cured resin matrix to 110 Deg C max. Any heating above 120 Deg C will cause degradation and de-composition. In order to achieve the properties outlined, it is recommended that you follow these tips;

## Gel Time

Epoxy-Acryl is designed to have an estimated gel time of 12 ~ 18 minutes when combined with 3% hardener by mass or volume.

Please use a precision scale or volumetric measuring spoon to measure the hardener to achieve consistent results. (A 60mm long sausage of BPO hardener weighs approx. 1 gram) Reducing the amount of hardener to 2 % will slow the gel-to-cure and adding up to a max of 5 % will accelerate the gel-to-cure. If for some reason less than 2 % hardener is used, heat, not exceeding 100deg.C can be applied to accelerate the curing process.

## Cure Time

Epoxy-Acryl is an epoxy-based resin and the cure rate is slightly volume sensitive. This means that a large amount of resin will cure faster than a small amount, causing the thinner sections of your laminate to take a few minutes longer to cure than the thicker portions. When properly catalyzed, Epoxy-Acryl will achieve very high strength within 60 minutes; however, it will continue to get even stronger, harder and tougher for up to 24 hours. If it is found that thin sections of the lamination have not fully cured due to low exotherm energy, post heat cure in an oven @ 80 ~ 100deg.C for 3 hours to complete the full curing process of the resin matrix. (It is also possible to accelerate the achievement of the ultimate cure strength of the resin by post heat curing as mentioned above.)

## Laminating

When laminating with Epoxy-Acryl you can use an outer bag vacuum of up to 80~90 Kpa, (28 inches Hg), this will ensure a lightweight, thin, well consolidated and void free laminate. Lower vacuum of 40~50 Kpa, (14 inches Hg), can be used to achieve a smoother finish laminate.

Always ensure that your reinforcing fibers are completely wet out. To achieve best results, you will want to laminate over as dry a cast as possible. If it is not possible to have a dry cast, it is recommended that you use a Latex Isolation Sheath, (casting balloon) or alternatively, apply a few coats of Ortho-Seal, quick drying, paintable or sprayable clear lacquer coating on your cast before laminating.

Epoxy-Acryl is ideally suited to the VA-RIM (vacuum assisted - resin infusion moulding) process. Avoid exposing the uncured resin to a vacuum of more than 50Kpa for an extended period of time of more than 10 minutes.

If the resin is kept beyond the recommended shelf life, it is not necessarily unusable, but a quality control test should be performed on the properties relevant to the application.

**For more technical information, please contact Algeos.**