"You Supply the Talent... We'll Supply the Rest!"

The Compleat Sculptor

Tech Sheet - AquaResin ® L™ & S3™

INSTRUCTIONS

The Aqua-Resin® system provides fiberglass laminating and gel coat mixes in which the L™ liquid component and S3™ powder component are combined in simple proportions by weight or by volume (see chart below).

LAMINATING & GEL COATS

Liquid Powder
Weight 1 part "L" 2 or 3 parts "S3"
Volume 1 part "L" 2 parts "S3"

The pot life – 25 to 100 minutes – is, to a large degree, variable as are other properties, simply by adjusting the quantity of powder.

Extra powder will: increase hardness and stiffness, decrease flexibility, decrease set time, and decrease beta.

Less powder will: decrease hardness, increase flexibility and chip resistance, increase pot life, increase beta, and facilitate wet-out.

Molds and Release Agents:

Molds can be of any conventional type and material including Aqua-Resin® itself. Mother molds (jackets) can also be made with fiber-reinforced Aqua- Resin®. Silicone molds need no release agent; however, some silicone mold rubbers may release areas of thin gel coats prematurely, causing "pocketing" or other defects. In such cases, thickening or reinforcing the gel coat will prevent this. Some compatible materials for this purpose are: THX-6™ thickener, AQGFCV ™ surfacing veil, milled fiberglass, and AQG™ chopped fiberglass. Note: fumed silica such as Cabosil® is not compatible with Aqua- Resin®. For other, "non-porous" mold materials, most conventional spray release agents can be used. For Aqua-Resin® molds, and other porous materials, such as plaster, use SEPR-8™ release with no prior sealing. Green soap, PVA or other water-soluble materials are *not* recommended.

Mixing:

S3™ powder is added to L™ liquid in the desired proportions as per chart above. Mix, in a disposable container, until uniformly smooth and lump-free. Then mix an additional 30 – 60 seconds. The mixed material should readily run off a spatula or mixing blades. Laminating and gel coat mixes over 1 pound may be more easily power mixed using a *Jiffy*® or similar mixer. All equipment should be kept clean; hardened material on the mixing blades, brushes, etc. will contain active catalyst, which will shorten the pot life. Gel coat: Using a medium-stiff brush ("chip brush"), paint the gel coat-mix into the prepared mold. One or two coats is sufficient. "Slushing" the gel coat, or spraying is also an option. Once the gel coat has dried (not necessarily cured), approximately 5 - 10 minutes for brush coats, the laminating coats can be applied. Gel coats can be quite thin, typically approximately1/32".

Fiberglass Laminating:

The fiberglass laminating mix, applied with a chip brush, in conjunction with suitable fiber reinforcement, can be applied anytime after the gel coat is dry. Three-quarter (¾) ounce fiberglass mat* is generally recommended. Soaking the mat in water, and then wringing it out well or allowing it to dry, will both make the mat "drape" better, and increase the strength of the laminate.

Wet-out each layer thoroughly; each side of the mat should have wet laminating-mix applied to it. That is, mat should be placed on an area of the mold previously wetted with laminating-mix, then tamped through with the mix from the other side. Additional laminations may be added immediately, or at a later time. The use of a hard ridged fiberglass laminating roller will help release bubbles, increase strength and reduce the amount of laminating mix required. For additional strength substitute AQG™-4.5 chopped fiberglass for all or part of the chopped strand mat. It is important to note that wall thickness of properly applied laminating plus gel coat layers typically total not more than approximately 1/8".

Foam Coating:

Carved rigid foam may be coated with either AQG-FCV™ veil or AQG™ chopped fiber glass incorporated in an Aqua-Resin® mix. Coatings as thin as 1/32" will substantially increase the surface strength of the carving with minimal reduction of detail. *(Please see individual instruction sheets for use of these two Aqua-Resin® fiber glass products.)*

Spraying: Both gel and laminating coats may be spray applied. Some conventional spray equipment can be used or adapted for this purpose.

Casting Solid:
For small pieces, an L™/S3™ mix may be poured directly into a mold. Four parts S3™ or more (pot life will diminish as S3™ is increased) to one part L™ (by weight) should be used for this purpose. Vibrate into mold if necessary.

Beta Stage:
Immediately after the mixed product has solidified, it is in the beta stage. At this point the material is very easy to work, and we recommend doing most tooling and wet sanding operations during this period. This stage can last 1 to 24 hours. Please note that during the beta stage the material is not fully cured and maximum strength has not yet been achieved.

Do not attempt to test strength or hardness at this stage. After 24-48 hours the strength will substantially increase, and can be assessed then.

Demolding:
If time allows, an overnight cure before demolding is preferable. However, if using flexible molds, demolding can be done as soon as the material is hard to the touch, usually within one hour of application. When demolding, deform the mold, not the cast or laminated piece. Use Aqua-Resin® XLR-8TM accelerator to further reduce demolding time.

Finishing:
If there is a possibility of any release agent residue on the finished piece, it may be removed with a cleanser and water. Sanding is best done wet, with waterproof sandpaper. Sanding and seam chasing immediately after demolding, while the piece is still in the beta stage, will be the easiest.

Depressions, seam lines, or cavities can be filled with a putty-mix, or a gel coat/laminating-mix that has begun to thicken.

Aqua-Resin® accepts all conventional paints well. After demolding it can be painted immediately with water-based paints, or after residual water has evaporated, with solvent based paints. The surface of Aqua-Resin® is much like a "sandable primer" and in many cases needs no primer itself.

Clean-up and Disposal:
Clean brushes in a container of water, as needed. Wipe dry with towel. Brushes will harden if left in water uncleaned. Water from container can be safely poured off down the drain after 24 hours. Solid material can be disposed of using normal means.

Appropriate Use:
Aqua-Resin® has been engineered to be suitably strong for its intended uses. It should not, however, be considered a structural material. The user should conduct tests to determine adequate strength for their particular application. In the case of large-scale pieces, it would be prudent to consider incorporating armatures and other means of adding strength and support.

For exterior applications, the use of a good quality sealer or finish paint is recommended. However, Aqua-Resin® may not be suitable for some long-term exterior applications: in particular, submersion in water, or placement on damp soil. Please consult us for additional information.

Aqua-Resin® products do not present any chronic health hazards when used as directed. For additional health and safety information read package warnings and consult MSDS. The use of rubber gloves is recommended when using this product.

*The use of fiberglass cloth or continuous filament mat is not recommended. Use chopped strand mat or AQG™ chopped fiber glass.

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