L/S3

Liquid Component/Powder Component

AQUA•RESIN®

INSTRUCTIONS

LAMINATING & GEL/SURFACE COATS:

The **Aqua-Resin® L/S3** system, in addition to casting mixes, provides fiberglass laminating and gel/surface coat mixes. The **L liquid** component and **S3 powder** component are combined in simple proportions by weight or by volume. The generally recommended and most typical mix ratios are **1:3 by weight** or **!:2 by volume.**

Additionally, if desired, the set time for laminating and gel/surface coats – 30 to 60 minutes – can vary, as can other properties, by adjusting the quantity of powder within limits of the chart below:

	L liquid	S3 powder
weight	1 part	2.5 to 3.5 parts
volume	1 part	1.5 to 2.5 parts

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

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

Please note, that except for pouring solid castings, it is not recommended to increase viscosity of an **Aqua-Resin** mix by adding **S3** powder beyond what is recommended in the above chart. To increase viscosity add **THX-6™** thickener instead. (Please see **THX-6** instruction sheet.)

Molds and Release Agents: Molds can be of any conventional type and material including **Aqua-Resin L/S3** itself. Mother molds (jackets) can also be made with fiber-reinforced **L/S3**. Newly made silicone molds need no release agent. For other "non-porous" mold materials, most conventional spray release agents can be used. For **L/S3** molds and other porous materials such as plaster, use **SEPR-8™** with no prior sealing. Green soap, PVA or other water-soluble release agents are not recommended.

Mixing: Power mixing using a Jiffy type or "bow-tie spring" mixer is recommended for all batch sizes, although batches of less than 1 lb. may be hand mixed. The **S3** powder is added to **L** liquid in the desired proportions per chart above. Mix in a disposable container until uniformly smooth and lump-free. To reduce dusting when power mixing, first hand mix until all the **S3** Powder is incorporated, then begin power mixing. The mixed material should readily run off a spatula or mixing blades. All equipment should be kept clean; hardened material on the mixing blades, brushes, etc. will contain active "catalyst" which will shorten the pot life and can cause lumps or "pills" in subsequent mixes.

Gel/Surface Coat: Using a medium-stiff brush ("chip brush") paint the gel/surface coat mix into the prepared mold. One or two coats are sufficient. Once the gel/surface coat has solidified (not necessarily cured)—approximately 5 to 10 minutes, the laminating coats can be applied. Gel/surface coats are typically about 1/32" thick. Some mold surfaces may release thin gel/surface coats prematurely, causing surface defects. In such cases, thickening or reinforcing the gel/surface coat will prevent this. Some suitable materials for this purpose, used alone or in combination are: **THX-6** thickener, **10 mil Aqua-Veil™** surfacing veil, and **Aqua-Glass™ 1⁄2"** cut fiber.

Fiberglass Laminating: The fiberglass laminating mix, in conjunction with fiber reinforcement, can be brush applied any time after the gel/surface coat has solidified. Using **Aqua-Axial-2™** fabric or **3½-1"** or **4½" Aqua-Glass** cut strand will yield the strongest laminates. First a heavy layer of laminating mix is applied, then **Aqua-Axial-2** is positioned onto the wet mix or **Aqua-Glass** is sprinkled on top. A finned fiberglass roller or a chip brush should now be used to help wet through the **Aqua-Axial-2** or **Aqua-Glass** with the laminating mix being worked up from below. Additional laminations may be added immediately, or at a later time. The percentage, by weight, of **Aqua-Axial-2** or **Aqua-Glass** to laminating mix ideally should be 10 to 15% by weight. The use of a hard finned fiberglass laminating roller will help release bubbles, increase strength and reduce the amount of laminating mix required—and is therefore highly recommended. Finishing the back of the laminate with a layer of 10 mil **Aqua-Veil** will both add and equalize stiffness.

Where optimum strength is not required, three quarter ounce cut strand mat may be substituted for **Aqua-Glass** or **Aqua-Axial-2**. In all cases wet through the **Aqua-Glass** or **Aqua-Axial-2** or cut strand mat with mix from below.

It is important to note that for interior use, the total wall thickness of properly applied laminating plus gel/surface coat layers typically is not more than 1/8"—and in many cases less.

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Foam Coating: Carved rigid foam may be coated with either **Aqua-Axial-2** or **Aqua-Veil**. Coatings as thin as 1/32" will substantially increase the surface strength of the foam with minimal loss of detail. (Please see individual instruction sheets for use of these two **Aqua-Resin®** fiberglass products.)

Spraying: Some types of conventional spray equipment can be used or adapted for spraying **L/S3.** (Contact us at info@aquaresin.com for information.)

Casting Solid: For small pieces, an **L/S3** mix may be poured directly into a mold. Four parts **S3** to one part **L** (by weight) may best be used for this purpose. Vibrate into mold if necessary. A very small amount of **1/2" or 1" Aqua-Glass** may be added to this mix for extra strength, in which case decrease the amount of **S3** proportionately to maintain pourability.

***Beta Stage:** Immediately after the mixed product has solidified, either as a fiberglass laminate or a solid casting, 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: 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 point. 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 rather than pry/force the cast or laminated piece.

Finishing: If there is a possibility of any release agent residue on the finished piece, it may be removed with a cleanser and water. Often RTV rubber mold compounds, especially silicones, can leave a residue of un-reacted mold compound which will need to be removed from the Aqua-Resin part before painting.

Sanding and seam chasing should be done with water and waterproof sandpaper to eliminate the possibility of dust. This is preferably done immediately after demolding, while the piece is still in the beta stage. Depressions, seam lines, or cavities can be filled with a **L/S3** mix thickened with **THX-6**.

Aqua-Resin accepts most conventional paints well. After demolding it can be painted immediately with water-based paints if desired, or better, as is the case with solvent based paints, after residual water has evaporated.

Clean-up and Disposal: Clean brushes, rollers, etc. in a container of water. Dry with a towel. Never wash brushes or tools in a conventional sink, as uncured **Aqua-Resin** will harden in the drain. A preferred method of waste disposal is to let the water evaporate in the wash water container and then dispose of hardened material as solid waste according to local codes and regulations.

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.

Exterior Use: Aqua-Resin is generally suitable for exterior use. However, it is not suitable for all situations and application procedures. Mix ratios and fiberglass content may require extra attention. Please consult us directly at info@aquaresin.com for additional information.

Please note: For maximum strength, the use of **Aqua-Veil** is not recommended as the primary fiber reinforcement. Use instead **Aqua-Axial-2** or **3½-1" or 4½" Aqua-Glass** The use of Aqua-Veil is best reserved for foam coating and gel coating operations.

Also, please note that fumed silica products such as Cabosil® are not compatible with **Aqua-Resin L/S3** mixes.

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 SDSs. The use of rubber gloves is recommended when using this product.

WARNING: Encasing any part of the body with an **Aqua-Resin® L/S3** mix can result in severe bodily injury. See **SDS** for details. aquaresin.com/sds

Please contact us or visit our website for the most up to date product instructions and information.

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