

### INSTRUCTIONS

The **Aqua-Resin® L/S3** system provides fiberglass laminating and gel/surface coat and casting mixes in which the **L** Liquid Component and **S3** Powder Component are combined in simple proportions by weight or by volume per chart below:

#### LAMINATING & GEL/SURFACE COATS

	“L” Liquid	“S3” Powder
<b>Weight</b>	1 part	2 to 3 parts
<b>Volume</b>	1 part	1.5 to 2.5 parts

The generally recommended, and most typical, mix ratios are 1:3 by weight and 1:2 by volume. The set time – 30 to 120 minutes – is variable, as are other properties, simply by adjusting the quantity of powder within the range of the above chart.

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**. 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 similar mixer is recommended for all batch sizes, although batches of less than 1-2 lbs may be hand mixed. The **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. 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.

**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™ ½”** chopped fiber.

**Fiberglass Laminating:** The fiberglass laminating mix, in conjunction with fiber reinforcement, can be brush applied anytime after the gel/surface coat has solidified. Using **Aqua-Glass™ 3.5-1” or 4.5”** chopped strand will yield the strongest laminates; **1” Aqua-Glass** may however be used for laminating smaller parts. First a heavy layer of laminating mix is applied; then the **Aqua-Glass™** is sprinkled on top. A ridged fiberglass roller or a chip brush should now be used to help wet through the **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-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 or 30 mil **Aqua-Veil™** will both add and equalize stiffness.

Three quarter ounce chopped strand mat or one ounce stitched mat may be substituted for **Aqua-Glass™**. In all cases wet through the glass 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”.

**Foam Coating:** Carved rigid foam may be coated with either **Aqua-Veil™** or **Aqua-Glass™** chopped fiberglass incorporated in an **L/S3** mix. 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® fiber glass products.*)

# AQUA-RESIN<sup>®</sup> L/S3 INSTRUCTIONS

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**Spraying:** Various types of conventional spray equipment can be used or adapted for spraying **L/S3**. (Contact us at [info@aquaresin.com](mailto: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 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.

**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 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, 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 is best done *wet*, with waterproof sandpaper, 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<sup>™</sup>**.

**Aqua-Resin<sup>®</sup>** accepts most conventional paints well. After demolding it can be painted immediately with water-based paints or 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<sup>®</sup>** 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. *Please dispose of waste material according to local codes and regulations.*

**Appropriate Use:** **Aqua-Resin<sup>®</sup>** 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<sup>®</sup>** is generally suitable for exterior use. However, it is not suitable for all situations and application procedures. Mix ratios and fiberglass content will require extra attention. Please consult us directly for additional information.

**Please note:** For maximum strength, the use of **Aqua-Veil<sup>™</sup>** or fiberglass cloth (woven) is *not* recommended as the primary fiber reinforcement. Use instead 3-1/2" or 4-1/2" **Aqua-Glass<sup>™</sup>** or 3/4 oz. chopped strand mat. The use of **Aqua-Veil<sup>™</sup>** is best reserved for foam coating and some gel coating operations. Fiberglass glass *cloth* should only be used for some specialty applications.

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

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**Aqua-Resin<sup>®</sup>** 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. **WARNING:** Encasing any part of the body with **Aqua-Resin<sup>®</sup> L/S3** can result in severe bodily injury. See MSDS for more details.

*The above recommendations and instructions provided for Aqua-Resin<sup>®</sup> products are presented in good faith and believed to be correct and accurate. However, since user methods and conditions of application are entirely beyond our control, this information is offered with warrantee. The user is advised to do their own testing to determine suitability for their particular application.*

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

[www.aquaresin.com](http://www.aquaresin.com)

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