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Working tips for **Super Sap 100 Epoxy / 1000 Hardener System**
And Super Sap CLR Epoxy / CLR Fast Hardener System

What is SUPER SAP Epoxy?
It's a low viscosity, ambient cure bio-based liquid epoxy system that's partially derived from natural, renewable resources such as industrial waste pine and vegetable oils.

Our epoxy resins were engineered to maximize 3 things:

1) Mechanical performance; strength, toughness, and flexibility
2) Sustainability
3) Workability (for wet-layup and ambient cure conditions)

Safety
Although **SUPER SAP** has a lower percentage of typically sensitizing ingredients, normal safety precautions should still be taken. As with all resins, we suggest adhering to all OSHA and NIOSH regulations for working with epoxy resins, which may include using VOC rated respirators, proper ventilation, eye protection, gloves, and other protective clothing. Refer to MSDS for more information and emergency contacts.

Surfboard Wet-Layup Laminating Tips

***NOTE – Computer ink-jet printed color logos on rice paper may bleed during lamination. Also, some green inks may fade when used with 100/1000 system. We suggest using only black ink, or avoiding shades of green & blue, if using computer ink-jet printing. We highly suggest using professionally silk-screened or laser printed logos on rice paper.**

- Ideal temps for epoxy work is 72-80 ºF. Colder or warmer temperatures will affect potlife, viscosity, coating properties, and cure times. Best results will be achieved if you can pre-warm the resin to roughly the above temps before beginning work.
- Although our resin mix ratios are forgiving (within 2-5% error, we recommend using a scale or graduated plastic cups (HDPE) to weigh out the proper ratios by weight, or volume (roughly 2:1).

- Mix well with a large mixing stick (2-3minutes) or with a power mixer (1 minute) at slow-medium speed. Be sure to scrape the sides of the mixing container to achieve an even mixture and proper cure. Avoid creating foamy bubbles when mixing. If bubbles are introduced, you can allow the resin to sit in the cup for around 5 minutes while bubbles escape. Monitor the resin's temperature and make sure it does not begin to exotherm above 110ºF (gets very hot due to reaction chemistry).
- A medium to hard squeegee (yellow plastic) can be used to move the resin around the fiberglass surface. Overworking the resin should be avoided as it can introduce small bubbles and foam into the resin. Epoxy should be allowed to soak into the fiberglass on its own, and does not need to be squeezed on with much force. Overworking the resin can lead to foaminess or cloudiness. If this does occur, a hair dryer on medium speed and high heat can be used to pop bubbles and clear cloudiness from the lamination. Be sure to not keep the hair dryer in one place to long, and this could melt or cause out-gassing of the foam.
- Spread the resin evenly on the flat areas first at a steady even pace. Do not overwork the resin as this may introduce foamy bubbles into the resin. If foamy resin does develop, avoid reintroducing it into the fiberglass. Foamy resin can be set aside in a separate cup, and a hair dryer can be used to reduce the foaminess.
- To coat the laps, a resin bead should be laid out on the rail by quadrants. A hard yellow squeegee can be used to push the resin down and into the laps.
- After the laps are wet out, a medium to hard squeegee can be used to pull excess resin off the flats. Once the flats are evened out, the laps can be tucked, and excess resin pulled off with a soft yellow squeegee.
- Since the 100/1000 resin is amber colored by nature, a small addition of white tint can help hide any inconsistencies in the lamination or blank.
- Most resin tints and opaques are compatible with Super Sap.
- **NOTE*:** *Some brands of tints have an adverse reaction with epoxies in general, and may change from their original color, particularly browns, reds, and magentas. Always test a small amount of resin with any new tint prior to application on a finished product.*

Thin Film Coating Tips aka Hot Coats

- Hot coating should ideally be done at temperatures at or below 75 ºF, usually in the mornings or evenings, when it is cooler. Temps above 75-80 ºF can lead to increased chances of fish-eyes or dimples in the hot coat, due to reduced surface tension.
- For tack free and sandable surfaces, you may use 1-2 cc or 1-2 ml of surfacing agent (Xylene/Wax solution a.k.a. Additive F from Resin Research) per oz of hardener (@ 72 ºF, < 70% humidity).
- Mix by stick (2-3 minutes) at slow speed to minimize bubbles. Be sure to scrape the sided and bottom of the cup. If many bubbles are introduced, allow the resin to sit in the cup for 3-5 minutes, making sure it does not

exotherm (overheat and cure) in the cup. After sitting slowly re-stir the surfacing agent uniformly into the mixed resin. By allowing the resin to pre-warm in the cup (aka induction) the resin will achieve an ideal temperature and viscosity for hot coating applications.

- **Optional** -** *To help give the smoothest brushed hot coat possible, you can apply a thin "cheater coat" over the glass lamination by applying a small amount of resin (3-4 oz per 6-7 ft board) using a soft flexible squeegee. Allow the cheater coat to tackify, but not fully cure to a tack free finish. (~1 hour). A brushed hot coat should be applied immediately after the cheater coat begins to tackify. If the cheater coat does cure to a hard film, it should be prep sanded with 80-100 grit sandpaper to create mechanical bonding with the next hot coat.*
- Using a 3" chip brush, resin should be spread tip to tail in smooth, slow, even strokes with medium pressure. Pour the resin starting in the middle of the board, working out to the rails. Try to avoid moving the brush to fast or too lightly across the board, as this may introduce bubbles.
- Cross strokes (45 degree to the stringer) can be used to even out resin, followed by finishing strokes tip to tail. Again try to not overwork the brush and avoid introducing bubbles.
- A hair dryer or small propane torch can be used to pop small microbubbles or foamy areas due to excessive Additive F. Quick brush like movements back and forth using the hair dryer or torch should pop most bubbles. Give the resin adequate time to self-level and it should cure to a smooth glossy finish.
- **NOTE*:** *For the glossiest possible hot coat, use Super Sap CLR.*

Finish Sanding & Gloss Polishing Super Sap

- Super Sap CLR can be used to give a polished gloss finish.
- A primary hot coat should be applied, and then sanded back as smooth as possible to a 100-150 grit, which creates a mechanical bond with the following gloss coat.
- Surfacing agent (Xylene/Wax solution a.k.a. Additive F from Resin Research) will help to achieve a smooth gloss coat, especially during colder weather (< 70ºF). Use 1-2 cc or 1-2 ml of surfacing agent per oz of hardener (@ 72 ºF, < 70% humidity). Gloss coating at warmer temperatures (>75-80ºF) should be avoided as it may create surface tension problems that could lead to "fish-eyes" or dimples in the coating.
- Once both top and bottom are cured, the resin can be buffed out starting at, no less than 400 grit. Wet sanding with 800, and followed by 1000, and then surfboard polish with a buffing pad should create a shiny polished surface.

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