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## AeroMarine Epoxy 400/21 High Performance Epoxy

AeroMarine Epoxy 400/21 is a high performance epoxy used for all applications where the standard Aeromarine 300 is used. It is stronger, tougher, and takes higher temperatures than Aeromarine 300. It cures a bit faster and is a thicker liquid.

*\*You must accurately calculate the size of your project and the amount of epoxy that you will need!\*  
If you are applying our epoxy over a porous surface, you may need to use more epoxy to obtain your desired coverage.*

Our 400/21 epoxy is NOT UV resistant. It will yellow in sunlight.

**\*\*IF USING THE COLORED VERSION, YOU MUST TURN THE CONTAINER UPSIDE DOWN EVERY 7 DAYS TO MAINTAIN COLOR DISPERSION. SHAKE THE COLORED RESIN VIGOROUSLY FOR 2 MINUTES BEFORE USING!\*\***

### Features:

- Extreme toughness
- Negligible shrinkage
- Room temperature cure
- Low- medium viscosity
- Improved temperature resistance
- Contains no reactive diluents
- Temperature resistance to 250F

### Specifications:

|                        |                           |
|------------------------|---------------------------|
| Viscosity:             | 1000 cps                  |
| Mix Ratio:             | 2:1 by volume             |
| Color:                 | Clear, slightly amber     |
| Work life:             | 20 minutes@70F            |
| Cure time:             | 24 hours@70F              |
| Shear strength:        | 2800psi                   |
| Dielectric Strength    | 450 volts per mil or more |
| Flexural strength:     | 17,500psi                 |
| Modulus of elasticity: | $5.9 \times 10^6$         |

### Directions for use:

Mix the resin and hardener 2 to one by weight or volume. AeroMarine Epoxy 400/21 begins to gel in about 20 minutes, depending on the size of the batch and the temperature. Apply to clean dry surfaces. Cleaning with acetone, alcohol, or MEK is recommended. Sanding or abrading surfaces generally increases bond strength.

**For industrial or professional use only**



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### Directions for use:

**Double Mix and Pour Method:** Mix 2 parts AeroMarine 400 Resin to 1 part AeroMarine 21 Hardener. Mix the two components together in a clean plastic container for 2 minutes, then transfer the mixture to another clean plastic container and mix them again for another 2 minutes. The theory is that the liquids clinging to the sides and bottom of the containers don't get mixed well. By transferring the mixture to another clean container, you are assured that everything is well mixed.

To avoid excess exotherm, mix small batches until you are familiar with using this material.

*DO Not mix the entire amount of resin and hardener together all at once. It will cure in your mixing container!*

**How to warm up frozen 400 resin:** First, make certain that the resin container lid is tightly closed. Next, place the container of frozen resin in a bucket or sink of hot (Not boiling) water. Leave the container of frozen 400 resin in the hot water for about 15-20 minutes per pint of resin until the 400 resin returns to its liquid state. It may require several hot water soaks before it becomes liquid. Once it is liquid again, the 400 resin is ready to use!

### Best practices when using epoxy resin

**Never mix less than about 3 ounces of product.** When manufacturers design and test their resins they normally write the specifications for 100 gram batches, which is about 3 ounces. There are two bad things that can happen when mixing a smaller batch. Because the sample is small, it is much more difficult to get the mix ratio correct. Also, these mixtures are exothermic, meaning that they generate heat in order to cure. A tiny batch does not generate enough heat to cure the resin properly.

**Avoid mixing a large batch-** At least until you are familiar with the product. The larger the batch, the more exotherm or heat is generated in the cure cycle. If you are casting a large part, consider mixing small batches to make the process more manageable. Thickness of the pour also affects the exotherm and cure speed. 3/8" is about the maximum thickness to pour most epoxies.

**Do not vary the mix ratio-** Old style polyester resins were catalyzed with a chemical called MEK. You could vary the mix ratio to get different reaction speeds. Modern epoxies, polyurethanes, and silicones are different. They don't use a true "catalyst", but have a different kind of reaction method. Varying the mix ratio usually results in a mess.



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**Mix and pour everything twice-** Please see instructions above.

**Mix in plastic containers.** Paper cups contain moisture which may adversely affect the resin, especially polyurethanes. Avoid waxed paper cups as well.

**Avoid mixing with drill motors.** Mixing with an electric drill can cause a few problems. Frequently they don't get into every corner of the mixing container. Also, if they spin too fast they can generate friction in the resin causing it to exotherm out of control resulting in premature curing. Powered mixing also can generate a lot of air bubbles.

**Storage-** Epoxy hardeners usually last forever. Epoxy resins, however, tend to freeze even at fairly high temperatures, 50F. If allowed to freeze, "epoxy ice" can form in the container. It usually looks like swirls of white stuff suspended in the resin. Please see instructions above for warming up frozen 400 resin. Or, you can use the "non-ice" part of the epoxy.

**Spraying-** Do NOT Spray! Epoxies don't spray well. They tend to run off vertical surfaces when sprayed. Addition of Cabosil will eliminate the run-off, but the epoxy turns a whitish color.

**Clean-up-** We use aerosol carburetor cleaner to clean up spills and messes. Otherwise just about any solvent will work, including acetone, MEK, toluene, xylene, and lacquer thinner. Avoid regular paint thinner (mineral spirits). To clean hands, use "Fast Orange" hand cleaner available in automotive supply stores.

**Test-** Always run a test to determine the feasibility of your process. There are many unforeseen factors that can affect the outcome of your project. Running a controlled test may be inconvenient, but it can make the "Learning Curve" of processing these products much easier.

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