



AeroMarine Products, Inc.  
9020 Kenamar Dr Ste 206  
San Diego, CA 92121  
(877) 342-8860

[www.aeromarineproducts.com](http://www.aeromarineproducts.com)  
[info@aeromarineproducts.com](mailto:info@aeromarineproducts.com)

## **AeroMarine Products 400/21 High Performance Laminating Epoxy**

AeroMarine Products 400/21 Epoxy is a high performance epoxy used for laminating composite structures. It is normally used in applications not exceeding 250F.

*\*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.*

**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**

### Specifications:

Viscosity:	1000 cps
Mix Ratio:	2:1 by volume
Color:	Clear, slightly amber
Work life:	30 minutes@70F
Cure time:	24 hours@70F
Shear strength:	2800psi
Flexural strength:	17,500psi
Modulus of elasticity:	5.9 x 10 <sup>6</sup>

### Directions for use:

Mix the resin and hardener 2 to one by weight or volume. AeroMarine Products Epoxy #400/21 begins to gel in about 30 minutes, depending on the size of the batch and the temperature. Apply to clean dry surfaces. Cleaning with acetone, alcohol, or lacquer thinner 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 Products 400 Resin to 1 part AeroMarine Products 21 Hardener. Mix the two components together in a plastic container for 2 minutes, then transfer the mixture to another 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 container, you are assured that everything is well mixed.

To avoid excess exotherm, mix small batches (at least 4 ounces of resin and 2 ounces of hardener) until you are familiar with using AeroMarine Products 400/21 Epoxy.

**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. If the sample is too small, it is much more difficult to get the mix ratio correct. 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** Mix about a quart at a time. The larger the batch, the more exotherm or heat is generated in the cure cycle. If you are covering a large area, mix 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** Varying the mix ratio usually results in a mess.

**Mix and pour everything twice** Please see "Double mix and Pour" instructions above.

### Mix in plastic containers

**Avoid mixing with drill motors** Mixing with an electric drill can cause problems. They don't get into every corner of the mixing container. Drills spin too fast, they can generate friction in the resin causing it to exotherm out of control resulting in premature curing. Powered mixing can generate a lot of air bubbles which will result in a lot of extra work in the end.

**Storage** Epoxy resins tend to freeze even at fairly high temperatures, 70F. 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. Using frozen epoxy can cause areas of uncured epoxy as the "epoxy ice" will defrost in the heat generated by the exotherm.

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



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**Clean-up** We use aerosol carburetor cleaner to clean up spills and messes. We suggest using acetone, toluene, xylene, and lacquer thinner for your tools. Avoid regular paint thinner (mineral spirits). To clean hands, use pumice hand cleaner available in automotive supply stores.

**Test** Always conduct 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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