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

AeroMarine Products Black Urethane Polymer Casting Resin

AeroMarine Products Black Urethane Polymer Casting Resin is a thin, very fast setting polymer used for casting parts for many applications. It features a simple “one to one” mix ratio. It contains no fillers, has low odor, and cures to a deep black color. Also, our black urethane polymer casting resin is easily painted.

AeroMarine Products also offers a white urethane polymer casting resin, mold releases for urethanes as well as urethane colorants for casting resin.

Features:

- Low Viscosity
- Low odor
- Minimal shrinkage
- Excellent electrical and mechanical properties
- Good chemical resistance
- Attractive black color
- Virtually bubble free
- High Dielectric strength--useful for electronic potting

Uses include:

- Casting figurines
- Casting prototypes
- Potting electronic assemblies
- Casting fishing lures
- Taxidermy applications
- Casting industrial parts

Specifications:

Mixed viscosity:	100 cps (Almost water thin)
Color:	Black
Work life:	1 minute @70F
Demold time:	15 Minutes@70F
Hardness:	75- 80 Shore D (Very hard)
Flexural Strength	8200psi
Tensile Strength	5840psi
Dielectric Strength	>400 volts per .001”
Specific Gravity	1.09
Specific Volume	28 cubic inches per pound

Directions for use:

Mix equal parts by volume. To avoid excessive exotherm, mix smaller batches (of at least 3 ounces) until you are familiar with using this material. Various fillers can be added for custom results. All urethanes are moisture sensitive, so any fillers must be dry. Store in sealed, dry containers.

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Best practices when using AeroMarine Products black urethane polymer casting 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.
Two bad things 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 urethane resin properly.

Avoid mixing with drill motors. Mixing with an electric drill causes problems. 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. This leads to premature curing. Powered mixing also generates a lot of air bubbles.

If you use a mold release, let it dry for a while. A spray can of mold release contains a lot of solvents and propellants. These compounds need to evaporate off the surface so they don't cause bubbles. Check the dry time of the mold release on the mold release container label.

Don't vary the mix ratio. Unlike some polyester resins, altering the mix ratio to vary the cure cycle doesn't work with urethanes.

Mix everything twice- Mix the two components together in a clean plastic container, then transfer the mixture to another clean plastic container and mix them again. 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 plastic container, you are assured that everything is well mixed. Any unmixed material stays in the first container. **When using very fast, water-thin black casting resin, you may only have time to mix it once, but since it is water-thin, it will probably mix fine in one mix.

Mix in clean plastic containers. Paper cups and wooden mixing tools contain moisture which may adversely affect the polyurethane. Avoid waxed paper cups because the wax may melt and contaminate the resin.

How to avoid air bubbles Air bubbles in urethanes are almost always caused by moisture. Do everything possible to avoid moisture getting into the mix. This includes replacing the lids onto the containers immediately after use. Avoid using the product during rainy days or times of high humidity. Don't pour against an unsealed water based product such as plaster or hydrocal. Seal plaster or hydrocal with something like Krylon Clear Acrylic. An aerosol nitrogen blanket can increase the shelf life of the urethane during storage.

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, mix small batches to make the process more manageable. Thickness of the pour also affects the exotherm and cure speed. A very thin pour will take much longer to cure than a thick pour.

Shake or stir well before use The liquid components may settle in the containers during storage. It is a good idea to shake or stir the components separately before mixing. Let it sit a few minutes to let any bubbles rise to the surface after shaking the container.

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Test Always run a test 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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If the seller's product is proven to be defective, THE EXCLUSIVE REMEDY, AT SELLER'S OPTION, SHALL BE TO REFUND THE PURCHASE PRICE OF OR TO REPAIR OR REPLACE THE DEFECTIVE PRODUCT. Seller shall not otherwise be liable for loss or damages, whether direct, indirect, special, incidental, or consequential, regardless of the legal theory asserted, including, but not limited to, contract, negligence, warranty, or strict liability.