Alumilite
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TECHNICAL DATA SHEET

ALUMILITE CLEAR SLOW

Alumilite Clear Slow casting system produces a hard clear cast piece that polishes beautifully. The material has excellent cosmetic detail and is easy to use. The Clear can be dyed or pigmented to obtain beautiful colors and finishes. Clear is great for making quick, cosmetically clear parts, or prototypes. Alumilite Clear Slow is also recommended for encapsulating and turning applications to create artistic pieces as it is extremely durable and turns beautifully without chipping or cracking. For industrial/professional use only.

PRODUCT SPECIFICATIONS	
Mix Ratio by Weight	1 : 1
Mixed Viscosity	450 cP
Work Time (100 gram mass)	12 minutes
Demold Time	2-4hours
Tack free time	4-5 hours
Full Cure Time	5-7 days or 16 hours @ 150F
Ultimate Shore Hardness (ASTM D-2240)	D80
Heat Deflection Temperature (ASTM d-648) (F)	130F
Tensile Strength (ASTM D-638) (psi)	4200
Elongation Strength (in/in)	10-15%
Flex Strength (psi)	7,020
Shelf Life	6 months
Color	Clear

BEFORE USE: Thoroughly read Safety Data Sheets, product labels and the "SAFETY" section in this Technical Data Sheet.

IMPORTANT: PLEASE NOTE

- It is critical that your frame or mold is watertight. Frames should be built out of material that can easily dissipate heat.

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- It is best to use platinum base silicone rubber molds when pouring Alumilite Clear and Water Clear. New tin base silicone rubber molds should be conditioned to clean and crosslink any uncured tin that is on the surface of the mold that may contaminate the clear casting. Important Note: Your mold must have a high gloss surface to produce a see through/glossy appearance in your casting. If the surface of your mold has a matte finish, your clear casting will also have that same appearance which will make a frosty appearance on your cast piece. So be sure your master is highly polished without any blemishes prior to molding. Then your mold will reproduce the quality of the original and your finish piece will look just as your original.
- Mold Preparation: Before mixing and pouring the resin into your mold to achieve a cast resin piece there are a few things you can do to prepare your mold that will greatly enhance the physical properties and curing of your cast resin piece. The first thing you can do is to preheat your mold. Warm the mold in a conventional oven at 120-150 degrees F for 15 minutes or warm your mold in a microwave for 1 minute/lb of rubber on high. This will only warm your mold and will not affect the microwave or your mold adversely. It will however help the thin sections of your casting cure more evenly with larger sections and reduce your demold time. It will also help the resin set up uniformly to give you a consistent fully cured cast piece. (It is highly recommended to warm your molds when using the Slow Set, Water Clear, Clear, Flex, Amazing Clear Cast, or parts under a 1/2" in thickness to ensure proper curing.)
- This product is not intended for permanent outdoor use or direct UV exposure. It does contain UV inhibitors to help resist yellowing, but all epoxy products will eventually begin to yellow. This includes the base resin, curing agent, as well as the finished cured products.
- If you wish to embed paper decals, bottle caps, or other objects under a tabletop surface, those objects need to be bonded to the surface with craft glue or a thin coat of Amazing Clear Cast Plus. Paper products must be sealed prior to applying the resin as the resin could soak in and ruin the paper product. We recommend a solution of 4 parts white glue and 1 part water or Mod Podge to seal the paper.
- Alumilite Clear Slow can be dyed or pigmented using non-water base dyes. Alumilite offers a line of translucent dyes in standard colors that react/crosslink chemically with the resin to achieve beautifully translucent cast pieces with no worry of leaching or color ever coming out of the cured piece. Alumilite's Flourescent, White, and Black are not completely transparent as they contain some filler. When used in small quantities, they do not affect the transparency of the piece. However, if used in higher percentages, they can add opacity to the cast piece. Use very small amounts of dye to achieve bright translucent colored castings. If you are looking to use a dye, pigment, or filler that you have not used before, we highly recommend making a small test sample to ensure compatibility before using in resin.
- When mixing the Curing Agent and Base Resin, any cloudiness should clear up. If the product appears cloudy or is not crystal clear, contact our customer support team before applying to your final project.

BEFORE YOU BEGIN

Work Environment: The ideal working temperature is around 65-75°F in a clean, dry, dust-free environment. Avoid working in high humidity. We highly recommend keeping fans on your project to help dissipate heat.

Coverage: You can use the coverage calculator on our website to determine the volume of mixed resin that you will need before you begin your project. Please remember, this is not an exact science, as each

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project is different and each substrate will absorb the epoxy differently. As the product fills the cracks and crevices in your mold, the level may drop. Be prepared to add more epoxy as needed. The calculator does not account for embedded objects. It is always best to have more than enough material on hand to ensure completion of your project.

Color and Stability: As with all epoxy chemistry, ACS will develop a yellow hue over time. While there are UV inhibitors in our system that help it resist longer than some competitor products, a yellow hue will still develop over time. Many times this is not ever noticed based on the underlying surface color and the relative thin layer. Applications where ACS is applied over bright white surfaces or when pouring thicker layers, yellowing may be more evident. We generally do not recommend ACS for outdoor applications, as the UV exposure will cause the resin to develop a yellow hue rather quickly. There are some instances where it may be reasonable such as adding Alumilite dye or Alumidust to color the resin, which often negates or minimizes the yellowing. Also applying it over certain toned wood surfaces that have more yellow and orange hues to it would make the yellowing less noticeable.

Materials: Be prepared with all necessary materials and tools before beginning your project.

- Epoxy resin & dyes (if desired)
- Stir-sticks for mixing polymer
- Utensils to shape material
- Molds for artistic creation
- Items for embedding if desired
- Misc. handling tools – scissors, pliers, a drill or Dremel tool, torch, heat gun, etc.

MIXING & POURING

When measuring epoxy for use, stick with the recommended ratios in the instructions (for best results), and blend just what you think you'll need - as once mixed – leftover epoxy can't be saved. You're better off making several small batches as you progress with your project; aside from saving on material - epoxy has a limited working time until the curing process begins. Depending upon the ambient conditions (temperature & humidity) – you'll have about 45-60 minutes. Larger amounts of mixed resin will shorten your work time as will warmer ambient temperatures. Mixing large volumes similar to 1 gallon volumes, you can expect the open time to be cut in half.

Step 1: The mix ratio of Alumilite Clear Slow is 1:1 by WEIGHT. Using a graduated mixing container, weigh out equal parts per side. Varying the mix ratio will alter the cure and change the physical properties in a negative ways such as tackiness or uncured surfaces. When mixing multiple batches, it helps to have a dedicated side A and side B measuring cup, which are then added to a larger mixing container.

Step 2: After the materials have been poured together, mix thoroughly (keeping the stir stick in contact with the bottom of the cup - reduces air from being introduced into your resin) for approximately 30-45 seconds. Make sure to scrape the sides and the bottom of the mixing cup and continue to mix until no swirls are seen.

Step 3: Once the material is thoroughly mixed, pour the resin slowly down the side of your mold cavity. Tilting your mold will prevent the resin from splashing in the bottom of your mold and creating

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unwanted air bubbles that would then need to find their way to the top of the mold. Do NOT scrape out the last of the resin onto your project as unmixed epoxy on the sides or bottom of the container could contaminate your project, leading to curing issues.

Step 4: If your mold has undercuts, pour enough resin into the mold to fill it half way. Then, tilt and rotate the mold in the opposite direction of the undercut to allow the air to escape up the side of the mold. Squeezing or burping the mold at the same time will also help relieve the air trapped in the undercut and allow the bubbles to release from the mold surface. To remove air bubbles that have risen to the surface, use a heat gun or torch in a sweeping motion, holding the heat source approximately 6-10 inches away from the surface until no bubbles remain. Avoid heating any one spot for too long to prevent any distortions in the finish.

Step 5: Alumilite ClearSlow has an Open Time of 12 minutes at 75 Degrees F (100g mass). Larger amounts of mixed resin will shorten your work time as will warmer ambient temperatures. Mixing large volumes similar to 1 gallon volumes, you can expect the open time to be cut in half. To increase the open time by 1-2 minutes, simply chill the “A” & “B” sides of the Clear and Water Clear. When cooling your resin, we highly recommend preheating your mold to ensure a proper cure.

Step 6 (optional): When used at room temperature, castings 1/8" thick or larger can be readily cast but extremely large masses over 4 inches thick can produces excessive exotherms that can cause cracks in the part. Castings that are less than 1/8" thick generally require mild post-cure. Always warm your molds to approx. 125 degrees F before pouring. Parts that remain soft or flexible may need a similar post cure.

CLEAN UP & DISPOSAL

Mold releases may leave witness marks on the surface of your finished clear casting as every tiny detail will show or effect the surface of your casting and we caution you to test using mold release to see if it will witness the surface prior to casting production grade parts. If you need to use mold release to either ensure release of non-silicone molds (aluminum, urethane elastomers, latex, etc) or to maximize the number of releases out of your silicone rubber molds, we recommend using Alumilite’s Stoner Urethane Mold Release. This offers maximum release and puts an effective layer of release on non-porous surfaces to release Alumilite Casting Resins. When using the Stoner Mold Release, some release will transfer to the cast resin part after demolding and may interfere with the ability to paint or bond the cast resin piece. A mild solvent wash and perhaps even some mild abrasion may be required to remove the Stoner from the casting.

Tools can be cleaned with Isopropyl Alcohol 99% or a residue-free cleaner. Do not use soap and water. Dispose of product and container according to Federal, State and local regulations. Store any remaining product in the original bottles, tightly sealed and locked up in a cool, dry environment.

SAFETY

Safety: Before use, thoroughly read Safety Data Sheets and product labels. Follow safety precautions and directions.

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• Wear gloves to keep skin out of contact with the epoxy
• Safety glasses or goggles are well advised when working with epoxy to protect eyes
• Protect clothing with a work smock or other outer garment
• For cleaning surfaces, containers – use Acetone, rubbing alcohol or nail polish remover
• When stored separately, epoxy & hardener have long shelf lives – store in a cool dry area in tightly sealed containers

Resin: Keep out of reach of children. Avoid breathing vapors. Use with adequate general or local exhaust ventilation to minimize exposure levels. If needed, a NIOSH-approved respirator with organic vapor cartridge may be used. If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. Wear impervious gloves, such as butyl rubber or nitrile rubber. Wash skin thoroughly with soap and water after handling. Take off contaminated clothing and wash it before reuse. If skin irritation occurs, get medical help. Wear eye protection, such as chemical safety glasses/googles. If in eyes, rinse cautiously with water for several minutes, removing contact lenses if present and easy to do. If eye irritation persists, get medical help.

Hardener: Keep out of reach of children. Do not eat, drink, or smoke when using this product. If swallowed, rinse mouth and get medical help. Use with adequate general or local exhaust ventilation to minimize exposure levels. If needed, a NIOSH-approved respirator with organic vapor cartridge may be used. If inhaled, remove victim to fresh air and keep at rest in a position comfortable for breathing. Wear impervious gloves, such as butyl rubber or nitrile rubber. Wash skin thoroughly with soap and water after handling. Wear eye protection, such as chemical safety glasses/googles. If in eyes, immediately rinse with water for several minutes, removing contact lenses if present and easy to do. If eye irritation persists, get medical help.

WARNING: THE EPOXY CURE REACTION IS VERY EXOTHERMIC. Do not apply in thicknesses greater than the recommended maximum application thickness for the product. DOING SO CAN CAUSE WARPING AND EVEN A FIRE.