55 Hilton Street, Easton PA 18042
(269) 488-4000
www.alumilite.com

TECHNICAL DATA SHEET

Plat 40

Plat 40 is a 1:1, platinum base, FDA food compliant silicone rubber that are great for making molds of all kinds including resin, wax, soap, chocolate, sugar, fondant, ice, plaster, concrete, and more. Plat 40 is extremely flexible and is great for making molds with extreme undercuts or molds for delicate casting materials such as chocolate and sugar. Plat 40 is a low viscosity silicone that is extremely easy to mix and use while reproducing extremely fine detail.

PRODUCT SPECIFICATIONS	
Mix Ratio	1:1 by Volume
Mixed Viscosity	8000 cps
Working Time	35 minutes
Demold Time	16-24 hours
Hardness	40-A
Full Cure Time	7 days
Tensile Strength	520psi
Tear Resistance	91 pli
Elongation Strength	350%
Shelf Life	1 year
Color	Translucent

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

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IMPORTANT: PLEASE NOTE

- **Food Safety Compliance** – Plat 40 complies with **FDA 21 CFR 177.2600** and is safe for food contact. Molds intended for food use should be used exclusively for food and not for any other casting applications.
- **Mold Box** – It is critical that your frame or mold is watertight. Frames should be built out of material that can easily dissipate heat. Degassing is not required but recommended if available.
- **Mold Release & Material Compatibility** – Mold release is required when pouring silicone against silicone to prevent bonding, especially for two-piece molds.
    - Recommended mold release options: Alumilite's UMR in combination with Rubber Mold Release or a thin layer of Vaseline.
    - Avoid contact with porous materials (fabric, clothing, carpet, and non-sealed surfaces) as the silicone will bond permanently.
    - Ensure the master is securely fastened to the mold base to prevent floating during the molding process.
- **Surface Finish Considerations** – The surface of the master must have a high-gloss finish to achieve a clear and glossy casting appearance.
    - A matte master surface will result in a matte finish on the final casting.
- **Platinum Silicone Inhibition** – Plat 40, like all platinum-based silicones, is susceptible to inhibition when in contact with certain materials. Inhibited areas will fail to cure, remaining wet and never hardening, while unaffected areas will cure normally.
- **Common materials that cause inhibition:**
    - Tin or amine-cured resins
    - Vinyl-based materials (duct tape, PVC, etc.)
    - Sulfur-based clays
    - Cyanoacrylates (super glue)
    - Latex, neoprene, Buna N, and natural rubbers (e.g., rubber stamps)
- **Testing for** Compatibility – If unsure, conduct a small test before molding. Mix a small amount of Plat 40 and press it onto the material in question. If inhibition occurs, the detail will smear, and the silicone will not harden on the surface.

BEFORE YOU BEGIN

Work Environment: The ideal working temperature is around 65-75°F in a clean, dry, dust-free environment.

Coverage: There are approximately 21 cubic inches of volume per pound. Therefore, to calculate your needed material, find the area of your mold box minus the area your master in cubic inches.

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

- Stir-sticks
- Mold box
- Misc. handling tools – X-acto knife, pliers, a drill or Dremel tool, heat gun, etc.

MIXING & POURING

When measuring for use, stick with the recommended ratios and blend just what you think you'll need. Once mixed, leftover mixed material can't be saved. Depending upon the ambient conditions (temperature & humidity) – you'll have about 35 minutes. The more humid and warmer the environment is, the faster your silicone will cure. Temperature alone will not accelerate the cure of Plat 40 or any other platinum-based silicone. Moisture/humidity is also required.

Step 1: The mix ratio of Plat 40 is 1:1 by weight or volume. A graduated measuring cup with an accuracy to the nearest ounce is recommended. Measure side A and side B in separate containers, then combine and mix thoroughly.

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) for at least 2 minutes. 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 mixture slowly into one corner of your mold box and allow it to flow slowly and naturally around your master. This process allows the mixture to roll over your master, pushing away air that may be trapped underneath. Avoid pouring the mixture directly over or onto your master. Do NOT scrape out the last of the mixture onto your project as it could contaminate your project, leading to curing issues.

Step 4: If your mold has undercuts, pour enough material into the mold to fill it halfway. Tilt and rotate the mold in the opposite direction of the undercut to allow for air to escape. 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.

Step 5: If you plan to degas/vacuum, be sure to use a container that is approximately 2-3 times the liquid amount of Plat 40 you will mix. This will allow it to expand in the container without overflowing into your vacuum chamber. Allow it to rise and collapse under full vacuum to ensure you've removed all air introduced during the mixing process.

CLEAN UP & DISPOSAL

Mold life expectancy is a variable of many different factors including but not limited to the type of resin being used in the mold, the length of time the resin is in the mold, the exotherm of the resin, cycle times, the design of the part, the intricacies of the detail, the force needed to demold, etc. Even with all of these factors, there are some things you can do to get the most life out of your molds. In no order, here are some popular ways to extend the life of your molds:

- Use a silicone-safe mold release
- Avoid leaving castings in the molds any longer than needed.
- Allow molds time to cool from peak resin exotherms before pouring the next part.
- Use Silicone Oil to condition molds whenever you stop production for a day or two as well as condition molds with Silicone Oil before storing for periods of time.
- Integrate a bake-out process of 400-degrees for 2-hours and allow to cool back down before running more parts every 25% of the expected mold life (this process will draw silicone oil back to the surface of your mold rejuvenating what has been lost or depleted from the casting process).

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.

- Wear gloves
- Safety glasses
- 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

Part A: Keep out of reach of children. 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.

Part B: 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. 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 CURE REACTION IS EXOTHERMIC. Do not apply in thicknesses greater than the recommended maximum application thickness for the product.

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DISCLAIMER: The information contained herein is considered accurate; however, Alumilite makes no warranty regarding its accuracy. The user must determine the suitability of the product for the intended use and accepts all risk and liability associated with that use.