DESCRIPTION: TinSil® 70-Series Silicone Rubbers are two-component, room temperature curing mold rubbers. TinSil silicone rubbers are condensation-cure, tin-catalyzed systems that cure to flexible rubbers. TinSil molds have high tear strength, excellent chemical resistance, good release properties and resistance to high temperatures. These molds are a great choice for casting polyesters, epoxy and polyurethane resins, polyurethane foams, plaster, waxes and many other materials.

Select the appropriate rubber for your application:

- **TinSil® 70-11 & TinSil® Gel-10** are soft and, therefore, best for delicate castings. TinSil Gel-10 is translucent and especially useful for animatronics and special effects.
- **TinSil® 70-20 & TinSil® 70-25** are popular and versatile, mid-range hardness, silicone rubbers.
- **TinSil® Brush/Spray 25** is brushable or sprayable and can be applied by hand or sprayed with a low-cost PlasPak spray gun or more sophisticated 1A:10B mix ratio spray equipment. This product is great for making large blanket molds.
- **TinSil® 70-60** is stable at higher temperatures making it suitable for casting low melting metals. TinSil 70-60 has limited tear strength because of its hardness.

MODEL PREPARATION: Porous models must be sealed to prevent the rubber from penetrating the surface. Seal porous models (e.g., wood or plaster) with wax, petroleum jelly, PVA, lacquer or paint to prevent penetration of the rubber into the pores of the material. Do not use shellac as a sealer when working with TinSil silicone rubbers, as inhibition can occur. Some surfaces (e.g., metals and glass) that contact the liquid rubber should be coated lightly with a release agent, like Pol-Ease® 2300 Release Agent. Pol-Ease 2350 is both a sealant and release agent and can be used to prevent rubber from penetrating the surface. Pol-Ease 2500 is an aerosol spray and does not need to dry before casting. TinSil rubbers take longer to cure than silicone rubbers but can be used in TinSil molds. However, it is recommended to apply a barrier coat to molds before casting, including Pol-Ease® 2300 or 2500 Release Agent to molds before casting epoxy, polyurethane or polyester rubbers. TinSil products release alcohol while curing and can inhibit the surface of the mold. For longer mold life, however, apply a barrier coat, or Pol-Ease® FastCat Accelerator on the surface of the mold. The mold can be stored for up to six months. No release agent is necessary for casting most materials in TinSil molds. For longer mold life, however, apply a barrier coat, or Pol-Ease® 2300 or 2500 Release Agent to molds before casting epoxy, polyurethane or polyester rubbers. TinSil molds can be stored, but as with most tin-catalyzed silicone rubbers, molds may eventually deteriorate and lose their elasticity. Molds made with excess TinSil® FastCat Accelerator may degrade from aging faster than silicone rubbers cured with less accelerator. TinSil products release alcohol while curing and can inhibit the surface of some casting materials, including Polytek Poly-Optic® 14-Series clear casting resins and polyurethane rubbers. This is especially the case in new tin-cured molds. Before casting these materials in a TinSil mold, be sure that all alcohol has evaporated. Exposure for 24 hours to a warm location in open air is often adequate, but the mold can be baked for four hours at 212°F (100°C) to speed curing thoroughly, scraping sides and bottom of the container.

Pour the rubber as soon as possible after mixing/vacuuming for best flow and air bubble release.

If reinforcement of the rubber is needed (e.g., thin blanket molds), place open mesh nylon, dacron cloth, or TieTex® Fabric into the uncured rubber. Be sure that the fabric is not too close to the mold surface or the weave of the cloth may show through to the face of the mold.

At room temperature (~77°F), TinSil 70-Series rubbers cure to full hardness in the specified demold time. At higher temperatures, they cure faster. At lower temperatures, more time may be needed to reach full hardness. Curing below 60°F is not recommended.

USING THE MOLD: No release agent is necessary for casting most materials in TinSil molds. For longer mold life, however, apply a barrier coat, or Pol-Ease 2300 or 2500 Release Agent to molds before casting epoxy, polyurethane or polyester rubbers. TinSil molds can be stored, but as with most tin-catalyzed silicones, molds may eventually deteriorate and lose their elasticity. Molds made with excess TinSil® FastCat Accelerator may degrade from aging faster than silicone rubbers cured with less accelerator.

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ACCELERATING THE CURE: Use TinSil® FastCat Accelerator to accelerate cure and shorten demold time. When using FastCat, the working time is shorter as well, so avoid over-accelerating. FastCat can be added in a range of 1% to 4% of Part B. Add FastCat to Part B prior to mixing with Part A. When using TinSil® 70-25, for instance, adding 2% FastCat will result in a ~15-minute pour time and ~4-hour demold time. Adding 3% FastCat will result in a ~10-minute pour time and a ~3-hour demold time. Adding 4% FastCat will result in a ~5-minute pour time and ~2-hour demold time. Experiment with a small mix first to determine the best amount of FastCat to use. Use of FastCat can shorten the library life of cured TinSil rubber and also increase shrinkage.

THICKENING FOR BRUSH-ON: TinSil 70-Series rubbers can be thickened with TinThix liquid thickener or with Fumed Silica for brushing on a blanket mold. Blanket molds can be reinforced by placing stretchy, open mesh nylon or dacron cloth into the uncured rubber. The fabric should not be too close to the mold surface or the weave of the cloth may show through to the face of the mold.

When brushing on several layers of silicones, wait for the first layer to “gel” (i.e., not fully cured, but when the rubber has cured enough that application of a subsequent layer will not disturb the previous layer) before applying the subsequent layer. Delamination can occur when too much time has passed in between layers; do not allow the layer to fully cure before applying the subsequent layer. Refer to the table below for estimated maximum elapsed time between application of layers; do not allow the layer to fully cure before applying the next layer. Alcohol evaporation. Do not cast platinum-cured silicone rubbers (e.g., PlatSil® 71- & 73-Series) in tin-cured silicone molds; they will not cure properly.

<table>
<thead>
<tr>
<th></th>
<th>TinSil® Product</th>
<th>Gel-10 &amp; 70-11</th>
<th>70-20</th>
<th>70-25</th>
<th>Brush/Spray 25</th>
<th>70-60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Time Between Layers</td>
<td>2 hr</td>
<td>3 hr</td>
<td>3 hr</td>
<td>1.5 hr</td>
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Silicone Color Pigments can be used to vary the color of brushed layers to help ensure uniform coverage.

THINNING AND SOFTENING WITH SILICONE FLUID: Low-viscosity 50 cSt Silicone Fluid can be added to the mixed liquid rubber to thin the mix, but add sparingly since fluid addition results in some loss of strength, hardness and cure speed. If more than 10% fluid is added to the mix, then fluid may exude from the cured rubber. A 10% addition to TinSil 70-25 will reduce hardness to approximately Shore A20.

BARRIER COAT: A barrier coat is a fast-drying, lacquer-like primer, such as spray paint, that is sprayed into a silicone mold and allowed to dry prior to pouring liquid plastic or foam into the mold. Upon removing the cured plastic or foam casting from the mold, the barrier coat comes out on the casting resulting in a primed part. Using a barrier coat can extend mold life.

SHELF LIFE: For best results, store products in unopened containers at room temperature (60-90°F). Use products within six months. Tightly reseal containers after use.

CLEAN UP: Tools should be wiped clean before the rubber cures. Denatured alcohol is a good cleaning solvent, but it must be handled with extreme caution owing to its flammability and health hazards.

SAFETY: Before use, read product labels and Safety Data Sheets. Follow safety precautions and directions. Contact with uncured products may cause severe eye and skin irritation. Avoid contact. If skin contact occurs, remove by wiping with paper towels, then wash with soap and water. In case of eye contact, flush with water for 15 minutes and call a physician. Use with adequate ventilation. Do not use TinSil products where food or body contact may occur.

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