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## **AeroMarine 125 Silicone Moldmaking Rubber**

### **Product Description**

AeroMarine 25 Silicone Moldmaking Rubber is a two component, room temperature condensation cure silicone material. The cured rubber has excellent mechanical properties and good shelf-life stability. This material is an excellent choice for moldmaking of intricate patterns, skin molding and applications where medium durometer, dimensional stability and extremely tough rubber are required.

The key reason to use this product is its simple one to one by volume mix ratio. In a very few cases this product is inhibited by sulphur based clay or latex products. This can be prevented by coating the master with clear acrylic spray. As in all similar applications, a small test to determine the suitability of this product for a specific application is recommended.

### **Key Features**

- Simple one to one mix ratio
- Low viscosity
- Fast demold time
- Excellent dimensional stability

### **Main Applications**

- Molds for large and small statues
- Molds for polyester, polyurethane and epoxy resin castings
- Molds for technical articles and prototypes
- Molds for furniture and picture frame replication
- Molds for candles and soap

### **Typical Properties**

<b>Uncured properties</b>	<b>"A" component</b>	<b>"B" component</b>
Appearance	Green	Blue
Viscosity, cps	4000	4000
<b>Catalyzed properties</b>		
Specific gravity	1.34	
Pot life	≈15 minutes	
Cure time	75 minutes	
<b>Typical cured properties</b>		
Durometer	25	
Tensile Strength, psi	>240	
Elongation, %	>250	
Tear B, pli	~40	
Linear shrinkage	<0.3	
Useful Temperature Range	-50F to 500F	

### **Cure Characteristics**

The curing process begins as soon as the catalyst is mixed with the base. Under normal temperature(25C) and humidity(50% RH) conditions, the material will cure as described in the data above. Any large change in temperature(+/-5C) or humidity(>60-70%) may alter the cure profile of the material. In addition, if the product is to be used with

aggressive resins such as high styrene polyester resins, it is recommended that the rubber be allowed to cure for 24 hours.

## Silicone RTV Rubber Mold Making 101

Making a mold can be very simple or it can be an art. It all depends largely on the intricacy of your part.

If you have never made a silicone mold before, it would be best to make a small mold for practice before making a mold of a complicated part. The good news is that silicone will not hurt your original.

You will need mixing containers, stirring sticks and probably a mold box into which to place your pattern while making your mold. Depending on the size of the pattern, 1/2" of silicone moldmaking rubber is the minimum thickness necessary for your mold. Making it too thick will reduce the flexibility of the mold- too thin will reduce the resistance to tearing.

There are 4 basic types of molds:

1. BLOCK mold, one piece. The part usually has no negative draft or undercuts.
2. BLOCK mold, multiple piece. The mold must be taken apart to remove casing.
3. GLOVE mold, brushed onto the pattern. Usually peeled off the casting.
4. GLOVE mold, made by casting RTV into a thin layer between pattern and a backup layer.

The **BLOCK mold, one piece**, is often the easiest mold to make. The part must be mounted in a container so that the silicone can be poured around it. For a simple part, this could be just a plastic cup, a metal or wood box, or a Tupperware type container. You might need to fabricate a box to prevent wasting too much silicone RTV. A wooden box is ok, just remember to seal it if it is porous. You can also make a plastic box out of acrylic or Plexiglas.

The **BLOCK mold, multiple piece**, can be made in the same way as the one piece mold. Just cut the mold after it has cured to get the pattern out. Then use rubber bands to keep the two halves of the mold together. Instead of cutting the block mold apart, you can design it to be taken apart. One way is to partly fill the container with the silicone mold making rubber, let it cure, spread petroleum jelly as a release, then finish pouring the mold. When it has cured, you can take the mold apart.

The **GLOVE mold, brushed onto the pattern**, requires the use of our thixotropic catalyst. This is so that the silicone moldmaking rubber doesn't run off the surface of the pattern. It also builds up much thicker than the regular catalyst. This type mold is widely used in restoration of architectural designs on vintage buildings. The silicone rubber is brushed onto the surface, allowed to cure, then removed. Back in the shop, it is then supported and used as a mold to cast additional parts.

This same technique can be used to make molds of rocks and sometimes even trees for landscaping purposes. It can also be used to make molds for small gift items as well.

The **CAST GLOVE mold** is made by making a void around the pattern in a consistent thickness. This is usually done by putting a layer of modeling clay around the pattern, then putting a hard shell around the clay. The shell can be made of fiberglass or plaster. After the shell has cured, the clay is removed. The void left by the clay is filled with silicone.

### Mold Release

Generally, silicone RTV mold making rubber does not stick to anything, and nothing will stick to it. The exception is that it will stick to itself and other silicones, and vice-versa. If you need to release silicone from itself, a thin film of petroleum jelly will provide a good release agent.

Be aware that silicone RTV mold making rubber may soak into a porous surface and lock in place. This is often the case when making a mold from a wood pattern. To prevent sticking, seal the wood so the silicone can't soak into it. Krylon Acrylic spray is my favorite. It is widely available and is compatible with just about any substrate or silicone rubber, and silicone doesn't stick to it. Petroleum jelly usually works well, also.

### Mixing

Mix the silicone resin at a ratio of 100 parts by weight to 10 parts catalyst. A gram scale is best, but a postage scale may work. Mix thoroughly- since my silicone resin is white and the catalyst is purple, it is easy

to tell when it is mixed well. Be careful not to whip air into the mixture by being too vigorous or using a high speed mechanical mixer.

If you have further questions about making your mold, please feel free to give me a call at Toll-free (877)342-8860.

I also sell several accessory products for my silicones:

- Accelerators to speed cure

- Colorants for custom colors

- Extra catalyst

- Thinner to lower the viscosity of silicone RTV

- Thixotropic catalyst for brushing onto vertical surfaces

- Food grade silicones

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