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RTV-2 Silicones Since 1974

P-Series RTV-2 Silicone Rubber

General Information

Description

P-series RTV-2 silicone rubbers are two component addition reaction, platinum catalyzed systems that cure at room temperature. The systems are designed to produce a variety of materials with easy release properties, negligible shrinkage and a wide range of mechanical properties. The catalyzed rubbers offer good flow characteristics, long working times and the advantage that the cure rate can be accelerated with heat. These materials offer a wide service temperature range, have excellent chemical resistance, and will not undergo reversion. The materials will cure evenly in any thickness, producing a mold with excellent detail reproduction and minimal shrinkage, allowing the mold maker to hold exact tolerances.

The **P-series** rubbers may exhibit a slight amount of thickening during storage. This thickening is reversible with simple shear, such as mixing with a spatula or mechanical mixer. If the normal consistency of the rubber is too thick for a specific application, additions of up to 10% **GI-Thinner** can be made which reduces the viscosity to allow flow into very intricate molds. The addition of **GI-Thinner** will slightly reduce the physical properties.

Mixing Instructions

The **P-series** rubbers are mixed 100 parts of Base to 10 parts of Activator by weight. *Deviations from this ratio will cause changes in the physical properties.* Choose a container with a volume that is 3-4 times greater than that of the rubber. Weigh the components carefully and mix thoroughly. After the color is evenly mixed into the Base, scrape the sides and bottom of the container to insure there is no unmixed portion. Place the container in a vacuum chamber and deair at 28-29 inches of mercury vacuum until the mass of rubber rises and then collapses. Continue to deair for an additional 2-3 minutes. Carefully pour the mixed and deaired rubber over the released master.

Curing

At normal room temperatures (70-75° F) the **P-series** rubbers will cure in 16-24 hours. Heat can be used to dramatically accelerate the cure rate. Care must be taken to ensure that the master doesn't gas or give off vapors at the elevated temperature used, since this can cause distortion of the mold surface. Some wood products release moisture and gas at relatively low temperatures. Typical cure times for a ½ inch thick sample are listed below:

Temperature:	70°F	125°F	150°F	200°F	250°F	300°F
Typical Cure Time:	16-24 hrs	1½ hrs	45 mins	25 mins	15 mins	10 mins

The materials have long room temperature working times, but the application of heat will cause this to shorten. The cure rates can be accelerated at room temperature using **Pt Accelerator**. Both heat accelerated cures and **Pt Accelerator** will cause a slight degree of shrinkage and a slight decrease in the physical properties.

Cure Sensitivity

P-series RTV rubbers may have their cure inhibited at the interface between the mold and the master by materials containing tins, sulfurs or amines. Models that have previously been in contact with tin catalyzed RTV silicone (the **GI-series**) may cause inhibition. Inhibition can be prevented by thoroughly cleaning the model with Naptha or Methylene Chloride. Check the area by brushing on a small amount of catalyzed **P-series** rubber. After 24 hours, this film must be cured and non-sticky. In the event that the inhibition still exists, the model should be cleaned again and a thin film of acrylic or nitrocellulose lacquer applied to seal the surface. This should serve as a barrier coat and allow a completely cured mold to be prepared. *Common mold making items such as super glue, clays, tapes, latex gloves, etc. have all been found to cause inhibition. In all cases a test should be performed to determine compatibility.*

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