



Product Data

## PROVISIONAL DATA SHEET

# RP 134 SI

## HIGH TEAR STRENGTH MOLD MAKING SILICONE SYSTEM

### SHORE A 50±5

**DESCRIPTION:** RP 134 SI is a high tear strength, room temperature curing silicone rubber. It offers excellent mold life, and it may be heat cured for faster turn around. RP 134 SI has a convenient 100:10 mix ratio by weight and the resin and hardener are color-coded to ensure complete mixing. Excellent surface reproduction, and ease of release are two additional features.

RP 134 SI should be used where long mold life is required. Mold durability will still be dependent upon the materials cast into RP 134 SI. Epoxies, polyurethanes and polyesters are particularly prone to degrade the surface of some silicone molds. RP 134 SI will resist these materials well.

RP 134 SI is addition curing. It will not depolymerize when heated in confined spaces as do many condensation curing silicones. As with all silicones, RP 134 SI generates little exotherm as it cures. It also exhibits low shrinkage and little stress on components as it cures. RP 134 SI's cure may be accelerated with elevated temperature.

**APPLICATIONS:** flexible molds for duplicating thermosetting plastics such as epoxy, polyurethane, polyureas and polyesters.

### PROPORTIONING & MIXING INSTRUCTIONS:

Reaction Ratio:            100 Resin to 10 Hardener by weight  
                                      100 Resin to 13 Hardener by volume

RP 134 SI resin and hardener both can settle slightly in storage. Each should be stirred until it is homogeneous, prior to mixing with other component.

RP 134 SI can be proportioned by weight or volume. These ratios are stoichiometrically calculated and should be closely followed. Automated meter-mix, dispensing equipment may be used for high volume production.

When mixing small amounts of RP 134 SI, it is best to use a balance and disposable containers. The containers should be large enough to hold both resin and hardener and still have ample room for mixing. After allowing for the weight of the container, the correct amount of resin is added to the container. The scale is then set for the total weight of both resin and hardener, and the hardener is added slowly until the total weight is reached.

To ensure thorough mixing, periodic scraping of the sides and bottom of the container is necessary. The silicone should be stirred until a uniform color is observed. Even small amounts of improperly mixed material can cause soft spots or irregular curing.

**DEAIRING & EVACUATION:** Unless a closed-chamber, mechanical mixer is to be used, air will be introduced into the silicone system either during premixing or when catalyzing the mixture. In some applications this air may become entrapped on the face of the cast silicone. Vacuuming the silicone batch, prior to casting it may be helpful to obtain a void-free surface.

Should vacuuming prove to be necessary for the application, the mixed silicone should be deaired in a container large enough to allow for expansion from two to five times the original volume.

A vacuum of 2 mm of Hg for two to five minutes is generally adequate for small (one quart or less) batches. Larger batches may require longer vacuuming, lower pressures, or introduction of the silicone into the chamber in thin streams. Once the silicone has been adequately deaired, the vacuum should be slowly released.

If vacuum equipment is not available, pour RP 134 SI in a thin stream from a three to six inch height to break air bubbles as they pass over the edge of the container. Pour slowly to minimize re-entrapment of air as the RP 134 SI flows over the pattern.

After a thin film covers the pattern, trapped air bubbles may be broken by positive air flow or by brushing the surface with a spatula. The balance of the mold may then be cast.

**TYPICAL PROPERTIES:**

Property	ASTM Test Method	Test Values <sup>1</sup>
Gel Time (100 g)	D-2471	200 min.
Color Resin Hardener Mixed	Visual	Off-White Green Light Green
Viscosity, Mixed	D-2393	90,000 cP

**TYPICAL CURED PROPERTIES:**

Property	ASTM Test Method	Test Values <sup>2</sup>
Hardness (Shore A)	D-2240	47
Ultimate Tensile Strength (psi)	D-412	590
Ultimate Tensile Elongation (psi)	D-412	180
Ultimate Tear Strength (ppi)	D-624 Die B	70

<sup>1</sup>Tested @ 77°F (25°C)

<sup>2</sup>Cure Schedule – 7 days @ 77°F (25°C), tested @ 77°F

**NOTE:** Typical Properties – These physical properties are reported as typical test values obtained by our test laboratory. If assistance is needed in establishing product specifications, please consult with our Quality Control Department.

**CURING INSTRUCTIONS:** Although room temperature silicones will normally set up to a rigid, demoldable state within 24 hours at room temperature (75°F ± 5°F), these systems reach their full cure after seven days at room temperature. A full cure can be accelerated by applying heat after the part has set for 24 hours at room temperature. We recommend a postcure of 212°F for a minimum of two hours. (Add to this adequate time to bring the part to the postcure temperature.) After cure, the part should be cooled at a slow rate so as not to shock the part thermally. For best results, parts should be supported during postcure.

Uniform heat distribution is also required during postcure; concentrated heat, such as that directed from a lamp, can cause warp. An elevated temperature cure will slightly increase the shrinkage compared to a room temperature cure.

**CURE INHIBITION:** As with all addition curing silicones, avoid casting RP 134 SI against surfaces bearing amines, sulfur or tin salts. Materials such as wood or natural rubber may contain these cure inhibiting ingredients and they can leave the RP 134 SI soft and uncured. If in doubt, apply a test patch of catalyzed RP 134 SI to the surface and allow it to set for the normal cure time.

## **STORAGE/HANDLING INFORMATION:**

### **RP 134 SI**

Store at 60-100°F in a dry place. After use tightly reseal.

Work in a well ventilated area and use clean, dry tools for mixing and applying. For two component system, combine the resin and hardener according to mix ratio. Mix together thoroughly and use immediately after mixing. Material temperature should not be below 65°F (18°C) when mixing.

Stir well before use. This material will separate.

**SHELF LIFE:** RP 134 SI resin and hardener have shelf lives of approximately six months at room temperature (25°C) in closed containers. The fillers used in RP 134 SI resin and hardener will settle with time. Therefore, the containers should be turned upside down periodically to minimize settling.

**PACKAGING:** This product is available in the following package size(s):

Small Units = Pail Resin (10#) with appropriate Hardener (1#) Total 11#  
Pail Units = Pail Resin (50#) with appropriate Hardener (5#) Total 55#  
Drums are available on a special order basis.

Please call Customer Service (800-367-8793) for price and availability.

**SAFETY/HANDLING PRECAUTIONS:** Do not use or handle this product until the Material Safety Data Sheet has been read and understood.

### **RP 134 SI Resin**

**CAUTION!** In accord with good industrial practice, handle with due care. Do not breathe dust. Avoid contact with eyes, skin, and clothing. Wash thoroughly after handling.

**NOTICE!** Contains crystalline silica. Breathing dust may cause cancer and delayed lung injury.

### **RP 134 SI Hardener**

**WARNING!** Causes skin and eye irritation. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.

**FIRST AID:** In case of contact with:

**Skin:** Immediately wash with soap and water. Remove contaminated clothing and launder before reuse. Destroy contaminated shoes.

**Eyes:** Immediately flush with water for at least 15 minutes. Call a physician.

**Ingestion:** If conscious, give plenty of water to drink. Do not induce vomiting. Call a physician.

**Inhalation:** Remove to fresh air. Administer oxygen or artificial respiration if necessary. Call a physician.

**Other:** Referral to physician is recommended if there is any question about the seriousness of any injury.

**PRECAUTIONARY NOTE:** Thermosetting systems generate heat when curing. The amount of heat and the period of time in which heat is released vary significantly between systems. Additionally, ambient or compound temperature, amount of material mixed, and construction and shape of the mold or container can also be factors in the temperature profile of a mixed system. In some cases, the thermosetting reaction can be vigorous, generating heat sufficient to cause decomposition of the system with subsequent liberation of large volumes of acrid smoke.

A good rule of thumb is never mix more material than can be applied during the stated pot life or gel time. Also take care when using materials in applications other than stated on the Product Data Sheet, i.e., a laminating resin for casting.

Please feel welcome to call our Product Information Department or your local Ren representative for instructions before you start your job.

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