



## **ENDURE-SIL 20 RTV SILICONE** (Condensation Curing Silicone - Pink) **TECHNICAL DATASHEET**

Rev: 12/24

### **DESCRIPTION:**

Endure-Sil 20 is a 2-part, tin-catalysed, condensation curing silicone rubber. Endure-Sil 20 has excellent tear resistance and exhibits low linear shrinkage. Endure-Sil 20 will reproduce fine details and is suitable for industrial and artistic applications. Endure-Sil 20 silicone can be used to cast a variety of materials including wax, gypsum-based polymers, low melt alloys, urethane, epoxy and polyester resins. In some cases, a release agent, such as Mikon F57 aerosol wax, should be used to prolong mould life. Endure-Sil 20 can be accelerated with a small percentage of Accelerator to reduce the pot life and cure time. The silicone can be thickened with RTV Thixo silicone thixotropic liquid for brush-on applications.

### **Mixing**

The resin and catalyst components must be measured out accurately using a gram scale. Mix the two components thoroughly, paying attention to the sides and bottom of the container. Do not mix more than can be used within the working time of the system.

**Part by weight (Silicone resin part A: Catalyst Part B) 100:3 at standard speed**

**Part by weight (Silicone resin part A: Catalyst Part B) 100:2 at slower speed**

### **Preparation**

- Use clean, non-contaminated containers for mixing.
- Stir the silicone resin (part A) well before use.
- Stir / shake the catalyst (part B) before use.
- Add 2% to 3% by weight of the catalyst to part A.
- Stir the mixture well with a flat stirrer / stick until well mixed.
- De-air (vacuum degas), if required, in a vacuum chamber for 2-3 minutes at full vacuum.
- Pour the desired material in a steady stream from one end of the mould so that the material flows evenly over the pattern. This method will minimize entrapment of air / bubbles.
- Initial cure is reached in 24 hours at room temperature.
- For best results, allow the mould to air cure at ambient temperature (or up to 50°C) for 24 hours before using it.

## **Curing & Post curing**

Allow the mould to cure overnight (24 hrs) at room temperature (23°C) before demoulding. Post curing the mould an additional 4 hours at 65°C will eliminate any residual moisture and alcohol that is a by-product of the condensation curing reaction. The condensate can inhibit the cure of some urethane resins and rubbers. Do not cure rubber if the ambient temperature is less than 18°C.

## **Thickening**

RTV Thixo is made especially for thickening Endure-Sil 20 silicone when making brush-on moulds. Different viscosities can be attained by varying the amount of thixotropic agent, which is added to the mixed silicone and catalyst. Wait for the rubber to become “tacky” before applying additional coats of silicone, with a final mould thickness of at least 1 cm. Once fully cured, additional coats of silicone will not bond to the cured silicone. A support shell is normally required once the rubber has cured overnight.

After mixing the silicone and catalyst, add RTV Thixo at 5-10% by weight of the mixed silicone + catalyst mass.

For 100g silicone + 3g catalyst (103g) add 5g (5%) to 10g (10%) RTV Thixo

For 1kg silicone + 30g catalyst (1.03kg), add 52 grams (5%) to 103 grams (10%) RTV Thixo

## **Accelerating Cure**

The Accelerator can reduce the pot life and cure time of condensation cure silicones, such as Endure-Sil 20. Mix the accelerator with the regular Part B catalyst first and then add to the silicone. Accelerator is VERY reactive and using more than 0.1% will result in reduced mechanical properties and tear strength of the mould. Due to the small quantities involved it is easier to measure the catalyst in millilitres using a small syringe (1g is approximately 1ml).

## **Properties**

<b>Colour</b>	<b>Pink</b>
<b>Cure Rubber Shore A Hardness</b>	20 ± 2
<b>Liquid Viscosity (Mpa.s)</b>	26,800
<b>Cured Rubber Tear strength (kN/mm)</b>	17.1
<b>Cured Rubber Tensile strength (MPa)</b>	3.1
<b>Cured Rubber Elongation %</b>	624
<b>Working time at 23° C (minutes)</b>	30-40
<b>Curing time at 23° C (hours)</b>	24

## **STORAGE RECOMMENDATIONS:**

The silicone resin and catalyst should be kept in securely closed containers during transport and storage. Any accidental spillage should be soaked up with absorbent material (sand, sawdust etc.) Suitable long-term storage conditions will result in a shelf life of 6 months. Storage should be in a cool dry place out of direct sunlight. The storage temperature should be maintained between 10°C and 25°C, as higher temperatures will thicken the material and reduce the shelf life. Before storing, moulds should be cleaned with a soap solution and wiped fully dry. Two or more-part moulds should be stored assembled. Moulds should be stored on a level surface in a cool, dry environment.

## **HEALTH AND SAFETY ADVICE:**

Use in a properly ventilated area. Wear safety glasses, long sleeves and nitrile rubber gloves to minimize contamination risk. Wear nitrile gloves only (such as Tuff Gloves), as latex gloves may inhibit the cure of the rubber.

**All statements, technical information and recommendations, including storage, contained in this publication are based on tests believed to be reliable, but their accuracy and/or completeness are not guaranteed. The user shall determine the suitability of this particular purpose and shall assume all risk and liability in connection herewith. The information contained herein is under constant review and liable to be modified from time to time.**