

Bluesil™ V 340 ~ Multi Catalyst System

October 2017

Addition Cure Silicone Elastomer

Description **Bluesil™ V-340** is a two component, addition cure, room temperature or heat accelerated cure silicone rubber compound. It is designed as a **variable hardness rubber** with high strength properties, long library life, excellent detail reproduction, excellent release characteristics, and improved resistance to inhibition. The specific hardness is dependent on which curing agent is used. **Bluesil™ V-340** is an excellent choice for pattern shop, model shop, and Stereolithography service bureau mold making and tooling applications.

- Applications**
- Conventional production and prototype molds
 - Finished rubber parts
 - Stereolithography (SLA) molds
 - Casting Architectural moldings

Typical Properties

TYPICAL PROPERTIES – AS SUPPLIED

Part A – Base Component

- **Color**
Beige
- **Consistency**
Pourable
- **Viscosity, Cp. (mPa.s)**
45,000

Part B – Curing Agent

- **Color** CA-35 Blue
CA-45 Blue
CA-55 Black

TYPICAL CATALYZED PROPERTIES

Mixed at 24°C (75°F) and 50% R.H.

- **Mixed Ratio, A:B** (Parts by weight) 10:1
- **Viscosity, cP.(mPa.s)** 25,000
- **Pot Life⁽¹⁾ min.** 100
- **Temperature Range, °C (°F)** -54 to 204 (-65 to 400)
- **Coefficient of Thermal Expansion, in/in/°C** 2.5 x 10⁴

TYPICAL PROPERTIES OF CURED RUBBER, Cured 24 hours at 24°C (75°F) and 50% R.H.

| Property | Test Method | CA-35 | CA-45 | CA-55 |
|--|------------------|------------|-----------|-----------|
| • Mixed Ratio, A:B | | 10:1 | 10:1 | 10:1 |
| • Color | | Blue | Blue | Gray |
| • Specific Gravity | | 1.33 | 1.33 | 1.33 |
| • Hardness (Shore A) | ASTM D2240 | 36 | 45 | 53 |
| • Tensile Strength, psi (n/mm ²) | ASTM D412 | 870 (6) | 775 (5.3) | 650 (4.4) |
| • Elongation (%) | ASTM D412 | 500 | 350 | 300 |
| • Tear Resistance, ppi (n/mm) | ASTM D624, Die B | 180 (31.6) | 125 (22) | 85 (14.9) |

NOTE: Cure time may be accelerated by oven curing at 49-65°C (120-150°F) for 2-3 hours. HEAT CURING MAY EFFECT PHYSICAL PROPERTIES

(1) Time at which material gels.

TYPICAL ELECTRICAL PROPERTIES

| Property | Test Method | Value |
|---|-------------|----------------------|
| • Dielectric Constant, 1kHz | ASTM D150 | 3.4 |
| • Dissipation Factor, 1kHz | ASTM D 150 | 0.007 |
| • Dielectric Strength, 75 mil V/mil | ASTM D149 | 550 |
| • Volume Resistivity, ohm-cm | ASTM D257 | 1 X 10 ¹⁵ |



Bluesil™ V 340 ~ Multi Catalyst System

Processing

MIXING GUIDELINES FOR Bluesil™ PLATINUM CURE MOLDMAKING SYSTEMS

1. Stir the base (Part A) well before use (except when machine dispensing).
2. Shake the curing agent container (Part B) well before use.
3. Weigh the desired amount of base into a clean mixing container. Tip the container and roll the base all the way around the side wall up to two inches from the top. This will prevent the curing agent from being absorbed into the container. Do not fill the container more than 1/3 full to allow sufficient room for expansion during the deaeration procedure.
4. Weigh the proper amount of curing agent into the container.
5. Mix the base and curing agent together by stirring with a stiff, flat ended metal spatula until a uniform color is obtained. Scrape the container walls and bottom to assure a thorough mix. If mechanical mixer is used, do not exceed 150 rpm.
6. Place the container into a vacuum chamber and evacuate the entrapped air from the mixture using a vacuum pump capable of achieving 29 inches of vacuum. The mixture will rise, crest and then collapse in the container. Interruption (bumping) of the vacuum may be necessary to prevent overflowing the container. Keep the mixture under a full vacuum for 5-10 minutes after the material has receded in the container.
7. Bleed air slowly into the vacuum chamber. When the chamber is at atmospheric equilibrium, remove the cover plate and take out the container.
8. Pour the deaired material slowly in a steady stream from one end of the mold box so that the material flows evenly over the pattern. This will minimize the entrapment of air bubbles under the flowing rubber. A "print" coat may be poured first over the pattern, which will also reduce the possibility of entrapping air in the cured rubber. A mold release (petroleum jelly) may be applied on the pattern first to improve release if desired.
9. CURING:
 - a. ROOM TEMPERATURE CURING SYSTEMS: Allow the rubber to cure for 16-24 hours at 75°F (24°C) before removing the cured rubber from the pattern. For best results, allow the mold to air cure an additional 24 hours after the initial overnight cure before putting mold into production. Room temperature curing assures the lowest possible shrinkage. If cure acceleration is desired, mild heat may be employed. To minimize shrinkage, cure rubber at 100-130°F (38-54°C) for 4-6 hours. Higher temperatures may cause excessive shrinkage to occur.
 - b. HEAT CURING SYSTEMS: ELKEM SILICONES heat-curing systems are primarily used for roll and transfer print pad applications where long work life and pot life are needed. FOLLOW THE SUGGESTED PRODUCT CURE SCHEDULE GUIDE LISTED ON FRONT OF SPECIFIC PRODUCT INFORMATION SHEET.
10. For bonding to wood or metals, use **Bluesil™ V-04 PRIMER**. Follow recommendations on the **Bluesil™ V-04 PRIMER** technical data sheet for best results.

**MIXED PROCESSING PROPERTIES WILL
BE AFFECTED BY TEMPERATURE VARIATIONS**

- A decrease in work life and pot life may be expected to occur at temperatures exceeding 75°F (24°C). Room temperature curing moldmaking rubbers are particularly sensitive to higher temperatures. Refrigeration of the base (Part A) prior to use in hot environments has shown to improve the handling properties of these materials.
- Lower temperatures will increase the work life and pot life of this material. Cure temperatures below 68°F (20°C) are not recommended, and have been found to cause a reduction in final cure hardness and physical properties.
- This system contains a platinum catalyst, which may be inhibited by materials found in some organic polymer systems, chlorinated solvents, and some substrates. Especially troublesome materials are: amine cured epoxies, sulfur cured organic rubber systems such as natural rubber, polysulfide rubber, latex rubber and adhesives, sulfur containing modeling clays, PVC coated surfaces, and tin catalyzed silicone RTV rubbers. A patch test to determine compatibility is recommended when doubt exists.

Storage and shelf life

Bluesil™ V-340 can be stored up to 730 days. Refer to packaging for more details on storage and shelf life.





Safety

Please consult with the Safety Data Sheet of **Bluesil™ V-340**.

Packaging

Bluesil™ V-340 is available in 20kh, 200kg, and 1000kg containers.

Bluesil™ is a registered Trademark of **Elkem SILICONES**

|  EUROPE |  NORTH AMERICA |  LATIN AMERICA |  ASIA PACIFIC |
|--|--|---|---|
| <p><i>Elkem Silicones France</i> 21 Avenue Georges Pompidou F69486 Lyon Cedex 03 FRANCE Tel. (33) 4 72 13 19 00 Fax (33) 4 72 13 19 88</p> | <p><i>Elkem Silicones USA</i> Two Tower Center Boulevard Suite 1601 East Brunswick, NJ 08816-1100 United States Tel. (1) 732 227 2060 Fax (1) 732 249 7000</p> | <p><i>Elkem Silicones Brazil Ltda.</i> Av. Maria Coelho Aguiar, 215 Bloco G - 1º Andar 05804-902 - São Paulo - SP - Brazil Tel. (55) 11 3747 7887 Fax (55) 11 3741 7718</p> | <p><i>Elkem Silicones Hong Kong</i> Trading Co. Ltd. Unit C, 18/F Manulife Tower 169 Electric Road North Point-Hong Kong Tel. (852) 3106 8200 Fax (852) 2979 0241</p> |

Warning to the users

The information contained in this document is given in good faith based on our current knowledge. It is only an indication and is in no way binding, particularly as regards infringement of or prejudice to third party rights through the use of our products. Elkem SILICONES guarantees that its products comply with its sales specifications. This information must on no account be used as a substitute for necessary prior tests which alone can ensure that a product is suitable for given use. Users are responsible for ensuring compliance with local legislation and for obtaining the necessary certifications and authorizations. Users are requested to check that they are in possession of the latest version of this document and Elkem SILICONES is at their disposal to supply any additional information.