

Bluesil™ RTV 3165 A&B

October 2017

Addition Cure Silicone Elastomer

Description **Bluesil™ RTV 3165** is a two-component, addition cure, room temperature or heat accelerated cure silicone rubber compound. It is designed as a Shore A 65 durometer rubber for use with urethane foams and casting materials for architectural, prototyping, and furniture molding applications.

Bluesil™ RTV 3165 is designed to serve the needs of the prototyper by reproducing intricate details and maintaining tight tolerances.

Applications

- Roller applications

Typical Properties

TYPICAL PROPERTIES – As Applied		TYPICAL CATALYZED PROPERTIES	
Part A - Base Component		Mixed at 24°C (75°F) and 50% R.H.	
• Color	Beige	• Mix Ratio , A:B(Parts by weight)	10:1
• Consistency	Pourable	• Viscosity , cP. (mPa.s)	140,000
• Viscosity , cP. (mPa.s)	185,000		
Part B – Component			
• Color	Translucent		
• Viscosity , cP. (mPa.s)	1,800		
TYPICAL PROPERTIES OF CURED RUBBER, Cured 24 hours at 24°C (75°F) and 50% RH			
<u>Property</u>	<u>Test Method</u>	<u>RTV 3165 A/B</u>	
• Color		Beige	
• Specific Gravity		1.44	
• Work Life , hours ⁽¹⁾		3.25	
• Durometer (Shore A)	ASTM D2240	63	
• Tensile Strength , psi (N/mm ²)	ASTM D412	382	
• Elongation (%)	ASTM D412	167	
• Tear Resistance , ppi (N/mm)	ASTM D624, Die B	59	
• Temperature Range °C (°F)		-54 to 204 (-65 to 400)	
NOTE: Cure may be accelerated by curing at 40-65°C (120-150°F) for 3-4 hours. HEAT CURING MAY INCREASE SHRINKAGE.			
(1) Time required to double initial catalyzed viscosity. (3) 8x8x0.25 in (20.3x20.3x0.64 cm) molded sheet, cured at room temperature			
(2) Time at which material gels.			
NOTE: Cure at elevated temperatures may cause modification of rubber properties and increase shrinkage. Please note: The typical properties listed in this bulletin are not intended for use in preparing specifications for any particular application of Bluesil™ silicone materials. Please contact our Technical Service Department for assistance in writing specifications.			



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Processing

MIXING GUIDELINES FOR BLUESIL™ PLATINUM CURE MOLDMAKING SYSTEMS

1. Stir the base (Part A) well before use (except when machine dispensing).
2. Stir the catalyst 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 catalyst from becoming absorbed into the container. It is recommended that the container be filled to not more than 1/3 the container depth to allow sufficient room for expansion during the deaeration procedure.
4. Weigh the proper amount of catalyst into the container. Mix the base and catalyst together by stirring with a stiff, flat ended metal spatula until a uniform color is obtained. Scrape the container walls and bottom well to insure a thorough mix.
5. 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 mercury 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 full vacuum for 2-3 minutes after the material has receded in the container.
6. Bleed air slowly into the vacuum chamber. When the chamber is at atmospheric equilibrium, remove the cover plate and take out the container.
7. 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 should minimize entrapment of air bubbles under the flowing material. A "print" coat may be poured first over the pattern which will also help reduce the possibility of entrapping air on the pattern and in the cured rubber. A mold release (petroleum jelly) may be applied on the pattern first to improve release.
8. 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.
9. 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

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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™ RTV 3165 when stored in its original unopened packaging, at a temperature of 24°C (75°F), may be stored for 12 months from the date of manufacture. Beyond this date, Elkem Silicones no longer guarantees that the product meets the sales specifications Comply with the storage instructions and expiry date marked on the packaging. Beyond this date, Elkem Silicones no longer guarantees that the product meets the sales specifications.





Safety

Please consult the Safety Data Sheet of **Bluesil™ RTV 3165**.

Packaging

Bluesil™ RTV 3165 is available in 20 kg and 200 kg containers.

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