

Rhodorsil[®] V-340 + FC Catalyst

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Freeman Manufacturing & Supply Co.
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Addition Cure Silicone Elastomer

Description Rhodorsil[®] V-340 + FC Catalyst is a two component, addition reaction, 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. Rhodorsil[®] V-340 + FC Catalyst 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		TYPICAL CATALYZED PROPERTIES	
<u>Part A - Base Component</u>		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)	25,000
• Viscosity , cP. (mPa.s)	45,000	• Pot Life , minutes ⁽¹⁾	40
<u>Part B – Curing Agent</u>		• Temperature Range , °C (°F)	-54 to 204 (-65 to 400)
• Color	CA-35 Purple	• Coefficient of Thermal Expansion , in/in/°C	2.5 x 10 ⁻⁴
	CA-45 Purple		
	CA-55 Black		

TYPICAL PROPERTIES OF CURED RUBBER, cured 24 hours at 25°C (77°F)

Property	Test Method	Value		
		CA-35 FC	CA-45 FC	CA-55 FC
• Mix Ratio , A:B		10:1	10:1	10:1
• Color		Purple	Purple	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

TYPICAL ELECTRICAL PROPERTIES

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

(1) Time at which material gels.

Please note: The typical properties listed in this bulletin are not intended for use in preparing specifications for any particular application of Rhodorsil[®] silicone materials. Please contact our Technical Service Department for assistance in writing specifications.

Instructions for use

1. Stir the base (Part A) well before use (except when machine dispensing).
2. Shake 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

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Instructions for use (cont.)

- 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. Allow the rubber to cure for 16-24 hours at 75±5°F (24°C) before removing the cured rubber mold from the pattern. Heat acceleration is not recommended with this product.
 9. For best results, allow the mold to air cure an additional 24 hours before using it in production. Full cure is achieved in 3-7 days.
 10. For bonding to wood or metals, use Rhodorsil® V-04 primer. Follow recommendations on the Rhodorsil® V-04 technical data sheet for best results.

PROCESSING INFORMATION

CATALYZED PROCESSING PROPERTIES ARE AFFECTED BY TEMPERATURE AND HUMIDITY VARIATION

1. For best results, mix and cure the material at 75°F (24°C) and 50% relative humidity.
2. Higher temperature and humidity will decrease the work life and pot life of the material. The faster cure will also affect the flow properties. Refrigeration of the base prior to use in hot environments has shown to improve the handling properties of this material.
3. Lower temperatures and humidity will increase the work life and pot life of the material. The slower cure will increase the flow time. Cure temperatures below 68°F (20°C) are not recommended and have been found to cause a reduction in final cure hardness and properties.
4. It is important that the catalyst containers are tightly closed after use. Catalyst exposed to air for extended periods of time will hydrolyze (cure). An indication of hydrolysis is a film or crust formation on the surface of the catalyst. The use of hydrolyzed catalyst is not recommended and may cause incomplete cure.

Storage and shelf life

Rhodorsil® V-340 + FC Catalyst when stored in its original unopened packaging, at a temperature of 24°C (75°F), may be stored for 24 months from the date of manufacture. Beyond this date, Bluestar Silicones no longer guarantees that the product meets the sales specifications.

Safety

Please read the container labels for Rhodorsil® V-340 + FC Catalyst or consult the Material Safety Data Sheet (MSDS) before handling for safe use, physical and health hazard information. The curing agent for this material can generate a flammable gas upon contact with acidic, basic, or oxidizing materials. The MSDS is not included with the product packaging, but can be obtained by contacting Bluestar Silicones at 866-474-6342 or consult your Bluestar Silicones representative.

Packaging

Rhodorsil® V-340 + FC Catalyst is available in 20 kg, 200 kg, and 1000 kg containers.

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