PRODUCT INFORMATION
A-RTV-1556 A&B

Description

A-RTV-1556 is a two component, high strength, addition cure, room temperature or heat vulcanized silicone rubber compound. Designed specifically for moldmaking and resin infusion vacuum bag applications, it offers low viscosity, high tear cut resistance, and easy release for long lasting molds. A-RTV-1556 has high temperature and chemical resistance with excellent flexibility, low shrinkage, and excellent detail reproduction which makes it well suited for production and prototyping use with all types of casting resins.

Applications

- Resin infusion reusable vacuum bags
- Stereolithography (SLA) molds
- Conventional production and prototype molds
- Picture frames, mirrors, and furniture molding
- Giftware, furniture, and artistic molding
- Epoxy laminate molding
- Finished rubber parts
- Electronic encapsulation

Typical Properties

AS SUPPLIED		**CATALYZED PROPERTIES**	
PART A - Base Component		**Mixed at 24*c (75*F) and 50% R.H.**	
Color	Translucent	Mixed Ratio, A:B (Parts by weight)	10:1
Consistency	Pourable	Viscosity, cP (mPa.s) (1)	12,000
Viscosity, cP. (mPa.s)[1]	15,000	De-mold Time @ RT	
PART B – Catalyst Component		Cat 1556 B (hrs) 16-24	16-24
Color	Translucent	Cat 1556 B Fat Cure (mins)	30-60
Viscosity, cP. (mPa.s)[1]	10,000		

TYPICAL PROPERTIES OF CURRED RUBBER, Cured 24 hours at 24*C (75*F) and 50%RH			
Property	Test Method	1556 B	1556 B Fast C
Color		Translucent	
Pot life, mins		90	15
Specific Gravity		1:1	
Hardness, (Shore A)	ASTM D2240	30	
Tensile Strength, psi (N/mm^2)	ASTM D412	1035 (7.1)	
Elongation (%)	ASTM D412	660	
Tear Resistance, ppi, (N/mm)	ASTM D624, Die B	130 (23)	
Linear Shrinkage[3] 24 hours 7 Days		<0.1 0.1	
Temperature Range*C (*F)		-55 to 249 (-65 to 400)	
Thermal Expansion. cc/am*C		2×10^{-3}	
Thermal Conductivity, $cal/cm^2 \times sec \times °C/cm$		5.5 x 10-4	

Btu/ft²×hr×°F/in	1.7
W/m*K	0.25

(1) May become slightly thixotropic: this is quickly corrected by agitation.
(2) Time at which material gels
(3) 8x8x0.25 in (20.3x20.3x0.64 cm) molded sheet, cured at room temperature

TYPICAL ELECTRICAL PROPERTIES	
Dielectric Strength, V/mil (k/V/mm)	460 (18.2)
Dielectric Constant, 1kHz	3.0
Dissipation Factor, 1kHz	0.004
Volume Resistivity, ohm x cm	7×10^{14}

Please note: The typical properties listed in this data sheet are not intended for use in preparing specifications for any particular application. Please contact our Technical Service Department for assistance in writing specifications.

Mixing Guidelines

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: Factor II heat-curing systems are primarily used for roll and transfer print pad applications where long work life and pot life are needed.

CURE SCHEDULE: Time required to develop cured properties; 3 days at 24°C (75°F 30 minutes at 100°C (212°F); 2 hours at 65°C (150°F); 15 minutes at 150°C (300°F)

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

When stored in its original unopened packaging, at a temperature of 24°C (75°F), A-RTV 1556 Factor II warrants products for six months from the ship date.

Safety

Please consult the Safety Data Sheet of A-RTV-1556. The curing agent for this material can generate a flammable gas upon contact with acidic, basic, or oxidizing materials. Precautions to avoid contact of this curing agent with these materials should be exercised.

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