

SnapSil™ RTV230 Adhesive

Description

SnapSil* RTV230A/B adhesive is a two-component, room temperature cure silicone adhesive that features a fast tack free time, primerless adhesion to many substrates and greater flexibility in usage and storage.

This condensation cure silicone adhesive is an excellent candidate for industrial assembly applications where a faster cure speed is desired, where heat to cure an adhesive can damage components, or where greater productivity is needed.

Key Features and Typical Benefits

- Fast cure time at room temperature; no heat required to cure
- Fast green strength build
- Excellent primerless adhesion to many substrates
- UL HB rated (file: E36952)
- Designed to offer high levels of productivity
- Easy to dispense; convenient 10:1 mix ratio
- Extended room temperature storage prior to mixing
- No cure inhibition concerns

Typical Physical Properties

UNCURED PROPERTIES	
Cure Chemistry	Alkoxy
Mix Ratio (base to curing agent by volume)	10:1
Color (Final Product)	White
Viscosity (cps)	RTV230A: 700,000
	RTV230B: 95,000

Application Rate at 45 psi, g/min	RTV230A: 250
	RTV230B: 80
CURED PROPERTIES	
Specific Gravity (23 °C), Cured	1.39
Hardness, Shore A Durometer	36
Tensile Strength, psi	250
Elongation, %	280
Green Strength at 15 minutes, psi ⁽¹⁾	20
Green Strength at 30 minutes, psi ⁽¹⁾	40

Processing:	
Work (Pot) Life	5 to 10 minutes
Cure Through Time at 25 °C (77°F) ⁽²⁾	30 minutes
Useful Operating Temperature Range, continuous	-50 °C to 205 °C (-58 °F to 400 °F)
ELECTRICAL PROPERTIES	
Dielectric Strength (75 mils), V/mil	410
Dielectric Constant at 60 Hz	3.75
Dissipation Factor at 60 Hz	0.13
Volume Resistivity, μ -cm	9.3×10^{13}

Typical properties are average data and should not be used as or to develop product specifications

(1) Substrates used were glass and Alclad 2024-T3 aluminum; specimen dimensions 1/2 x 1 x 1/8 (L x W x T)

(2) Full property development can take up to 24 hours

Processing Recommendations

Mixing

SnapSil RTV230A/B adhesive offers a fast work time and automated meter-mix-dispense equipment is recommended to gain optimum productivity. SnapSil RTV230A/B adhesive is thixotropic and as such it is important to avoid the introduction of air during mixing. Suggested techniques to minimize the introduction of air are as follows: if mixing by hand, utilize a centrifugal mixer or if dispensing from a cartridge, utilize a static mixer.

The minimum recommended mix ratio for hand mixing is 10:1 by volume. When hand mixing, select a mixing container 4-5 times larger than the volume of RTV silicone rubber compound to be used. Weigh out the RTV silicone rubber base compound and add the appropriate amount of curing agent. With clean tools, thoroughly mix the RTV base compound and the curing agent, scraping the sides and bottom of the container carefully to produce a homogenous mixture. When using power mixers, avoid excessive speeds, which could entrap large amounts of air or cause overheating of the mixture, resulting in shorter pot life.

De-Aeration

Air entrapped during mixing should be removed to eliminate voids in the cured product. Expose the mixed material to a vacuum of about 29 inches (25 mm) of mercury. The material will expand, crest, and recede to about the original level as the bubbles break. Degassing is usually complete about two minutes after frothing ceases.

Equipment

Pumping and meter-mixing systems for two part silicones are available from a number of manufacturers, most of who will provide a complete integrated system. Contact Momentive Performance Materials for further information.

Curing

SnapSil RTV230A/B adhesive is designed to cure through in 30 minutes with full property development within 24 hours at room temperature (77 °F/25 °C) and 50% relative humidity. This system is sensitive to changes in heat and humidity and therefore variations in cure speed may be seen if one or both variables are changed.

Compatibility

SnapSil RTV230A/B adhesive will cure in contact with most clean and dry surfaces. Compatibility tests should be performed on all materials in contact with the uncured silicone, including painted surfaces.

Surface Preparation

The adhesive performance of any polymer system is highly dependent upon proper

surface preparation. In order to maximize the adhesion of the SnapSil RTV230A/B adhesive, all parts should be as clean and dry as possible prior to the application of the silicone.

Bonding

SnapSil RTV230A/B adhesive offers excellent adhesion characteristics to a wide variety of substrates without the need of a primer. For difficult-to-bond-to substrates, or where more aggressive chemical adhesion is desired, the use of a Momentive Performance Materials primer can be used. For more details on priming and adhesion, please refer to the Momentive Performance Materials product data sheet on silicone primers.

Adhesion Performance

SnapSil RTV230A/B adhesive provides primerless adhesion to a wide variety of substrates. Lap shear testing with the following substrates reveals 100% cohesive failure.

- Glass
- Fiberglass
- Formica
- Cold Rolled Steel
- Stainless Steel
- Galvanized Steel
- Carbon Steel
- Aluminum
 - 2024-T3 Anodized and Alclad
 - 2024-T4 Alclad
 - Mill Finish 3003
 - 3003-H14 Bare
- PVC
- Cylcoloy† MC8100 resin
- Lexan† 141 resin
- Lexan EXL9330 resin
- Noryl† HNA055 resin
- Ultem† 1000 resin
- Valox† 325 resin

- Xenoy† 5220U resin
- Xylex† X8300HP resin

†Cycoloy, Lexan, Noryl, Ultem, Valox, Xenoy and Xylex are trademarks of SABIC-IP or its affiliates.

Additional Adhesion Testing is in progress on other various substrates. Please contact your local Momentive Performance Materials representative for more information.

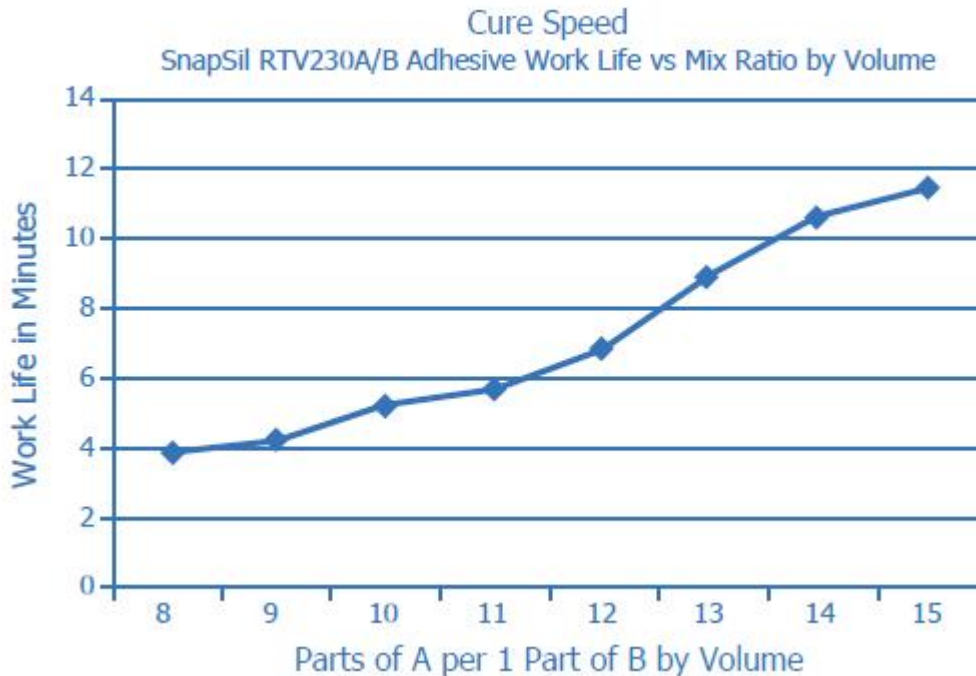
The following chart shows the property build profile of SnapSil RTV230A/B adhesive over time. The adhesion testing was conducted at a 10:1 mix ratio by volume (base to curing agent). The substrates used were glass and Alclad 2024-T3 aluminum. Cure times are typical values, which may be affected by many variables including but not limited to bead size, temperature, relative humidity, specific application and the equipment used.



Note: Test results. Actual results may vary.

Cure Profile

The following chart shows the effect of mix ratio by volume (base to curing agent) on work life for SnapSil RTV230A/B adhesive. Cure times are typical values, which may be affected by many variables including but not limited to bead size, temperature, relative humidity, specific application and the equipment used.



Note: Test results. Actual results may vary.

Patent Status

Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute the permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of the patent.

Product Safety, Handling and Storage

Customers should review the latest Safety Data Sheet (SDS) and label for product safety information, safe handling instructions, personal protective equipment if necessary, emergency service contact information, and any special storage conditions required for safety. Momentive Performance Materials (MPM) maintains an around-the-clock emergency service for its products. SDS are available at www.momentive.com or, upon request, from any MPM representative. For product storage and handling procedures to maintain the product quality within our stated specifications, please review Certificates of Analysis, which are available in the Order Center. Use of other materials in conjunction with MPM products (for example, primers) may require additional precautions. Please review and follow the safety information provided by the manufacturer of such other materials.

Limitations

Customers must evaluate Momentive Performance Materials products and make their own determination as to fitness of use in their particular applications.

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