

## RTV5243

### Description

RTV5240 series sealants are alkoxy neutral cure, one-component, ready to use, electronic grade silicone adhesive sealants exhibiting high strength that will maintain a strong bond even when exposed to moist environments. RTV5240 series sealant are true neutral curing silicone sealants that release methyl alcohol during cure while exposed to atmospheric moisture at room temperature. Unlike most alkoxy curing silicone sealants, RTV5240 series cures very rapidly.

### Key Features and Benefits

- A non-corrosive curing process that does not produce exothermic heat or corrosive by-products can be used on corrosion-sensitive electrical and electronic equipment with no adverse effect
- Fast green strength build, fast cure (approximately 4x faster than traditional alkoxy sealants)
- Low odor cure by-product
- Tough and resilient sealant with primerless adhesion to most metals, painted surfaces and plastics
- UL recognized component, File number E-36952
- Superior hydrolytic stability. The RTV5240 series has demonstrated that it is able to maintain adhesion to many substrates after 20 weeks immersion in 60°C water
- Excellent electrical insulation properties
- Withstands exposure to harsh environments such as chemical, ozone, moisture and weathering
- Compatible with sensitive metals and plastics
- Good tear resistance
- Easy handling with no mixing, heating or solvent hazards

- Retains elastomeric properties at temperatures of -75 to 400°F

### Typical Physical Properties

Color	
RTV5242	White
RTV5243	Black
RTV5249	Gray
<b>PROPERTY</b>	<b>VALUE</b>
<b>Typical Cured Properties</b>	
Hardness, Shore A	40
Tensile Strength, MPa (psi)	2.2 (320)
Elongation, %	425
<b>Typical Uncured Properties</b>	
Specific Gravity	1.5
Application Rate, gms/min	300
Sag/Slump, mm (inches)	2.5 (0.1)
Tack Free Time, min.	45
Tooling or Skin-over time, min	10
Cure time to depth of 3.2mm (0.125 inches)	6 hours
<sup>(1)</sup> <b>Typical Electrical Properties</b>	
Dielectric Strength kv/mm (v/mill)	20 (500)
Dielectric Constant @ 60 Hz	2.8
Dissipation Factor @ 60 Hz	0.001
Volume Resistivity, Ohm/cm	$3 \times 10^{15}$

<sup>(1)</sup> Information is provided for Customer convenience. These properties are not tested on a routine basis.

### Potential Applications

The RTV5240 series are recommended for use in aerospace, automotive, appliance and other industries which incorporate electronic components or sensitive metal or

plastic substrates into a finished product. Electronic and integrated circuits, semi conductors, and copper connections are typical applications. These products are also suitable for use in moist environments.

The products in this series have fast green strength development and a cure time faster than many two-part sealants. Since they are one-part products, there is no mixing required, and they can be easily dispensed from a simple bulk dispensing pump or cartridges. Base/catalyst ratio control, static mixer maintenance, butterfly testing for mix uniformity, yield loss from base purging, and other activities/costs associated with two-part sealants are eliminated.

## **Processing Recommendations**

### **SURFACE PREPARATION**

Primers are not typically required when using RTV5240 series sealants. This silicone series offers excellent adhesion to many substrates including most sensitive metals, painted surfaces and plastics. Primers are available for difficult to bond to substrates. SS4179 primer is recommended for most plastics and painted surfaces, and SS4004P and SS4044P are recommended for most metal substrates. Adhesion to all substrates should be periodically verified by the user during actual production.

Where adhesion is required, surfaces should be thoroughly cleaned with a suitable solvent such as naphtha, methyl ethyl ketone (MEK), or isopropyl alcohol (IPA) to remove dirt, oil and grease. The surface should be wiped dry before the solvent evaporates to effectively remove the contaminants. Porous surfaces should be allowed to completely dry before sealant application.

### **CURE CYCLE TIME**

The cure process begins with the formation of a skin on the exposed surface of the sealant and progresses inward through the material. At 22°C (72°F) and 50% relative humidity, the RTV5240 series sealants will form a surface skin which is tack free to the touch in approximately 45 minutes. The RTV5240 series sealants typically may be tooled up to 10 minutes after application. A 3mm (1/8 inch) section will cure in approximately 6 hours. Full development of physical properties and adhesion of a 3mm (1/8') section will take approximately 24 hours. Always allow the maximum possible cure time available for best results.

Since cure times progressively increase with the thickness, sealant depth should be limited to 6mm (1/4 inch) where possible. For applications requiring sealant thicknesses greater than 1/4 inch, Momentive Performance Materials one component, addition cure or two component silicone rubber compounds are suggested.

Higher temperatures and humidity will accelerate the cure process and lower temperatures and humidity will slow the cure process. Do not cure the sealant at or above 43°C (110°F) as bubbles may form in the sealant that may effect the overall physical properties and adhesion.

## **DISPENSING**

Sealants may be dispensed from caulking cartridges by using simple mechanical caulking guns or air operated guns. Air operated guns will allow greater control and application speed in addition to reducing worker fatigue. DO NOT EXCEED 45 PSI when using air powered caulking guns.

Bulk dispensing equipment/pumps are used to deliver material from 5 gallon pails and 55 gallon drums. Bulk dispensing equipment typically offers the most economical solution to sealant dispensing, however, initial investment is required. Pumps, hoses, and accessories should be designed for use with silicone sealants.

## **APPLICATION INSTRUCTIONS**

Refer to, and follow the written instructions on the container and Material Safety Data Sheets.

- Use drop cloths to protect horizontal surfaces from excess sealant that may drop during tooling operations.
- Apply the sealant directly from the pail/drum using bulk dispensing equipment, or from caulking cartridges. Consult Momentive Performance Materials regarding suggested pumping equipment and procedures.
- Apply sealant by pushing the bead ahead of the nozzle and make sure that the entire cavity is filled. Air pockets or voids should always be avoided.
- Tooling may be accomplished with a dry putty knife or spatula made from stainless steel, aluminum, polyethylene, Teflon® or other suitably non-reactive materials. Tooling

should be done neatly, forcing the sealant into contact with the sides of the groove to eliminate any internal voids and assure good surface contact. Do not tool with water or soap or detergent solutions. The use of water, soap, and/or detergent solutions often leads to surface contamination during application. Surface contamination is the leading cause of poor adhesion.

## **CLEAN UP AND REMOVAL**

Un-cured sealant may be removed by scraping up the bulk of the material and following with successive wiping with soft, dry rags or paper towels. Removal of sealant from fabrics and other absorbent materials is essentially impossible once the material has begun to skin over. Complete removal of wet sealant is also difficult but may be facilitated by repeated applications of various commercially available hand cleaners suitable for grease removal, followed by blotting with dry towels or rags. Test fabric in an inconspicuous location for appearance changes prior to using any cleaning agent. Read and follow use and warning instructions for cleaning agents prior to use.

## **General Considerations for Use**

While the typical operating temperature for silicone materials ranges from -45°C to 200°C, the long-term maintenance of its initial properties is dependent upon design related stress considerations, substrate materials, frequency of thermal cycles, and other factors.

## **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](http://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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