



# RTV160

## ***Electronic Grade Silicone Flowable Adhesive Sealant***

### **Product Description**

RTV160 adhesive sealant from GE Silicones is one-component, ready-to-use electronic grade silicone sealant. It cures to a tough, resilient silicone rubber on exposure to atmospheric moisture at room temperature. The electronic-grade silicone adhesive sealant differs somewhat in physical properties including consistency.

RTV160 - white Flowable paste

### **Key Performance Properties**

- Non-corrosive to electronic metals, including copper and brass
- Low odor cure, releasing an alcohol vapor from the sealant surface during cure
- [UL](#) Recognition. RTV160 is recognized by Underwriters Laboratories, Inc. under their Component Recognition Program (UL File No. E-36952). Refer to GE Silicone Publication (4320) for additional information.
- Retains elastomeric properties for long periods at temperatures from -60C (-75F) to 205C (400F) and for short periods up to 260C (500F).
- One component
- Cure at room temperature
- Excellent electrical insulation properties
- Excellent resistance to moisture, dust, dirt, UV, ozone and chemicals

**Typical Product Data**

<b>Typical Uncured Properties</b>	<b>RTV160</b>
Color	White
Consistency	Flowable liquid
Viscosity, poise	380
Specific Gravity	1.04
Application Rate, gm/min.	—
Tack-Free Time, hours	4
<b>Cured Properties<sup>(1)</sup></b>	
<b>Mechanical</b>	
Hardness, Shore A	25
Tensile Strength, kg/cm <sup>2</sup> (lb/in <sup>2</sup> )	19 (275)
Elongation, %	230
Peel Strength, kg/cm (lb/in) <sup>(2)</sup>	2 (10)
<b>Electrical<sup>(3)</sup></b>	
Dielectric Strength, kV/mm (v/mil)	20 (500)
Dielectric Constant @ 60 Hz	2.8
Dissipation Factor @ 60 Hz	.001
Volume Resistivity, ohm-cm	4x10 <sup>14</sup>
<b>Thermal<sup>(3)</sup></b>	
Brittle Point, °C (°F)	-60 (-75)
Maximum continuous operating temperature, °C (°F)	204 (400)
Maximum intermittent operating temperature, °C (°F)	260 (500)
<b>Additional Information<sup>(3)</sup></b>	
Thermal Conductivity, cal/sec/cm <sup>2</sup> , °C/cm	.0005
(Btu/hr/ft <sup>2</sup> , °F/f)	(.12)
Coefficient of Expansion	27x10 <sup>-5</sup>
cm/cm, °C (in/in, °F)	(15x10 <sup>-5</sup> )

(1) Cure time 7 days at 25C (77F), 50% relative humidity.

(2) 1 in. x 8 in. stainless steel screen at 180° pull angle.

(3) Information is provided for customer convenience only. Properties are not tested on a routine basis.

**Specifications**

Typical product data values should not be used as specifications. Assistance and specifications are available by contacting GE Silicones at 800/255-8886

**Applications**

RTV160 is recommended for use in aerospace, automotive, appliance and other industries which incorporate electronic components into a finished product. Electronic and integrated circuits, semiconductors and copper connections are typical applications.

RTV160 adhesive sealant is recommended for insulating, encapsulating and coating in thin sections [less than 6mm (1/4")], where flow into small crevices or hard-to-reach places is desired.

**Surface Preparation**

RTV160 adhesive sealant will bond to many clean surfaces without the aid of primers. These surfaces normally include many metals, glass, ceramic, silicone rubber and some rigid plastics. These adhesive sealants will also bond to some organic rubbers and flexible plastics not containing fugitive plasticizers (those that migrate to the surface impairing adhesion). An evaluation should be made to determine bond strength for each specific application.

For difficult-to-bond substrates, use of a primer is suggested. SS4004, SS4044 and SS4179 primers are recommended for use with RTV160 sealant. Complete information and usage instructions for these primer products are contained in a separate product data sheet, (CDS#1532).

Where adhesion is required, surfaces should be thoroughly cleaned with a suitable solvent to remove dirt, oil and grease. The surface should be dry before applying the adhesive sealant.

When solvents are used, proper safety precautions must be observed.

**Cure Time Cycle**

RTV160 adhesive sealant may be applied directly to a clean or primed substrate. The adhesive sealant begins to cure on exposure to moisture in the air at room temperature. Where broad surfaces are to be bonded the sealant should be applied in a thin, less than 6mm (1/4 in.) diameter bead or ribbon around the edge of one of the surfaces.

The cure process begins with the formation of a skin on the exposed surface of the sealant and progresses inward through the material. At 25C (77F) and 50% relative humidity, these products will form a surface skin which is tack-free to the touch in about 4 hours. Once the tack-free skin has begun to form, further tooling of the adhesive sealant is not advisable.

High temperatures and high humidity will accelerate the cure process low temperatures and low humidity will slow the cure rate.

As the adhesive sealant cures, alcohol vapors are released from the sealant surface. This by-product of cure has a slight, but non-objectionable odor which will completely disappear after curing is completed.

A 3mm (1/8 in.) section of adhesive sealant will cure through in approximately 48 hours at 25C (77F) and 50% relative humidity. Since cure time increases with thickness, use of RTV160 sealant should be limited to section thicknesses of 6mm (¼ in.) or less.

## **PACKAGING AND DISPENSING**

RTV160 adhesive sealant is supplied in caulking cartridges and bulk containers.

The sealant 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. Cartridges are easy to use, can be put into production quickly and require minimum capital investment.

**Note:** Do not exceed 45 psig when used in air-powered caulking guns. Bulk containers offer the most economical packaging for volume production.

Bulk dispensing systems are air-operated extrusion pumps coupled to hand or automated dispensing units. Specific details on dispensing systems and manufacturers are available in a separate GE RTV Silicone Sealant Equipment Guide, (CDS1541).

Recommendations for pump selection and assistance in converting lines from other silicone systems to the RTV160 alkoxy cure system sealants are available from GE Silicones.

## **CLEAN UP AND REMOVAL**

Before cure, solvent systems such as naphtha or methyl ethyl ketone (MEK) are effective.

### **Handling and Safety**

Material Safety Data Sheets are available upon request from GE Silicones. Similar information for solvents and other chemicals used with our products should be obtained from your suppliers.

### **Storage and Warranty Period**

The warranty period is 6 months from date of shipment from GE Silicones if stored in the original unopened container at or below 50°F.

### **Availability**

Products may be ordered from GE Silicones, Waterford, NY 12188, the GE Silicones Sales office nearest you, or where appropriate an authorized GE silicone product distributor.

### **Government Requirement**

Prior to considering use of a GE Silicones product in fulfilling any Government requirement, please contact the Government and Trade Compliance office at 413-448-4624. CDS4500

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