



# GE Bayer Silicones



## RTV12



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*RTV12 Low Viscosity, Repairable,  
Two-Component Silicone Potting System*

### Product Description

RTV12 is a clear two-component, low viscosity potting compound that cures at room temperature to a soft pliable rubber. RTV12 will cure in deep sections without additional heating or moisture. RTV12 has been designed to achieve primerless adhesion to many substrates, including metals, plastics and ceramics, typical of those found in electronic assemblies. RTV12C curing agent is mixed with RTV12A base compound producing a clear cured rubber to provide see-through properties in greater thicknesses. RTV12 allows visual observation of the components during pouring and easy identification, repair, and replacement of components when necessary.

RTV12 is suggested for evaluation as a potting material to provide environmental protection to electrical and electronic assemblies. When cured, the soft, rubbery property of RTV12 rubber cushions against mechanical shock and vibration. The excellent electrical properties make it a candidate material for both high and low voltage electrical assemblies.

### Key Performance Properties

- Clear to allow easy identification of components
- Primerless adhesion to many metals and plastics
- Repairable
- Room temperature cure
- Excellent electrical properties
- Can be used with materials that cause cure inhibition with other RTV's
- Specially formulated to minimize copper corrosion
- Easily flows in and around complex electronic assemblies
- Easy to use on production line may be mixed by hand or machine

### Typical Product Data

#### Uncured Properties As Supplied

	RTV12A	RTV12C
Colour	Clear, Slight Haze	Clear
Viscosity, mPa.s	1300	15
Density, g/cm <sup>3</sup>	1.00	0.84
Solvent	None	Mineral Spirits

#### Uncured Properties Curing Agent Added

	RTV12A with RTV12C
Base to Curing Agent Ratio by Weight	20:1
Catalyzed Viscosity @ 5 Min.	1500
Catalyzed Brookfield Viscosity @ 30 Min.	3200
Catalyzed Brookfield Viscosity @ 60 Min.	Gel
Gel Time, minutes @ 25C	100
Gel Time, minutes @ 85C	30
Durometer, Shore A @ 3 days	18
Density, g/cm <sup>3</sup>	1.00

## Cured Properties

<b>ASTM Sheet 1.9 mm thickness</b>	<b>24 hrs Press + 48 hrs @ 25°C / 50% R.H.</b>
<b>Electrical</b>	
Dielectric Strength, kV/mm	15.7
Dielectric Constant, 1 kHz	3.0
Dissipation Factor, 1 kHz	0.001
Volume Resistivity, ohm.cm	1 x 10 <sup>13</sup>
<b>Thermal</b>	
Useful Temperature Range	-60 to 204°C

### Specifications

Typical product data values should not be used as specification. Assistance and specifications are available by contacting GE Bayer Silicones Technical Service RTV1 and RTV2.

### Instructions for Use

#### Mixing Instructions

RTV12C curing agent is non-separating. However, shaking is suggested to insure uniformity.

RTV12A base compound is mixed with RTV12C curing agent in a 20:1 ratio by weight. The base compound and curing agent must be weighed and measured to insure the proper 20:1 blend ratio. Using less curing agent will result in a softer rubber after cure.

Thoroughly mix the RTV and the curing agent using clean tools. Scrape the side and bottom of the container several times to produce a homogeneous mixture. When using power mixers avoid excessive speeds which could entrap large amounts of air or cause overheating of the silicone and resultant shortening of work life.

#### Deaeration

Air entrapped during mixing must be removed to eliminate voids in the cured product. Expose the mixed material to a vacuum of 10 - 20 mbar. 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. When using the RTV for potting, deaeration may be necessary after pouring to avoid trapping air in complex assemblies. Automatic equipment designed to meter, mix, deaerate, and dispense two-component RTV silicone rubber compounds will add convenience to continuous or large volume operations.

#### Curing

RTV12A mixed with RTV12C curing agent will gel in approximately one hour at room temperature. This permits handling a potted container without spilling the contents (even if inverted). However, complete cure requires 72 hours at room temperature.

More rapid cure may be realized by using mild heat. For example, cure may be obtained in one hour at 85°C. Laboratory curing tests should be run prior to production to determine the appropriate cure for a specific potted assembly. Longer cure times may be required for large and deep section assemblies.

#### Bonding

RTV12 offers primerless adhesion to many components, wire insulation and potting containers used in electrical and electronic assemblies. To achieve optimum adhesion, all components must be clean and dry prior to potting. A laboratory test is recommended to confirm adhesion prior to production use. SS4004P, SS4044P or SS4179 primers may improve RTV12 rubber adhesion to substrates showing borderline adhesion. Complete information and usage instructions for primers is available upon request. Bonding to components is desirable to minimize electrical leakage, particularly in humid environments.

**Handling and Safety**

Material Safety Data Sheets are available upon request from GE BAYER SILICONES. Similar information for solvents and other chemicals used with the GE Bayer products should be obtained from your supplier. When solvents are used, proper safety precautions must be observed.

**WARNING:** RTV12C curing agent will cause severe skin irritation and eye burns. Keep out of reach of children. Avoid contact with skin, eyes and clothing. If spilled on clothing, remove clothing at once and wash same before re-use. In case of contact, immediately flush skin or eyes with water for 15 minutes, and consult a physician.

RTV12C curing agent contains mineral spirits and is classified as flammable. Keep away from heat, sparks and flame.

**Storage and Warranty Period**

The warranted shelf life will be indicated by the 'use before date' on the associated documents with a minimum of 4 months when stored in the original unopened containers below 27° C.

**Availability**

RTV 12A is available in kits of 450 g, pails of 18 kg and 43 kg as well as in drums of 180 kg.

RTV 12 C is available in kits of 450 g.

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