



## RTV5812, RTV5818

### **RTV5810 Series** **One-Component, Modified Alkoxy Adhesive Sealants**

#### **Product Description**

RTV5810 Series sealants are neutral cure, one-component, ready to use silicone adhesive sealants that cure to tough resilient silicone rubber on exposure to atmospheric moisture at room temperature. These sealants are fast curing paste consistency products designed for use where quick initial adhesion build is desired. This allows for movement of the sealed assemblies in a shorter period of time increasing productivity.

#### **Key Performance Properties**

- Primerless adhesion to many metals and plastics
- Non-corrosive to most substrates
- Low odour cure
- Good confined cure properties
- One-component product - No mixing required
- Retain elastomeric properties at temperatures of -60C to 204C for long periods and to 260C for short periods
- Room temperature cure
- Excellent electrical insulation properties
- Excellent UV, chemical and weather resistance

#### **Applications**

The cure properties of these adhesive sealants make them ideally suited for applications in confined spaces. These paste-consistency silicone sealants can be used in thickness up to 6mm for bonding and sealing, joining metals and plastics, and electrical insulation. For applications requiring sealant thickness greater than 6mm, GE Bayer Silicones one component, addition cure or two component silicone rubber compounds are recommended.

#### **Typical Product Data**

<b>Typical Uncured Properties</b>	<b>RTV5810 Series</b>
RTV5812	White
RTV5818	Translucent
Consistency	Paste
Density, g/cm <sup>3</sup>	1.04
Application Rate, g/min.	360
Tack Free Time, minutes	15
Cure Through Time, hours	12
<b>Typical Cured<sup>(1)</sup> Properties</b>	<b>RTV5810 Series</b>
<b>Mechanical:</b>	
Hardness, Shore A	24
Tensile Strength, MPa	2.1
Elongation, %	435
Tear Strength, N/mm	7.1
Peel Strength, N/mm	8 (47)

<b>Electrical:(2)</b>	
Dielectric Strength, kV/mm	17
Dielectric Constant @ 100 Hz	2.8
Dissipation Factor @ 100 Hz	0.002
Volume Resistivity, ohm-cm	$2 \times 10^{15}$
<b>Thermal:(2)</b>	
Brittle Point, °C	-60
Thermal Conductivity, W/m K	0.18
Coefficient of Thermal Expansion, mm/mm/°C	$3.0 \times 10^{-4}$

<sup>(1)</sup> Cured 7 days at 25°C (77°F) and 50% relative humidity.

<sup>(2)</sup> Information is provided for customer convenience. These 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 Bayer Silicones Technical Service RTV1 and RTV2.

### Instructions for Use

#### Surface Preparation

RTV5810 series sealants will bond to many clean surfaces without the aid of primers. These surfaces include many metals, glass, ceramic, silicone rubber and some rigid plastics.

Surfaces should be thoroughly cleaned with a suitable solvent to remove dirt, oil, grease and surface contaminants. The surface should be wiped dry before applying the adhesive sealant.

Due to substrate variability, an evaluation should be made to determine whether acceptable bond strength develops for each specific application. For difficult to bond substrates, use of a primer is suggested. SS4004P, SS4044P and SS4179 primers from GE Bayer Silicones are recommended for use with these sealants. Complete information and usage instructions for these primers are contained in a separate product data sheet.

#### APPLICATION AND CURE TIME CYCLE

These adhesive sealants may be applied directly to clean or primed substrates. Where broad surfaces are to be mated, the sealant should be applied in a thin, less than 6mm diameter bead or ribbon around the edge of the surface to be bonded.

The cure process begins with the formation of a skin on the exposed surface of the sealant and progresses inward through the material. Due to its fast curing nature, at 25°C/50% RH RTV5810 will form a skin and become tack free in only 15-20 minutes. Once the tack free skin has begun to form, further tooling of the adhesive sealant is not recommended.

As the adhesive sealant cures, methyl alcohol and residual ammonia vapours are released from the sealant surface.

Because these adhesive sealants cure by reacting with atmospheric moisture, higher temperatures and humidity will accelerate the cure process. Lower temperatures and humidity will slow the cure rate. Exact cure time will depend on temperature, humidity, sample thickness and sealant configuration. Since cure time increases with thickness, use of these adhesive sealants should be limited to section thickness of 6mm .

#### PHYSICAL PROPERTY DEVELOPMENT

In addition to the effects of temperature and relative humidity, development of maximum bond strength will depend on joint configuration, degree of confinement, sealant thickness and substrate porosity. Normally, sufficient bond strength will develop in 4-6 hours for RTV5810 to permit handling of parts. Stress should not be applied to the bonded joint until full adhesive strength has developed. Eventually the adhesive strength of the bond will exceed the cohesive strength of the silicone rubber adhesive sealant itself. Always allow maximum cure time available for best results.

## **NON-CORROSIVE PROPERTIES**

RTV5810 series adhesive sealants comply with the non-corrosive requirements of MIL-A-46146B on aluminum and steel.

When allowed to cure in enclosed conditions, these sealants will discolour sensitive metals such as copper and brass. When allowed to cure in non-enclosed conditions, these sealants may discolour sensitive metals such as copper and brass but only when in direct contact.

## **CLEANUP AND REMOVAL**

Before cure, solvent systems such as naphtha or methyl ethyl ketone (MEK) are most effective. After cure, selected chemical strippers which will remove the silicone rubber are available from other manufacturers. Specific product information may be obtained on request.

### **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.

### **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**

RTV5812 and RTV5818 are available in 18 kg pails and 204 kg drums.

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