



## N-Sil® RTV122, RTV123, RTV128

*N-SIL® RTV122, RTV123, RTV128  
Silicone Modified Alkoxy Adhesive Sealants*

### Product Description

N-SIL RTV122, RTV123 and RTV128 are one-component, ready-to-use adhesive sealants. These adhesive sealants cure at room temperature on exposure to atmospheric moisture to a tough, resilient silicone rubber.

Typical applications include, but are not limited to, sealing vertical joints, bonding dissimilar materials such as metal to plastic and glass to aluminum, electrical insulation of wires and terminals.

The following N-SIL adhesive sealants are identical except for colour:

RTV 122 White

RTV 123 Black

RTV 128 Translucent

### Key Performance Properties

Primerless adhesion to many metals and plastics\*.

Non-corrosive to aluminum and steel per MIL-A-46146A+.

Lower odour cure than conventional acetoxysilicone sealants.

UL Recognition. Recognized by Underwriters' Laboratories, Inc. under their Component Recognition Program (UL File No. E-36952).

One component.

Cures at room temperature.

Excellent electrical insulation properties.

Retains elastomeric properties at temperatures of -60C to 204C for long periods and to 260C for short periods.

Excellent weatherability, ozone, and chemical resistance.

\* Do not use with polycarbonate. Ammonia and alcohol are by-products of cure. Ammonia may cause crazing of the polycarbonate.

+ Non-corrosive to aluminum and steel per MIL-A-46146A. Will discolour sensitive metals such as copper and brass when tested per MIL-A-46146A. If you require a sealant that does not discolour copper and brass, suitable sealants are available from GE Bayer Silicones.

### Typical Product Data

Typical Uncured Properties	N-SIL RTV122, RTV123, RTV128
Colour	RTV122 White RTV123 Black RTV128 Translucent
Consistency	Thixotropic Paste
Specific Gravity	1.04
Application Rate, g/min 3.2 mm orifice @ 6.2 bar	500
Tack Free Time, minutes <sup>1</sup>	20
Cure Through Time, hours <sup>1</sup>	24
<b>Typical Cured Properties<sup>(1)</sup> (3 days)</b>	
<b>Mechanical:</b>	
Hardness, Shore A Durometer	30
Tensile Strength, MPa	1.72
Elongation, %	350
Tear Strength, kN/m <sup>(2)</sup>	6.1

<b>Electrical:</b> <sup>(2)</sup>	
Dielectric Strength kV/mm	20
Dielectric Constant @ 60 Hz	2.8
Dissipation Factor @ 60 Hz	0016
Volume Resistivity, ohm-cm	$4 \times 10^{15}$
<b>Thermal:</b> <sup>(2)</sup>	
Brittle Point, °C	-60 (-75)
Thermal Conductivity, W/mK	0.21
Coefficient of Expansion, cm/cm °C	$27 \times 10^{-5}$ ( $15 \times 10^{-5}$ )

(1) @ 25C /50% RH

(2) Information is provided for customer convenience. Their 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

N-SIL RTV122, RTV123 and RTV128 adhesive sealants display primerless adhesion to many metals, rigid plastics and glass. Typical values for primerless adhesion for N-SIL RTV128 adhesive sealant include:

	<b>Peel Adhesion* 3 day cure kN/m (lb/in)</b>
Aluminum (Alclad 2024)	7.0 (40)
Cold Rolled Steel	7.0 (40)
Glass	6.1 (35)
Glass Filled Polyester (FRP)	7.9 (45)
Epoxy	7.0 (40)
Rigid PVC	7.0 (40)

\*Per ASTM D-903 cured as specified at 25C /50% RH using 25mm x 650mm stainless steel screen at 180° pull angle.

When adhesion is important, surfaces must be cleaned to remove dirt, oil, grease and surface contaminants. For metals and glass, suitable solvents such as naphtha, methyl ethyl ketone (MEK), or 1,1,1- trichloroethane should be used. For plastics, a cleaning agent that is compatible with the specific plastic should be used. All surfaces should be wiped dry before applying the adhesive sealant. Due to substrate variability, an evaluation should be made to determine bond strength for each specific application. If adhesion testing shows that a stronger bond is desired, use of a primer is suggested. SS4004P, SS4044P, and SS4179 primers from GE Bayer Silicones are recommended for use with these sealants. SS4179 primer is recommended for evaluation where a stronger bond is desired on a plastic surface. SS4004P and SS4044P general purpose primers are for non-plastic surfaces. SS4004P and SS4044P primers are identical products, differing only in colour (complete information and usage instructions for these primers are contained in a separate product data sheet).

#### Application and Cure Time Cycle

N-SIL RTV122, RTV123 and RTV128 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.

N-SIL adhesive sealants utilize a moisture vapour cure system which releases an alcohol and residual ammonia from the sealant surface during cure.

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 and 50% relative humidity, N-SIL adhesive sealants will form a surface skin that is tack free to the touch in 20 minutes. Once the tack free skin has begun to form, no further tooling of the adhesive sealant is recommended.

Because N-SIL adhesive sealants cure by reacting with atmospheric moisture, high humidity will accelerate the cure process and low humidity will slow the cure rate. Moderate temperature elevation accompanied by elevated humidity will also accelerate the cure rate.

### **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 12 to 24 hours to permit handling of parts. Stress should not be applied to the bonded joint until full adhesive strength is 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.

After extended time periods at temperatures in excess of 100C, yellowing of RTV122 and RTV128 may be noticed. The yellowing constitutes a colour change only and is not of itself an indication of a loss of elastomeric or electrical properties.

### **CLEAN UP AND REMOVAL**

Before curing, 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**

N-SIL RTV122, RTV123 and RTV128 adhesive sealants are available in 204 kg drums, 18.1 kg pails and 300 ml cartridges.

#### **LEGAL DISCLAIMER**

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