

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<sup>1</sup>.  
 Non-corrosive to aluminum and steel per MIL-A-46146A+.  
 Lower odour cure than conventional acetoxy silicone 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.

<sup>1</sup> 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 Momentive Performance Materials.

**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 x 10 <sup>15</sup>
<b>Thermal:</b> <sup>(2)</sup>	
Brittle Point, °C	-60 (-75)
Thermal Conductivity, W/mK	0.21
Coefficient of Expansion, cm/cm °C	27 x 10 <sup>-5</sup> (15 x 10 <sup>-5</sup> )

(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 Momentive Performance Materials. 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 Momentive Performance Materials. 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 Momentive Performance Materials. Similar information for solvents and other chemicals used with the Momentive Performance Materials 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.



PRINCIPAL LOCATIONS – Regional Information

North America	World Headquarters 187 Danbury Road Wilton, CT 06897, USA	T 800.295.2392	F 607.754.7517
Latin America	Rodovia Eng. Constâncio Cintra, Km 78,5 Itatiba, SP – 13255-700, Brazil	T +55.11.4534.9650	F +55.11.4534.9660
Europe, Middle East, Africa and India	D-51368 Leverkusen Germany	T 00.800.4321.1000 T +31.164.293.276	F +31.164.241.750
Pacific	Akasaka Park Building - 5-2-20 Akasaka Minato-ku, Tokyo 107-6112 Japan	T +81.3.5544.3100	F +81.3.5544.3101

CUSTOMER SERVICE CENTERS

North America	Charleston, WV 25314, USA E <a href="mailto:cs-na.silicones@momentive.com">cs-na.silicones@momentive.com</a>		
	<ul style="list-style-type: none"> <li>Specialty Fluids</li> <li>UA, Silanes, Resins, and Specialties</li> <li>RTV Products-Elastomers</li> <li>Sealants and Adhesives &amp; Construction</li> </ul>	T 800.523.5862 T 800.334.4674 T 800.332.3390 T 877.943.7325	F 304.746.1654 F 304.746.1623 F 304.746.1623 F 304.746.1654
Latin America	E <a href="mailto:cs-la.silicones@momentive.com">cs-la.silicones@momentive.com</a>		
	<ul style="list-style-type: none"> <li>Argentina &amp; Chile</li> <li>Brazil</li> <li>Mexico &amp; Central America</li> <li>Venezuela, Ecuador, Peru, Colombia, &amp; Caribbean</li> </ul>	T +54.11.4862.9544 T +55.11.4534.9650 T +52.55.5899.5135 T +58.212.285.2149	F +54.11.4862.9544 F +55.11.4534.9660 F +52.55.5899.5138 F +58.212.285.2149
Europe, Middle East, Africa and India	E <a href="mailto:cs-eur.silicones@momentive.com">cs-eur.silicones@momentive.com</a>	T 00.800.4321.1000 T +31.164.293.276	F +31.164.241750
Pacific	E <a href="mailto:cs-ap.silicones@momentive.com">cs-ap.silicones@momentive.com</a>		
	<ul style="list-style-type: none"> <li>Japan</li> <li>China</li> <li>Korea</li> <li>Singapore</li> </ul>	T +81.276.20.6182 T +86.21.5050.4666 (ext. 1523) T +82.2.6201.4600 T +65.6220.7022	
Worldwide Hotline	Worldwide Web <a href="http://www.momentive.com">www.momentive.com</a>	T 800.295.2392 T +607.786.8131	F +607.786.8309

DISCLAIMER: THE MATERIALS, PRODUCTS AND SERVICES OF MOMENTIVE PERFORMANCE MATERIALS INC., MOMENTIVE PERFORMANCE MATERIALS USA INC., MOMENTIVE PERFORMANCE MATERIALS ASIA PACIFIC PTE. LTD., MOMENTIVE PERFORMANCE MATERIALS WORLDWIDE INC., MOMENTIVE PERFORMANCE MATERIALS GmbH & Co. KG, MOMENTIVE PERFORMANCE MATERIALS SUISSE Sarl, THEIR SUBSIDIARIES AND AFFILIATES DOING BUSINESS IN LOCAL JURISDICTIONS (collectively "SUPPLIERS"), ARE SOLD BY THE RESPECTIVE LEGAL ENTITY OF THE SUPPLIER SUBJECT TO SUPPLIERS' STANDARD CONDITIONS OF SALE, WHICH ARE INCLUDED IN THE APPLICABLE DISTRIBUTOR OR OTHER SALES AGREEMENT, PRINTED ON THE BACK OF ORDER ACKNOWLEDGMENTS AND INVOICES, AND AVAILABLE UPON REQUEST. ALTHOUGH ANY INFORMATION, RECOMMENDATIONS, OR ADVICE CONTAINED HEREIN IS GIVEN IN GOOD FAITH, SUPPLIERS MAKE NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, (i) THAT THE RESULTS DESCRIBED HEREIN WILL BE OBTAINED UNDER END-USE CONDITIONS, OR (ii) AS TO THE EFFECTIVENESS OR SAFETY OF ANY DESIGN INCORPORATING SUPPLIERS' PRODUCTS, MATERIALS, SERVICES, RECOMMENDATIONS OR ADVICE. AFOREMENTIONED EXCLUSIONS OR LIMITATION OF LIABILITY ARE NOT APPLICABLE TO THE EXTENT THAT THE END-USE CONDITIONS AND/OR INCORPORATION CONDITIONS CORRESPOND TO THE RECOMMENDED CONDITIONS OF USE AND/OR OF INCORPORATION AS DESCRIBED BY SUPPLIER IN ITS PRODUCT DATA SHEET AND/OR PRODUCT SPECIFICATIONS. EXCEPT AS PROVIDED IN SUPPLIERS' STANDARD CONDITIONS OF SALE, SUPPLIERS AND THEIR REPRESENTATIVES SHALL IN NO EVENT BE RESPONSIBLE FOR ANY LOSS RESULTING FROM ANY USE OF ITS MATERIALS, PRODUCTS OR SERVICES DESCRIBED HEREIN. Each user bears full responsibility for making its own determination as to the suitability of Suppliers' materials, services, recommendations, or advice for its own particular use. Each user must identify and perform all tests and analyses necessary to assure that its finished parts incorporating Suppliers' products, materials, or services will be safe and suitable for use under end-use conditions. Nothing in this or any other document, nor any oral recommendation or advice, shall be deemed to alter, vary, supersede, or waive any provision of Suppliers' Standard Conditions of Sale or this Disclaimer, unless any such modification is specifically agreed to in a writing signed by Suppliers. No statement contained herein concerning a possible or suggested use of any material, product, service or design is intended, or should be construed, to grant any license under any patent or other intellectual property right of Suppliers or any of its subsidiaries or affiliates covering such use or design, or as a recommendation for the use of such material, product, service or design in the infringement of any patent or other intellectual property right.

\*N-Sil is a trademark of Momentive Performance Materials Inc.  
Copyright 2007 Momentive Performance Materials, Inc. All rights reserved.  
7/24/07 - EU-50-052-00