

RTV142

White, Low Volatile, One Component Silicone Adhesive/Sealant

Product Description RTV142 one-component, ready-to-use adhesive sealant cures to a tough, durable, resilient silicone rubber on exposure to atmospheric moisture at room temperature. Methyl alcohol vapours are released from the sealant surface as a by-product of cure. These vapours have low odour and are non-corrosive to metals. An important property of RTV142 is its low volatility.

RTV142 sealant has a thixotropic paste consistency. This allows it to be applied to vertical and overhead surfaces without sagging. Since it utilizes a moisture cure system, RTV142 sealant should not be used in thicknesses of greater than 6mm. When section depths exceed 6mm, Momentive performance materials one-component, addition cure or two-component silicone rubber compounds are suggested.

Key Performance Properties

- Room temperature cure
- Primerless adhesion to many substrates
- Low odour
- Non-corrosive to metals
- Low volatility
- Low temperature flexibility
- High temperature performance
- Excellent electrical insulation properties

Applications The non-corrosiveness to metals and low volatility of RTV142, as well as its paste consistency, makes it well suited for critical electronic adhesive, gasketing and sealing applications where a high level of volatile condensable materials cannot be tolerated.

Typical Product Data

Uncured Properties	
Consistency	Paste
Colour	White
Application Rate, g/min	975
Density, g/cm ³	1.09
Tack-Free Time, hours	4
Cured Properties	
Tensile Strength, MPa	3.8
Elongation, %	400
Hardness, Shore A	34
Tear Strength, kN/m ⁽⁵⁾	9

Shear Strength, MPa ⁽²⁾	2.1
Peel Strength, kN/m ⁽³⁾	10.5
% Total Wt Loss ⁽⁴⁾	0.22
% Volatile Condensable Materials ⁽⁴⁾	0.05
% Linear Shrinkage ⁽⁵⁾	< 1.0
Electrical	
Dielectric Strength, kV/mm	20
Dielectric Constant @ 60 Hz	2.8
Dissipation Factor @ 60 Hz	0.001
Volume Resistivity, ohm.cm	4.5 x 10 ¹⁵
Thermal	
Continuous Operating Temperature, C	-60 to 204
Coefficient of Expansion, cm/cm, C	2.7 x 10 ⁻⁴
Thermal Conductivity, W/mK	0.21

(1) Cure time 10 days @ 25C/50% RH.

(2) At 100% cohesive failure.

(3) At 100% cohesive failure using 2.5 cm x 20 cm stainless steel screen at 180 degree pull angle.

(4) Ball Aerospace VCM Test 33074.

(5) 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 Momentive performance materials Technical Service RTV1 and RTV2.

Instructions for Use **Surface Preparation**
RTV142 sealant will bond to many clean surfaces without the aid of primers. These surfaces typically include many metals, glass, ceramic, silicone rubber and some rigid plastics. These adhesive sealant products may also produce acceptable bonds to organic rubber and to some flexible plastics not containing fugitive plasticizers (those that migrate to the surface, impairing adhesion). 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. Primers SS4004P, SS4044P and SS4179 are recommended for use with these sealants. (Complete information and usage instructions for these primer products are contained in a separate product data sheet).

Where adhesion is required, surfaces should be thoroughly cleaned with a suitable solvent such as naphtha or methyl ethyl ketone (MEK) to remove dirt, oil and grease. The surface should be wiped dry before applying the adhesive sealant.

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

Application and Cure Time Cycle

RTV142 sealant can 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 RTV. At 25 C and 50% relative humidity, RTV142 sealant will form a surface skin which is tack-free to the touch in 4 hours. Once the tack-free skin has begun to form, further tooling of the adhesive sealant is not advisable.

Higher temperatures and humidity will accelerate the cure process: low temperatures and low humidity will slow the cure rate.

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

A 3mm section of adhesive sealant will cure through in approximately 48 hours at 25C and 50% R.H. Since cure time increases with thickness, use of these adhesive sealants should be limited to section thicknesses of 6mm or less.

Bond Strength 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 48 hours to permit handling of parts. Minimum stress should be applied to the bonded joint until full adhesion 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.

CLEAN UP AND REMOVAL

Before curing, solvent systems such as naphtha or methyl ethyl ketone (MEK) are most effective. Refer to solvent use warnings in the section on surface preparation.

After cure, selected chemical strippers which will remove the silicone rubber are available from the other manufacturers.

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 at or below -18° C.

Availability

RTV142 Silicone Sealant Adhesive is available in a 06SC 160 ml cartridge.



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	• RTV Products-Elastomers	T 800.332.3390	F 304.746.1623
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