

RTV1673LV

Description

RTV1673LV, one-component, ready-to-use adhesive sealants cures to a tough durable, resilient silicone rubber when exposed to atmospheric moisture at room temperature. Methyl alcohol and a small amount of residual ammonia vapors are released from the sealant surface as a by-product of cure. As such, this product is low odor and non-corrosive to steel and aluminum.

RTV1673LV, sealant is a thixotropic paste consistency product. It can be applied to vertical and overhead surfaces without sagging. Since this sealant utilizes a moisture cure system, they should not be used in thickness greater than 6 mm (1/4 in.). When section depths exceed 6mm (1/4 in.), Momentive Performance Materials one component, addition cure or two-component silicone rubber compounds are recommended.

Key Features and Typical Benefits

- One-component product
- Room temperature cure
- Primerless adhesion to many substrates[#]
- Low odor
- Non-corrosive to aluminum and steel
- Low volatility
- Low temperature flexibility
- High temperature performance
- Excellent weatherability, ozone, and chemical resistance
- Excellent electrical insulation properties

Typical Physical Properties

<u>Property</u>	<u>Unit</u>	<u>Value</u>
Uncured Properties		
Consistency		Paste
Color		Black
Application Rate, seconds ⁽¹⁾		810
Specific Gravity		1.059
Tack-Free Time, minutes		15
Cured⁽²⁾ Properties		
Mechanical:		
Tensile Strength	kg/cm ² (lb/in ²)	25.3 (360)

Typical physical properties are average data and should not be used as or to develop product specifications.

Typical Physical Properties

<u>Property</u>	<u>Unit</u>	<u>Value</u>
Percent Elongation		560
Hardness, Shore A	25% Volatiles ⁽³⁾	0.41
Tear Strength	kg/cm (lb/in) ⁽⁴⁾	9 (50)
Shear Strength	kg/cm ² (lb/in ²) ⁽⁴⁾⁽⁵⁾	9.8 (140)
Peel Strength	kg/cm (lb/in) ⁽⁴⁾⁽⁶⁾	9 (50)
Electrical: ⁽⁴⁾		
Dielectric Strength	kV/mm(V/mil)	20 (500)
Dielectric Constant (60 0Hz)		2.6
Dissipation Factor (60 Hz)		0.001
Volume Resistivity	Ω·cm	2x5 x 10 ¹⁵
Thermal: ⁽⁴⁾		
Continuous Operating Temp. Range °C (°F)		-60 to 204 (-75 to 400)
Coefficient of Expansion	cm/cm, °C (in/in, °F)	2.7 x 10 ⁻⁴ (1.5 x 10 ⁻⁴)
Thermal Conductivity	W/mK (cal/sec/cm ² , C/cm)	0.21 (0.0005)
(BTU/hr/ft ² , F/ft)		(0.12)

Typical physical properties are average data and should not be used as or to develop product specifications.

- (1) Application rate is the time required to extrude 50 gms of sealant at psi through a 1/2" ID steel nozzle.
- (2) Cure time 3 days at 25 °C(77 °F)/50% RH.
- (3) Silica producing volatiles established via gas chromatograph of solvent extraction on cured material.
- (4) Information is provided for customer convenience only. These properties are not tested on a routine basis.
- (5) At 100% cohesive failure.
- (6) At 100% cohesive failure using 1 in. x 8 in. stainless steel screen at 180 degree pull angle.

Potential Applications

The thixotropic paste consistency of RTV1673LV makes it ideal for gasketing applications. Its chemical resistance and low volatility are desirable for automotive engine gasketing applications and its low odor increases personnel comfort in production areas.

Do not use RTV1673LV on polycarbonate.

Processing Recommendations

Surface Preparation

RTV1673LV, 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

(NOTE: DO NOT use RTV1673LV on polycarbonate).

This adhesive sealant product may also produce acceptable bonds to organic rubber and to some flexible plastics not containing fugitive plasticizers (which 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 SS4004, SS4044, 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 (CDS1532).

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

Paste-consistency products 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 (1/4 in.) 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. At 25 °C (77 °F) and 50% relative humidity, RTV1673LV sealant will form a surface skin which is tack-free to the touch in about 25 minutes. 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 and residual ammonia vapors are released from the sealant surface.

At 3mm (1/8 in.) section of adhesive sealant will cure through in approximately 24 hours at 25 °C (77 °C) and 50% R.H. Since cure time increases with thickness, use of these adhesive sealants should be limited to section thickness of 6mm (1/4 in.) 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 12 to 24 hours to permit handling of parts. Minimum stress should 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.

Packaging and Dispensing

RTV1673LV sealant is available in 55 gallon drums and 5 gallon pails. Dispensing from these containers is readily accomplished using air operated extrusion pumps coupled to hand or automated dispensing units. Pumps which are specifically designed for pumping one-component RTV silicone rubber have TEFLON® seals, packaging, ad lined hoses to prevent moisture permeation and pump cure problems. Specific details on dispensing systems and manufacturers are available in a separate Momentive Performance Materials RTV Silicone Rubber Equipment Guide (CDS1541).

Cleanup 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 other manufacturers. Specific product information may be obtained on request.

Patent Status

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Product Safety, Handling and Storage

Customers should review the latest Safety Data Sheet (SDS) and label for product safety information, safe handling instructions, personal protective equipment if necessary, emergency service contact information, and any special storage conditions required for safety. Momentive Performance Materials (MPM) maintains an around-the-clock emergency service for its products. SDS are available at www.momentive.com or, upon request, from any MPM representative. For product storage and handling procedures to maintain the product quality within our stated specifications, please review Certificates of Analysis, which are available in the Order Center. Use of other materials in conjunction with MPM products (for example, primers) may require additional precautions. Please review and follow the safety information provided by the manufacturer of such other materials.

Limitations

Customers must evaluate Momentive Performance Materials products and make their own determination as to fitness of use in their particular applications.

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