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RTV102 - WHITE SILICONE SEALANT

PRODUCT INFORMATION

RTV102 is a ready to use adhesive sealant and extremely versatile. It cures to a tough, durable, resilient silicone rubber on exposure to atmospheric moisture at room temperature. Acetic acid vapours are released from the sealant surface as a by-product of cure. RTV102 sealant is a standard paste consistency which can be applied to vertical and overhead surfaces where pourable/self-levelling sealants are not practical.

KEY PERFORMANCE PROPERTIES

- Capability to cure at room temperature and ambient humidity
- Self adhesion properties
- Low temperature flexibility
- High temperature performance
- Excellent weatherability and ozone and chemical resistance
- Excellent electrical insulation properties

APPLICATIONS

General purpose bonding, sealing, formed in place gaskets. Can be applied to vertical or overhead surfaces.

APPROVALS/COMPLIANCE

FDA 21 CFR 177.2600 USDA NSF International Std. No. 51

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SPECIFICATIONS

FDA STATUS - can be used in food contact applications where FDA regulations apply.

USDA STATUS - may be used on equipment, which may contact edible products in official establishments operating under the Federal meat and poultry products inspection program. See USDA letter of Authorization.

NSF INTERNATIONAL STATUS - NSF international lists RTV102 sealants under NSF International Standard No. 51 (Plastic Materials and Components for Use in Food Equipment), as satisfactory for use on food contact surfaces.

UL STATUS - RTV102 silicone rubber adhesive sealants are recognised by Underwriters Laboratories, Inc., under their Component Recognition Program (UL File No. E-36952).

MILITARY - (MII-A-46106) Group 1, Type 1, general purpose paste

INSTRUCTIONS FOR USE

SURFACE PREPERATION

RTV102 sealant will bond to many clean surfaces without aid of primers. These surfaces typically include many metals, glass, ceramic, silicone rubber and some rigid plastics. This adhesive sealant product will also produce fair 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 bond strength for each specific application. For difficult to bond substrates, use of a primer is suggested. Primers SS4004P, SS4044P and SS4179 are recommended. 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.

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INSTRUCTIONS FOR USE

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 diameter, bead or ribbon around the edge of the surface to be bonded. Flowable products may be applied to clean or primed substrates by pouring directly from the original container or dripping. These products will self level on a surface, filling small crevices and surface voids. Depth of potted sections should not exceed 6mm. 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 and 50% relative humidity, RTV102 sealants will form a surface skin, which is tack free to the touch in 15 to 30 minutes. Once the tack free skin has begun to form, further tooling of the adhesive sealant is not advisable. Higher temperature and humidity will accelerate the cure process. Low temperatures and low humidity will slow the cure rate. As the adhesive sealant cures, acetic acid vapours are released from the sealant surface. The odour of acetic acid will completely disappear when curing is completed. A 3mm section of adhesive sealant will cure through in approximately 24 hours at 25°C and 50% R.H. Since cure time increases with the thickness, use of this adhesive sealant 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 12 to 24 hours to permit handling of parts. Minimum stress should be applied to the bonded joint until full adhesive strength is developed. Always allow maximum cure time available for best results.

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PACKAGING AND DISPENSING

RTV adhesive sealants are supplied ready to use in collapsible aluminium squeeze tubes. Collapsible aluminium tubes may be squeezed by hand or with the aid of mechanical ringers which allow more complete removal of material from the tube. Air-operated dispensing guns may also be used and offer the advantages of improved control and faster application for production line use.

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 other manufacturers.

HANDLING AND SAFETY

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 products packaging. There is usually a minimum of 4 months when stored in the original unopened containers below 25°C.

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TYPICAL PRODUCT DATA - UNCURED PROPERTIES

Consistency		Paste
Viscosity	mPa's	-
Application Rate	g/min	400
Density	g/cm ³	1.05
Tack-Free-Time	min	20

TYPICAL PRODUCT DATA - CURED PROPERTIES **3 days at 25°C and 50% relative humidity**

Mechanical		
Tensile strength	MPa	2.8
Elongation	%	450
Hardness	Shore A	30
Tear Strength	N/mm	8
Shear strength	MPa	1.4
Peel Strength	N/mm	7

Electrical		
Dielectric strength	kV/mm	20
Dielectric Constant @ 60 Hz		2.8
Dissipation Factor @ 60 Hz		0.001
Volume Resistivity	Ohm.cm	3x10 ¹⁵

Additional information		
Linear shrinkage	%	1.0
Thermal conductivity	W/m-K	0.21
Coefficient of expansion	1/°K	27x10 ⁻⁵

Thermal		
Maximum continuous operating temperature	°C	200
Maximum intermittent operating temperature	°C	260

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