R-2141

RTV silicone adhesive

DESCRIPTION

- Two Part, Translucent, 1:1 Mix ratio (A:B)
- Cures at room temperature or rapidly with the application of heat in an oven, or by a heat gun or lamp
- Non-slump but is easily dispensed
- Does not require atmospheric moisture to cure
- No curing byproducts such as acetic acid or methyl alcohol

APPLICATION

- As adhesives for bonding and sealing silicones to each other and other substrates such as metals and plastics
- Consistency allows products to be supplied in easy-to-use, airless side-by-side kits that eliminate mixing and deairing difficulties
- Protects electrical components and assemblies against shock, vibration, moisture, dust, chemicals, and other environmental hazards

PROPERTIES

Typical Properties	Average Result	Standard	NT-TM
Uncured:			
Appearance	Translucent	ASTM D2090	002
Viscosity, Part A	80,000 cP	ASTM D1084, D2196	001
Viscosity, Part B	70,000 cP	ASTM D1084, D2196	001
Work Time	1.5 hours	-	008
Tack Free Time	4 hours	ASTM C679	005
Flow	0.3 inches/5 minutes	ASTM D2202	019
Cured: 24 hours at ambient temperature and humidity			
Specific Gravity	1.10	ASTM D792	003
Durometer, Type A	40	ASTM D2240	006
Tensile Strength	650 psi (4.5 MPa)	ASTM D412	007
Elongation	250 %	ASTM D412	007
Dielectric Constant, 100 Hz	2.80	ASTM D150	906
Dielectric Constant, 1 kHz	2.81	ASTM D150	906
Dissipation Factor, 100 Hz	0.0010	ASTM D150	906

Typical Properties	Average Result	Standard	NT-TM
Dissipation Factor, 100 kHz	0.0015	ASTM D150	906
Dielectric Strength	630 V/ml (24.5 kV/mm)	ASTM D149	243
Volume Resistivity	5 X 10^{15} ohm•cm	ASTM D257	153
Volatile Content (1 hour at 275°C)	0.3%	ASTM D2288	004
Cured: 60 minutes at 150°C (302°F)			
Lap Shear to Aluminum (unprimed)*	350 psi (2.4 MPa)	ASTM D1002	010
Cure Loss	1%	ASTM D2288	004

The test data shown for this material is the average value for typical properties. All of these properties may not be tested on a lot to lot basis and cannot be used to draft specifications. Please contact NuSil® for assistance and recommendations in establishing limits for product specifications.

* Tested after a 24 hour rest period at ambient after initial cure of 1 hour at 150 °C

INSTRUCTIONS FOR USE

Processing

Thoroughly mix Part A with Part B in a 1:1 mix ratio by weight or volume. Airless mixing, metering and dispensing equipment is recommended for production processing.

R-2141 has shown to provide enough adhesion that the component can be handled within 4-8hrs after the adhesive has been applied however the most suitable process must be determined by the customer based on the manufacturing environment and conditions.

NuSil recommends dispensing using side by side kit packaging or mix and meter equipment due to the pot life and viscosity of the material. If mix meter or dual cartridge equipment is unavailable, R-2141 will require de-airing due to trapped air. NuSil recommends verification of the work time of the material, and observation of all applicable safety precautions. Slowly apply vacuum, up to 28 inches Hg, to a container rated for use and of volume at least four times that of material being deaerated. Apply the vacuum while observing the uncured fluid for presence of bubble formation and increase vacuum slowly enough to avoid rapid foaming. Hold vacuum until presence of air is no longer evident. For more information visit www.avantorsciences.com/nusil and review Mixing and De airing Addition Cure Silicones in our technical resources.

Substrate Considerations

R-2141 cures in contact with most materials common to electronic assembles. Exceptions include butyl and chlorinated rubbers, some Tin condensation cure silicones and unreacted residues of some curing agents. Units being encapsulated or potted should be clean and free of surface contaminates. Containers and dispensers being used should also be clean and dry. Cure inhibition can usually be prevented by washing all containers with solvent or volatizing the contaminant by heating. For further information please see Avoiding Cure Inhibition.

Note: Some bonding application may require the use of a primer. NuSil's CF1-135 silicone primer is recommended. For further information please see Choosing a Silicone Primer / Adhesive System for Engineering Applications.

Packaging	Warranty
400 ml SxS Kit (0.42 kg) 2 Pint Kit (0.91 kg) 2 Gallon Kit (7.28 kg) 10 Gallon Kit (36.4 kg)	6 Months

ROHS AND REACH COMPLIANCE

Please contact NuSil's Regulatory Compliance department with any questions or for further assistance.

SPECIFICATIONS

Do not use the typical properties shown in this technical profile as a basis for preparing specifications. Please contact NuSil for assistance and recommendations in establishing limits for product specifications.

WARRANTY INFORMATION

The warranty period provided by NuSil Technology LLC is 6 months from the date of shipment when stored below 40°C in original unopened containers. Unless NuSil provides a specific written warranty of fitness for a particular use, NuSil's sole warranty is that the product will meet NuSil's then current specification. NuSil specifically disclaims all other expressed or implied warranties, including, but not limited to, warranties of merchantability and fitness for use. The exclusive remedy and NuSil's sole liability for breach of warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted. NuSil expressly disclaims any liability for incidental or consequential damages.

WARNINGS ABOUT PRODUCT SAFETY

NuSil believes, to the best of its knowledge, that the information and data contained herein are accurate and reliable. The user is responsible to determine the material's suitability and safety of use. NuSil cannot know each application's specific requirements and hereby notifies the user that it has not tested or determined this material's suitability or safety for use in any application. The user is responsible to adequately test and determine the safety and suitability for their application and NuSil makes no warranty concerning fitness for any use or purpose. NuSil has completed no testing to establish safety of use in any medical application.

NuSil has tested this material only to determine if the product meets the applicable specifications. (Please contact NuSil for assistance and recommendations when establishing specifications.) When considering the use of NuSil products in a particular application, review the latest Material Safety Data Sheet and contact NuSil with any questions about product safety information.

Do not use any chemical in a food, drug, cosmetic, or medical application or process until having determined the safety and legality of the use. The user is responsible to meet the requirements of the U.S. Food and Drug Administration (FDA) and any other regulatory agencies. Before handling any other materials mentioned in the text, the user is advised to obtain available product safety information and take the necessary steps to ensure safety of use.

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