

# CV-2942

## Thermally conductive, controlled volatility silicone

### DESCRIPTION

- Two-part, gray, thermally conductive silicone
- Based on a dimethyl silicone polymer
- Uses a platinum-catalyzed addition cure
- 20:1 Mix Ratio (Part A:B)

Meets or exceeds the ASTM E 595 low outgas specifications outlined in NASA SP-R-0022A and European Space Agency PSS-014-702, with a TML of  $\leq 1\%$  and CVCM of  $\leq 0.1\%$

### APPLICATION

- For applications requiring low outgassing and minimal volatile condensables under extreme operating conditions to avoid condensation in sensitive devices
- To provide moderate heat transfer between electrical/electronic components and their heat sinks
- Use to adhere openings in modules or housings where grooves and other configurations require a non-flowable to limited flow material

### PROPERTIES

Typical Properties	Average Result	Standard	NT-TM
<b>Uncured:</b>			
Appearance	Gray	ASTM D2090	002
Work Time	2.5 hours	-	008
Tack-Free Time	4.0 hours	ASTM C679	005
<b>Cured: 24 hours minimum at ambient temperature and humidity, then 15 minutes at 150°C (302°F)</b>			
Specific Gravity	2.40	ASTM D792	003
Durometer, Type A	85	ASTM D2240	006
Tensile Strength	650 psi (4.5 MPa)	ASTM D412	007
Elongation	15%	ASTM D412	007
Tear Strength	55 ppi (9.70 kN/m)	ASTM D624	009
Lap Shear Strength (primed w/ CF1-135)	375 psi (2.6 MPa)	ASTM D1002	010
Thermal Conductivity	0.999 W/(mK) ( $24 \times 10^{-4}$ cal/(cm·sec·°C))	ASTM E1530	101
Dielectric Strength	430 volts/mil (16.9 kV/mm)	ASTM D149	-
Volume Resistivity	$1.4 \times 10^{14}$ ohm-cm	ASTM D257, D4496	040

Typical Properties	Average Result	Standard	NT-TM
TGA Take-Off (1% wt. Loss, 10°C/min. in air)	330°C (626°F)	-	-
Coefficient of Linear Thermal Expansion			
-100°C to -50°C	130 (µm/(m°C))	ASTM D3386	-
-30°C to 250°C	185 (µm/(m°C))	ASTM D3386	-
Collected Volatile Condensable Material (CVCM)	0.01%	ASTM E595	072
Total Mass Loss (TML)	0.09%	ASTM E595	072

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.

## INSTRUCTIONS FOR USE

### Mixing

Thoroughly stir Part A prior to weighing for Part B addition as the product separates. Mix 20 parts Part A to 1 part Part B by weight, just prior to use.

### Vacuum Deaeration

Remove air entrapped during mixing by common vacuum deaeration procedure, observing all safety precautions. Slowly apply full vacuum to a container rated for use and at least four times the volume of material being deaerated. Hold vacuum until bulk deaeration is complete.

### Inhibition Concerns

Cures in contact with most materials. Exceptions include butyl and chlorinated rubbers, some RTV silicones and unreacted residues of some curing agents.

Note: Some bonding applications may require the use of a primer. NuSil CF1-135 silicone primer is recommended.

### Adjustable Cure Schedule

Product cures at a wide range of cure times and temperatures to accommodate different production needs. [Contact](#) NuSil for details.

## OPERATING TEMPERATURE

The operating temperature range of a silicone in any application is dependent on many variables, including but not limited to: temperature, time of exposure, type of atmosphere, exposure of the material's surface to the atmosphere, and mechanical stress. In addition, a material's physical properties will vary at both the high and low end of the operating temperature range. Silicone typically remains flexible at

### Packaging

100 Gram Kit (0.101 kg)  
250 Gram Kit (0.255 kg)  
500 Gram Kit (0.502 kg)  
1 Kilogram Kit (1.004 kg)

### Warranty

12 Months

extremely low temperatures and has been known to perform at -50°C (-58°F) as well as resist breakdown at elevated temperatures up to 250°C (482°F). The user is responsible to verify performance of a material in a specific application.

## 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 12 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.

### PATENT / INTELLECTUAL PROPERTY WARNING

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# **Polymer Systems** Technology Limited

## Silicone Sales & Services UK - Ireland - Benelux

© 2022 - **Polymer Systems Technology Limited™**  
Unit 2. Network 4. Cressex Business Park,  
Lincoln Road, High Wycombe, Bucks. HP12 3RF

tel: +44 (0) 1494 446610

web: <https://www.silicone-polymers.com>

email: [sales@silicone-polymers.co.uk](mailto:sales@silicone-polymers.co.uk)

