

# CV-2946

## Thermally conductive, controlled volatility silicone

### DESCRIPTION

- Two-part, white, thermally conductive silicone
- Cures with the addition of heat
- 15:1 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 heat transfer between electrical/electronic components and their heat sinks
- Use to adhere integrated circuit substrates, base plates, heat sinks or where grooves or other configurations require a non-flowable to limited flow material

### PROPERTIES

| Typical Properties   | Average Result  | Standard   | NT-TM |
|--|---|------------|-------|
| <b>Uncured:</b>  |   |            |       |
| Appearance*  | White   | ASTM D2090 | 002   |
| Work Time*   | 2 hours   | -          | 008   |
| Tack-Free Time*  | 4.5 hours   | ASTM C679  | 005   |
| <b>Cured: 7 days minimum at ambient temperature and humidity</b> |   |            |       |
| Specific Gravity*  | 1.53  | ASTM D792  | 003   |
| Durometer, Type A*   | 75  | ASTM D2240 | 006   |
| Tensile Strength*  | 200 psi (1.38 MPa)                                    | ASTM D412  | 007   |
| Elongation*  | 30%   | ASTM D412  | 007   |
| Tear Strength*   | 50 pli (8.8 kN/m)                                     | ASTM D624  | 009   |
| Lap Shear Strength* (primed w/ CF1-135)                          | 160 psi (1.1 MPa)                                     | ASTM D1002 | 010   |
| Young's Modulus  | 3,000 psi (20.7 MPa)                                  | -          | -     |
| Thermal Conductivity* (Tested at 43°C (109°F))                   | 1.49 W/(mK)<br>( $36 \times 10^{-4}$ cal/(cm·sec·°C)) | ASTM E1530 | 101   |
| Dielectric Strength  | 540 volts/mil (21.3 kV/mm)                            | ASTM D149  | -     |

| Typical Properties                              | Average Result                  | Standard         | NT-TM |
|---|---------------------------------|------------------|-------|
| Volume Resistivity                              | 5.3 x 10 <sup>14</sup> ohm · cm | ASTM D257, D4496 | 040   |
| Collected Volatile Condensable Material (CVCM)* | 0.01%                           | ASTM E595        | 072   |
| Total Mass Loss (TML)*                          | 0.05%                           | ASTM E595        | 072   |
| <b>Cured: 2 hours at 65°C (149°F)</b>           |                                 |                  |       |
| Durometer, Type A                               | 85                              | ASTM D2240       | 006   |

\*Properties tested on a lot-to-lot basis. Do not use the properties shown in this technical profile as a basis for preparing specifications. Please [contact](#) NuSil Technology for assistance and recommendations in establishing particular specifications.

## INSTRUCTIONS FOR USE

### Mixing

Thoroughly stir Part A prior to weighing for Part B addition as the product separates. Mix 15 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 the 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 Technology CF1-135 silicone primer is recommended.

### Adjustable Cure Schedule

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

### Packaging

50 Gram Kit  
100 Gram Kit  
250 Gram Kit  
500 Gram Kit

### Warranty

12 Months

temperature range. Silicone typically remains flexible at 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 Technology's Regulatory Compliance department with any questions or for further assistance

## SPECIFICATIONS

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## WARRANTY INFORMATION

The warranty period provided by NuSil Technology LLC (hereinafter "NuSil Technology") is 12 months from the date of shipment when stored below 40°C in original unopened containers. Unless NuSil Technology provides a specific written

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NuSil Technology has tested this material only to determine if the product meets the applicable specifications. (Please [contact](#)

NuSil Technology for assistance and recommendations when establishing specifications.) When considering the use of NuSil Technology products in a particular application, review the latest Material Safety Data Sheet and [contact](#) NuSil Technology 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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