# CV-1142

## Non-corrosive, controlled volatility, RTV silicone adhesive/sealant

### DESCRIPTION

- One-Part, translucent silicone RTV
- Non-slumping in thin sections

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 ≤1% and CVCM of ≤0.1%

### APPLICATION

- For applications requiring extreme low temperature, low outgassing and minimal volatile condensables under extreme operating conditions
- As a sealing, caulking, adhesive or potting material in electronics and space applications requiring minimal outgassing to avoid condensation in sensitive devices
- For bonding and sealing in applications such as overhead or vertical joints that require a non-slumping and one-part material
- For applications requiring a broader operating temperature range

### PROPERTIES

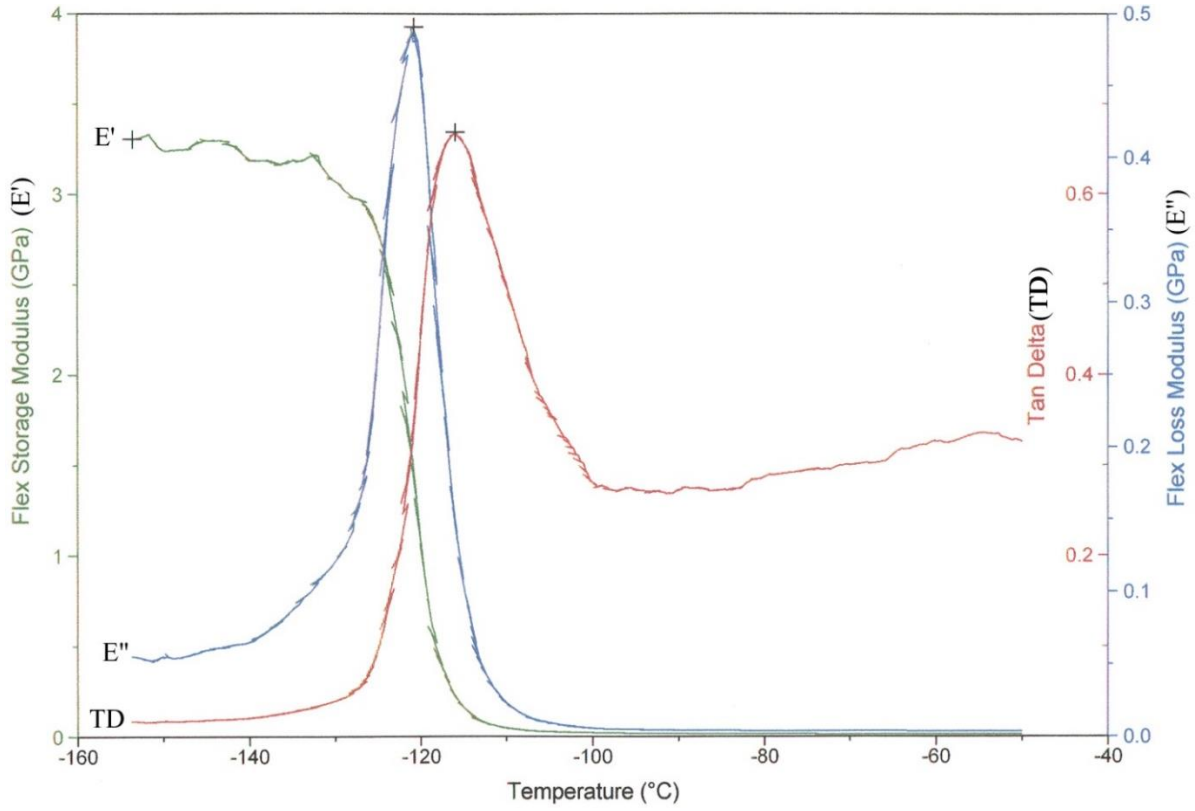
| Typical Properties | Average Result | Standard | NT-TM |
|---|---|---|---|
| **Uncured:** | | | |
| Appearance* | Translucent | ASTM D2090 | 002 |
| Extrusion Rate* (Performed using a cylindrical 1" x 1/8" nozzle and 20 psi air pressure) | 35 g/min | ASTM C603 | 033 |
| Tack Free Time* | 20 minutes | ASTM C679 | 005 |
| **Cured: 7 days minimum at ambient temperature and humidity** | | | |
| Specific Gravity* | 1.11 | ASTM D792 | 003 |
| Durometer, Type A* | 45 | ASTM D2240 | 006 |
| Tensile Strength* | 700 psi (4.8 MPa) | ASTM D412 | 007 |
| Elongation* | 300% | ASTM D412 | 007 |
| Young's Modulus | 250 psi (1.7 MPa) | - | - |
| Dielectric Strength | 1,100 volts/mil (43.3 kV/mm) | - | - |

| Typical Properties | Average Result | Standard | NT-TM |
|---|---|---|---|
| **Coefficient of Linear Thermal Expansion (CTE)** | | | |
| Below Tg (-150°C to -115°C) | 90 ppm/°C (90 µm/m/°C) | ASTM D3386 | - |
| Above Tg (-95°C to 250°C) | 320 ppm/°C (320 µm/m/°C) | ASTM D3386 | - |
| Dynamic Mechanical Analysis (DMA) | See Attached Graph | ASTM D4065 | - |
| Collected Volatile Condensable Material (CVCM)* | 0.04% | ASTM E595 | 072 |
| Total Mass Loss (TML)* | 0.46% | ASTM E595 | 072 |
| **Cured: 10 days at ambient temp. and humidity** | | | |
| Lap Shear Strength* (Unprimed) | 200 psi (1.4 MPa) | ASTM D1002 | 010 |
| Lap Shear Strength* (Primed w/SP-120) | 375 psi (2.6 MPa) | ASTM D1002 | 010 |

* 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.

## DYNAMIC MECHANICAL ANALYSIS (DMA) ASTM D4065

| | Tg | Initial E' | Final E' (Gpa) | Tan Delta above Tg |
|---|---|---|---|---|
| CV-1142 | -120°C | 3.5 Gpa | 0.006 Gpa | 0.3 - 0.5 |



## INSTRUCTIONS FOR USE

Apply CV1-1142, supplied in cartridges, with the use of an appropriate caulking gun.

### Inhibition Concerns

Although generally considered to be non-corrosive to most substrates, the oxime cure system may cause discoloration in the presence of copper or copper alloys.

Note: Some bonding application may require the use of a primer. NuSil Technology SP-120 silicone primer is recommended.

## 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. This type of silicone typically remains flexible at extremely low temperatures and has been known to perform at -120°C (-248°F) as well as resist breakdown at elevated temperatures up to 300°C (572°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

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.

## WARRANTY INFORMATION

The warranty period provided by NuSil Technology LLC (hereinafter "NuSil Technology") is 6 months from the date of shipment when stored below 40°C in original unopened containers. Unless NuSil Technology provides a specific written warranty of fitness for a particular use, NuSil Technology's sole warranty is that the product will meet NuSil Technology's then current specification. NuSil Technology 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 Technology'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 Technology expressly disclaims any liability for incidental or consequential damages.

| Packaging | Warranty |
|---|---|
| 3 Ounce Tube (89 mL)<br>6 Ounce Tube (177 mL) | 6 Months |

## WARNINGS ABOUT PRODUCT SAFETY

NuSil Technology 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 Technology 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 Technology makes no warranty concerning fitness for any use or purpose. NuSil Technology has completed no testing to establish safety of use in any medical application.

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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