

CV15-2500

Controlled volatility silicone

DESCRIPTION

- Two-part, optically clear silicone system
- Low viscosity
- Convenient 1:1 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
- As an embedding or potting compound for electronic assemblies and components to provide protection from extremes in humidity, radiation, thermal stress and mechanical stress
- Suitable as an adhesive in applications such as solar cell arrays where clarity and low volatility are important
- For applications requiring a low viscosity for superior flow

PROPERTIES

Typical Properties	Average Result	Standard	NT-TM
Uncured:			
Appearance	Transparent	ASTM D2090	002
Viscosity, Part A	3,750 cP (3,750 mPas)	ASTM D1084, D2196	001
Viscosity, Part B	2,700 cP (2,700 mPas)	ASTM D1084, D2196	001
Work Time	3 hours	-	008
Tack-Free Time	6 hours	ASTM C679	005
Cured: 15 minutes at 150°C (302°F)			
Specific Gravity	1.02	ASTM D792	003
Durometer, Type A	50	ASTM D2240	006
Tensile Strength	850 psi (5.9 MPa)	ASTM D412	007
Elongation	90%	ASTM D412	007
Lap Shear Strength (primed w/ CF1-135)	225 psi (1.6 MPa)	ASTM D1002	010
Coefficient of Linear Thermal Expansion			-
-80°C to 250°C	400 ($\mu\text{m}/(\text{m}^\circ\text{C})$)	ASTM D3386	

Typical Properties	Average Result	Standard	NT-TM
Extractable Ionics	Below MIL-STD-883E	-	-
Moisture Absorption, % gain after 168 hour exposure at 85°C (185°F) / 85% R.H.	0.11%	-	202
Collected Volatile Condensable Material (CVCM)	0.01%	ASTM E595	072
Total Mass Loss (TML)	0.05%	ASTM E595	072
After High Temperature Exposure: 7 days at 240°C (464°F)			
Lap Shear Strength (primed w/ SP-270) 10 cycles of 5 minutes at 300°C (572°F)	55 psi (0.39 MPa)	ASTM D1002	-
Tensile Strength	175 psi (1.2 MPa)	ASTM D412	007
Elongation	70%	ASTM D412	007
Young's Modulus	480 psi (3.3 MPa)	-	-
Lap Shear Strength (primed w/ SP-270)	300 psi (2.1 MPa)	ASTM D1002	010

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 mix in a convenient 1:1 mix ratio by weight prior to use.

Vacuum Deaeration

Remove air entrapped during mixing by common vacuum deaeration procedure, observing all applicable 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 CF1-135 silicone primer is recommended.

Adjustable Cure Schedule

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

Packaging

50 Gram Kit (0.05 kg)
500 Gram Kit (0.5 kg)

Warranty

12 Months

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 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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