CV4-2500

Controlled volatility RTV silicone

DESCRIPTION

- Two-part, optically clear, 1:1 (A:B) mix ratio silicone system
- Recommended for applications where a 1:1 mix ratio and low viscosity is required.

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 low viscosity for superior flow and low outgassing and minimal volatile condensables to avoid condensation in sensitive devices
- As an embedding or potting compound for electronic assemblies and components to provides protection from extremes in, humidity, radiation, thermal stress and mechanical stress
- Suitable as an adhesive in low-strength applications such as solar cell arrays where clarity and low volatility are important

PROPERTIES

Typical Properties	Average Result	Standard	NT-TM
Uncured:			
Appearance	Clear	ASTM D2090	002
Viscosity, Mixed	1,500 cP (mPas)	ASTM D1084, D2196	001
Viscosity, Mixed after 4 hours	5,000 cP (mPas) maximum	ASTM D1084, D2196	001
Tack Free Time at ambient	15 hours	ASTM C679	005
Tack Free Time at 65°C	12 minutes	ASTM C679	005
Refractive Index at 589 nm	1.41	ASTM D1218, D1747	018
Cured: 1 hour at 65°C (149°F)			
Durometer, Type A	28	ASTM D2240	006
Volume Resistivity*	2 $X10^{14}$ ohm-cm	ASTM D257	153
Thermal Conductivity*	0.15 W/mK	ASTM E1530	101
Dielectric Strength*	670 V/mil (26.1 kV/mm)	ASTM D149	243
Dielectric Constant*, 100 Hz	2.64	ASTM D150	354
Dielectric Constant*, 1 kHz*	2.45	ASTM D150	354

Typical Properties	Average Result	Standard	NT-TM
Dissipation Factor*, 100 Hz	0.00045	ASTM D150	354
Dissipation Factor*, 1 kHz	0.00040	ASTM D150	354
Collected Volatile Condensable Material (CVCM)	0.1% maximum	ASTM E595	072
Total Mass Loss (TML)	1.0% maximum	ASTM E595	072

*These properties are NOT tested on a lot-to-lot basis. Do not use as a basis for preparing specifications. Please contact NuSil Technology for assistance and recommendations in establishing particular specifications.

INSTRUCTIONS FOR USE

Mixing and Vacuum Deaeration

Thoroughly mix Part A with Part B in a 1:1 mix ratio by weight. Remove air entrapped during mixing by common vacuum deaeration procedure. Prior to deaeration, NuSil recommends verification of the work time of the material prior to combining A and B and observe all applicable safety precautions. Slowly apply vacuum, up to 28 inches Hg, to a container rated for use. Material will expand so recommend filling container only approximately ¼ full to allow silicone to expand to a volume at least four times during de-airing. 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.nusil.com and review "Mixing and De airing Addition Cure Silicones" in our technical resources.

Substrate Considerations

CV4-2500 cures in contact with most materials, exceptions include: sulfur-cured organic rubbers, latex, chlorinated rubbers, some RTV silicones and unreacted residues of some curing agents. Epoxies with amine catalysts and solder flux are known to inhibit cures of platinum catalyzed silicones, NuSil recommends taking precaution to minimize contact with said substrates. For more information visit www.nusil.com and review "Avoiding Cure Inhibition" in our technical resources.

Some bonding applications may require the use of a primer. NuSilTM CF2-135 is recommended for most metallic substrates, some plastics and when cure inhibition is observed on substrate. In general, NuSilTM SP-120 is recommended for use with 100% Fluorosilicones. For more information visit www.nusil.com and review "Choosing a Silicone Primer / Adhesive System for Engineering Applications" in the technical resources.

Substrates should be free of dust, oil, and fingerprint soils. Clean substrates using suitable industrial techniques for cleaning devices substrate. If using hydrocarbon solvent cleaning (e.g. acetone, toluene), a final rinse with reagent grade isopropanol is recommended. If using aqueous detergent cleaning, multiple final rinses with de-ionized water or a single rinse with reagent grade isopropanol is recommended. Adhesion to fluoroplastic substrates is generally poor but may be improved with chemical etching or plasma etching of the substrate.

Clean-Up

Remove from surfaces by first wiping off excess uncured material with a suitable, dry, lint-free wipe and then by wiping down the surface with a lint-free wipe soaked with xylene of reagent grade isopropanol. Complete the clean-up process with a final rinse with reagent grade isopropanol. The user is responsible for compliance with all applicable regulations governing disposal of waste materials as indicated in the MSDS. For information on removing cured material please visit www.nusil.com and review "Silicone Removal for Electronic Rework Applications" in our technical resources.

Packaging	Warranty
50 mL SxS Kit 50 Gram Kit 100 Gram Kit 500 Gram Kit	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 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 12 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.

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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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