Product Profile

NuSil SILICONE TECHNOLOGY
Creative Partners in a Material World

CV-2942

Thermally Conductive, Controlled Volatility Silicone

NuSil Technology LLC
1050 Cindy Lane • Carpinteria, CA 93013
805/684-8780 • 805/566-9905 Fax
www.nusil.com • silicone@nusil.com

An ISO 9001 and AS9100
Certified Company

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 ≤1% and CVCM of ≤0.1%

Applications

- 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	Average Result	ASTM	NT-TM
Uncured:			
Appearance*	Gray	D2090	002
Work Time*	2.5 hours	-	008
Tack-Free Time*	4.0 hours	C679	005
Cured: 24 hours minimum @ ambient temp. and humidity, then 15 minutes @ 150°C (302°F)			
Specific Gravity*	2.40	D792	003
Durometer, Type A*	85	D2240	006
Tensile Strength*	650 psi (4.5 MPa)	D412	007
Elongation*	15%	D412	007
Tear Strength*	55 ppi (9.70 kN/m)	D624	009
Lap Shear Strength* (primed w/ CF1-135)	375 psi (2.6 MPa)	D1002	010
Thermal Conductivity*	0.999 W/(mK) (24 x 10^{-4} cal/(cm·sec·°C))	E 1530	101
Dielectric Strength	430 volts/mil (16.9 kV/mm)	D149	-
Volume Resistivity	1.4 x 10^{14} ohm·cm	D257, D4496	040
TGA Take-Off (1% wt. Loss, 10°C/min. in air)	330°C (626°F)	-	-
Coefficient of Linear Thermal Expansion			
Below Tg (-100°C to -50°C)	130 ppm/°C (130 µm/m/°C)	D3386	-
Above Tg (-30°C to 250°C)	185 ppm/°C (185 µm/m/°C)	D3386	-
Collected Volatile Condensable Material (CVCM)*	0.01%	E 595	072
Total Mass Loss (TML)*	0.09%	E 595	072

*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 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.

Packaging

100 Gram Kit
250 Gram Kit
500 Gram Kit
1 Kilogram Kit

Warranty

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 cure times and temperatures to accommodate different production needs. Contact NuSil Technology for details.

Heat and Low-Temperature Resistance

In most applications, silicone may be heated from 180 to 200°C for a year, or even up to 450°C for short periods, without any appreciable effect on physical properties. Silicone also demonstrates flexibility at extreme low temperatures, with a stiffening temperature range of -50 to -70°C.

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. The user is responsible to verify performance of a material in a specific application.

RoHS and REACh Compliance

CV-2942 is compliant with the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHs) regulation contained in Article 4(1) of the European Parliament and Council's Directive 2002/95/EC. RoHS mandates that manufacturers restrict the use of lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls, polychlorinated biphenyls, and polybrominated diphenyl ethers in electrical and electronic equipment.

CV-2942 is also compliant with the Registration, Evaluation, and Authorization of Chemicals (REACh) regulation (European Union 1907/2006). CV-2942 does not contain any of the 16 chemicals identified as Substances of Very High Concern (SVHC) by the European Chemicals Agency (ECHA), which oversees 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.

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.

Patent / Intellectual Property Warning

NuSil Technology disclaims any expressed or implied warranty against the infringement of any domestic or international patent/intellectual property right. NuSil Technology does not warrant the use or sale of the products described herein will not infringe the claims of any domestic or international patent/intellectual property right covering the product itself, its use in combination with other products, or its use in the operation of any process.