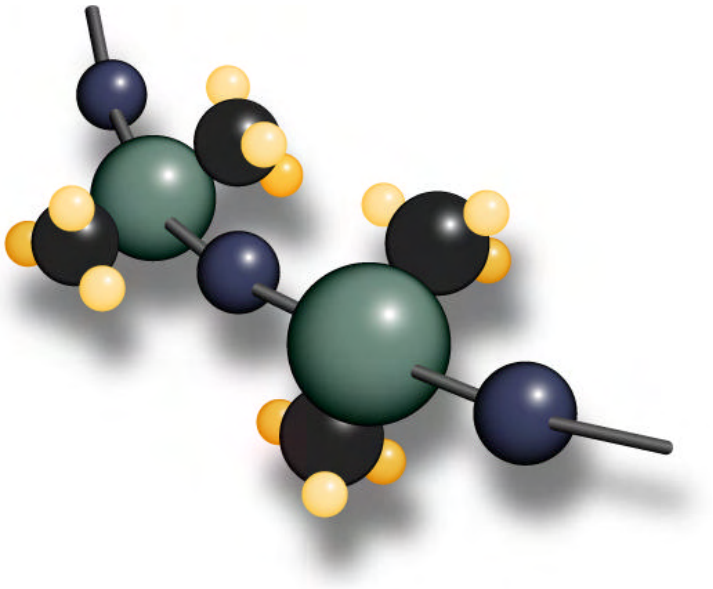
Polymer Systems Technology Limited

UK & Ireland Distributor

Unit 2. Network 4. Cressex Business Park,
Lincoln Road, High Wycombe, Bucks. HP12 3RF
Phone +44 (0) 1494 446610
Fax: +44 (0) 1494 528611
Web: http://www.siliconepolymers.co.uk
Email: sales@silicone-polymers.co.uk



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Product Profile

LIGHTSPAN

LS-3249

Optically Clear Silicone Gel

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

- A two-part, encapsulation gel
- Extended work time
- 1.49 refractive index for matching silica
- 1:1 Mix Ratio (Part A: Part B)

Applications

- For protection of sensitive photonics assemblies from mechanical shock, thermal shock, dust, and ambient atmosphere
- Extended work time allows voids in complex assemblies to fill in and permits time for any trapped air bubbles to float to the fluid surface and escape

Properties	Average Result	ASTM	NT-TM
Uncured:			
Appearance	Transparent	D2090	002
Viscosity (V1) tested 30 minutes after catalyzation	400 cP (400 mPas)	D1084, D2196	001
Viscosity (V2) tested 5 hours after catalyzation	450 cP (450 mPas)	D1084, D2196	001
Viscosity (V2/V1)	1.1	D1084, D2196	001
Controlled Stress Rheometer (G' > G" @ 80°C)	110 seconds	-	124
Cured: 60 minutes @ 75°C. Stabilize for 2 hours minimum @ ambient temperature and humidity			
Durometer, Type 000	60	D2240	006
Cured: 48 hours minimum @ ambient temperature and humidity			
Durometer, Type 000	60	D2240	006
Refractive Index, 589 nm	1.49	D1218, D1747	018
UV/Visible Spectrophotometery @ 400 nm	95 %T	E275	100

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

The product is available in ready-to-use cartridges that mix the material automatically as it is dispensed without need for vacuum degassing. It is also available in individual Part A and Part B containers for mixing by weight.

Deaeration

The assembly should self-deaerate due to the product's long room temperature work time and low viscosity, as long as no pockets of air are trapped beneath mechanical parts. If accelerated deaeration is required, the assembly may be vacuum deaerated using a pressure of 635 mmHg (25 inHg) or greater. 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 bubbles at the fluid surface collapse and are no longer visible.

Packaging

50 mL SxS Kit
50 Gram 2 Part Kit
2 Pint Kit

Warranty

6 Months

Substrate Considerations

LS-3249 cures in contact with most properly cleaned substrate materials including optical glasses, optical plastics, and photonic semiconductors. Adhesion to fluoroplastic substrates is generally poor but may be improved with chemical etching or plasma etching of the substrate. Substrates to avoid include certain butyl, nitrile, chlorinated, and EPDM elastomers, certain plastics with leachable plasticizers, and the cure residues of certain adhesives including UV-cured epoxies and amine-cured epoxies.

Substrate Preparation
Substrates should be free of dust, oil, and fingerprint soils. Clean substrates using suitable industrial techniques for cleaning electro-optics. 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. Obtain improved gel adhesion to some substrates using suitable primers such as NuSil Technology LS-3200 series Optical Primers.

Adjustable Cure Schedule
Product cures at a wide range of cure times and temperatures to accommodate different production needs. Contact NuSil Technology for details.

Clean-Up
Remove from surfaces by first wiping off excess gel with a suitable, dry, lint-free wipe and then by wiping down the surface with a lint-free wipe soaked with acetone. If the surface material is incompatible with acetone, use isopropanol. Complete the clean-up process with a final rinse with reagent grade isopropanol if removal of acetone residues is necessary. The user is responsible for compliance with all applicable regulations governing disposal of waste materials as indicated in the MSDS.

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 –40ºC (40°F) as well as resist breakdown at elevated temperatures up to 200ºC (392°F). The user is responsible to verify optical and mechanical performance of a material in a specific application.

RoHS and REACh Compliance

LS-3249 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.

LS-3249 is also compliant with the Registration, Evaluation, and Authorization of Chemicals (REACh) regulation (European Union 1907/2006). LS-3249 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.