Polymer Systems Technology Limited

UK & Ireland Distributor

NuSil SILICONE TECHNOLOGY®
Creative Partners in a Material World

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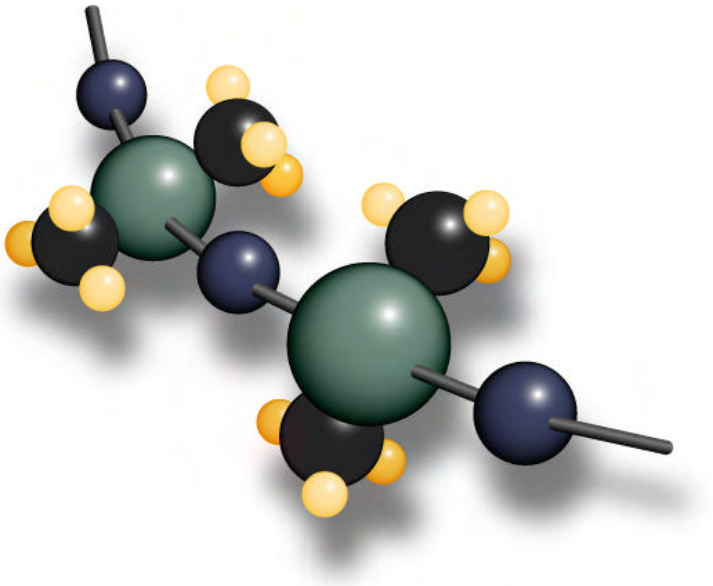

Product Profile

LIGHTSPAN

LS-3351

Clear Encapsulation Gel

NuSil Technology LLC
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An ISO 9001 and AS9100 Certified Company

Description

- A two-part, encapsulation gel
- 1.51 refractive index
- 1:1 mix ratio

Applications

- For protection of sensitive photonics assemblies from mechanical shock, thermal shock, dust, and ambient atmosphere
- For LEDs and display elements, ideal for phosphor mixing
- For applications requiring an operating temperature range of -40°C to 200°C (-40°F to 392°F) or for soldering operations up to 260°C (500°F) for 1 to 2 minutes

Typical Properties	Result	Metric Conv.	ASTM	NT-TM
Uncured:				
Appearance	Transparent	-	D2090	002
Viscosity, Part A	7,500 cP	7,500 mPas	D1084, D2196	001
Viscosity, Part B	4,600 cP	4,600 mPas	D1084, D2196	001
Viscosity, Mixed	6,000 cP	6,000 mPas	D1084, D2196	001
Worktime, 1.2x initial mixed viscosity	160 minutes	-		124
Refractive Index	1.51	-	D1218, D1747	018
Cured: 1 hour @ 100°C (212°F)				
Durometer, Type 000	55	-	D2240	006
Moisture Absorption, % gain after 168 hour exposure @ 85°C (185°F) / 85% R.H.	<0.4%	-	-	202
Thermooptic Coefficient	-3.69×10^{-4}/°C	-	-	-
Refractive Index vs. Wavelength	See chart	-	-	-
Optical Absorption vs. Wavelength	See chart	-	-	-

Instructions for Use

The product is supplied in ready-to-use cartridges that mix the material automatically as it is dispensed without need for vacuum degassing.

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
20 Gram Kit
2 Pint Kit (910 g)

Warranty

6 Months

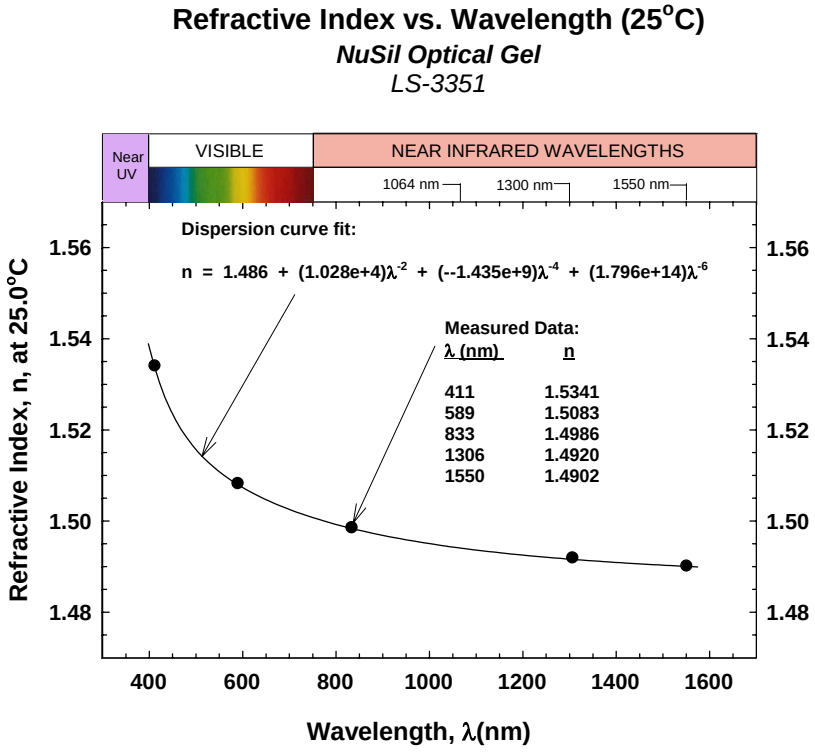
Cure Inhibition

LS-3351 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.

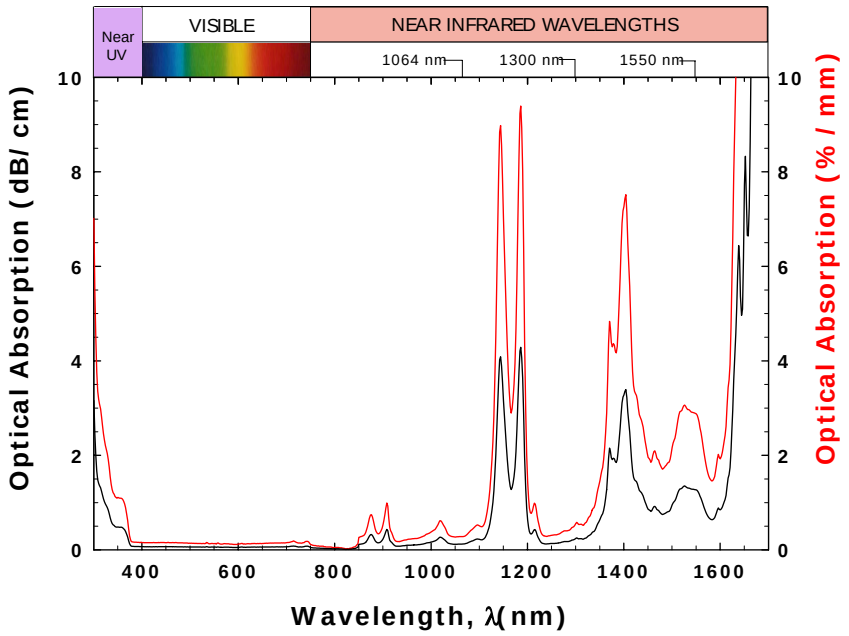
Substrate Preparation
Substrates should be free of dust, oil, and fingerprint soils. Clean substrates using suitable industrial techniques for cleaning electro-optics. If using hydrocarbon solvent cleaning (e.g. acetone, toluene), a final rinse with reagent grade isopropanol is recommended. If using 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 LS-3200 series Optical Primers. Adhesion to fluoroplastic substrates is generally poor but may be improved with chemical etching or plasma etching of the substrate.

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.



Optical Absorption vs. Wavelength (25°C)
NuSil Optical Gel
LS-3351



Warnings About Product Safety

NuSil Technology believes that the information and data contained herein are accurate and reliable. However, 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 Sheets 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, obtain available product safety information and take the necessary steps to ensure safety of use.

Specifications

Do not use the typical properties shown in this technical profile as a basis for preparing specifications. Please contact NuSil Technology for assistance and recommendations in establishing particular specifications.

Patent Warning

NuSil Technology disclaims any expressed or implied warranty against the infringement of any patent. NuSil Technology does not warrant the use or sale of the products described herein will not infringe the claims of any United States' or other country's patents covering the product itself, its use in combination with other products or its use in the operation of any process.

Warranty Information

NuSil Technology's warranty period 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 any other expressed or implied warranty, including 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.