

# LS1-3443

## Optically clear silicone gel

### DESCRIPTION

- A two-part optically clear gel
- A 1.43 refractive index at 589 nm
- 1:1 Mix Ratio (Part A:B)

### APPLICATION

- For applications requiring index matching at 1.43
- For protection of sensitive photonics assemblies from mechanical shock, thermal shock, dust, and ambient atmosphere

### PROPERTIES

Typical Properties	Average Result	Standard	NT-TM
<b>Uncured:</b>			
Appearance	Transparent	ASTM D2090	002
Specific Gravity*	1.00 Part A / 0.99 Part B	ASTM D792	003
Viscosity, Mixed	650 cP	ASTM D1084, D2196	001
Viscosity, Mixed after 90 minutes	~ 2,500 cP	ASTM D1084, D2196	001
Refractive Index*	1.43	ASTM D1218, D1747	018
<b>Cured: 3 Hours at 85°C</b>			
Penetration – GCA Penetrometer, 6.35 mm / 19.5 g, 5 seconds	6 mm	ASTM DC-CTM 813	017

\* The above 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.

\*\* Above are average results of properties tested on pilot batches of LS1-3443. The batches tested and the results provided above are believed to be representative of the formulation and processing in the future. However these values may shift slightly as the material is commercialized.

## INSTRUCTIONS FOR USE

### Processing

Thoroughly mix Part A with Part B in a 1:1 mix ratio by weight or volume. Airless mixing, metering and dispensing equipment is recommended for production processing.

### Mixing & 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 Technology recommends verification of the work time of the material, and observation of all applicable safety precautions. Slowly apply vacuum, up to 28 inches Hg, to a container rated for use and of volume at least four times that of material being deaerated. 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](http://www.nusil.com) and review [Mixing and De-airing Addition Cure Silicones](#) in our technical resources. NuSil Technology recommends selecting side by side kit packaging (50 ml cartridge) if unable to perform the de-airing procedure above due to the pot life of the material.

### Substrate Considerations

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 adhesion to some substrates using suitable primers such as NuSil Technology's CF1-135 primer. 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](http://www.nusil.com) and review [Silicone Removal for Electronic Rework Applications](#) in our technical resources.

### Packaging

50 ml SxS Kit  
2 Pint Kit (910 g)  
2 Gallon Kit (7.28 kg)  
10 Gallon Kit (36.4 kg)

### Warranty

12 Months

### Adjustable Cure Schedule

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

## 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 -50°C (-58°F) as well as resist breakdown at elevated temperatures up to 200°C (392°F). The user is responsible to verify optical and mechanical performance of a material in a specific application.

## 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.

## 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

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