



BERGQUIST LIQUI FORM TLF LF3500

BERGQUIST LIQUI-FORM 3500
June 2019

PRODUCT DESCRIPTION

Thermally Conductive, One-Part, Liquid Formable Gel Material.

Technology	Silicone
Appearance	Gray
Cure	Pre-cure gel
Application	Thermal management, TIM (Thermal Interface Material)
Operating Temperature Range	-60 to 200°C
UL Flammability Rating	UL 94 V-0

FEATURES AND BENEFITS

- Thermal Conductivity: 3.5 W/m-K
- Dispensable pre-cured gel
- Stable viscosity in storage and in the application
- Excellent chemical stability and mechanical stability

BERGQUIST LIQUI FORM TLF LF3500 is a high conductivity gel thermal interface material designed for demanding applications that require a balance between dispensability and low component stress during assembly and also in the application.

BERGQUIST LIQUI FORM TLF LF3500 is a one-part, highly conformable gel with thixotropic properties. The material is precured and requires no curing, mixing or refrigeration. Its unique formulation assures excellent thermal performance, low applied stress and reliable long-term performance.

BERGQUIST LIQUI FORM TLF LF3500 is thixotropic and has a natural tack ensuring it forms around the component and stays in place in the application.

TYPICAL APPLICATIONS

- Handheld devices
- Bare die to heat spreader lid
- Filling various gaps between heat-generating devices to heat sink and housing
- Devices requiring low assembly pressure
- High value assemblies with rework
- BGA, PGA, PPGA

TYPICAL PROPERTIES OF UNCURED MATERIAL

Density, ASTM D792, g/cc	3.1
Shelf Life @ 25°C, days	365

TYPICAL PROPERTIES OF CURED MATERIAL

Physical Properties

Dispense Rate, grams/ minute ⁽¹⁾	40
Volumetric Expansion, @ 25 to 275°C, ASTM E228 200 modified, ppm/°C	

Electrical Properties

Dielectric Strength, ASTM D149, V/mm	10,000
Dielectric Constant, ASTM D150 @ 1,000Hz	8.1
Volume Resistivity, ASTM D257, ohm-meter	1×10 ¹¹

Outgassing Properties

Total Mass Loss, %, ASTM E595	0.14
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Thermal Properties

Thermal Conductivity, ASTM D5470, W/(m-K)	3.5
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Thermal Performance vs. Pressure

Thermal Impedance, ASTM D5470, °C-in ² /W ⁽²⁾	
@ 10 psi	0.07
@ 25 psi	0.07
@ 50 psi	0.06

(1) 30cc syringe, 90 psi (621 kPa), 0.100" orifice no attachment

(2) The ASTM D5470 test fixture was utilized. The recorded values include the interfacial thermal resistance. The values are provided for reference only. Actual application performance is directly related to the surface roughness, flatness and pressure applied

GENERAL INFORMATION

For safe handling information on this product, consult the Safety Data Sheet, (SDS).

Not for product specifications

The technical data contained herein are intended as reference only. Please contact your local quality department for assistance and recommendations on specifications for this product.

The above cure profiles are guideline recommendations. Cure conditions (time and temperature) may vary based on customers' experience and their application requirements, as well as customer curing equipment, oven loading and actual oven temperatures.

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CONFIGURATIONS AVAILABLE

BERGQUIST LIQUI FORM TLF LF3500 is available with or without glass beads. Glass beads are available in 7 mil configuration.

BERGQUIST LIQUI FORM TLF LF3500 is supplied in:

Cartridges	30cc, 150cc, 300cc, 600cc
Pail	4.3gallon

THAWING:

1. If refrigerated, allow container to reach room temperature before use.
2. DO NOT open the container before contents reach 25°C temperature. Any moisture that collects on the thawed container should be removed prior to opening the container.

STORAGE

Store product in the unopened container in a dry location. Storage information may be indicated on the product container labeling.

Optimal Storage: 5 to 25°C for a 365 days shelf life, in sealed containers with moisture barrier packaging.

Conversions

$(^{\circ}\text{C} \times 1.8) + 32 = ^{\circ}\text{F}$
 $\text{kV/mm} \times 25.4 = \text{V/mil}$
 $\text{mm} / 25.4 = \text{inches}$
 $\text{N} \times 0.225 = \text{lb/F}$
 $\text{N/mm} \times 5.71 = \text{lb/in}$
 $\text{psi} \times 145 = \text{N/mm}^2$
 $\text{MPa} = \text{N/mm}^2$
 $\text{N}\cdot\text{m} \times 8.851 = \text{lb}\cdot\text{in}$
 $\text{N}\cdot\text{m} \times 0.738 = \text{lb}\cdot\text{ft}$
 $\text{N}\cdot\text{mm} \times 0.142 = \text{oz}\cdot\text{in}$
 $\text{mPa}\cdot\text{s} = \text{cP}$

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The information provided in this Technical Data Sheet (TDS) including the recommendations for use and application of the product are based on our knowledge and experience of the product as at the date of this TDS. The product can have a variety of different applications as well as differing application and working conditions in your environment that are beyond our control. Henkel is, therefore, not liable for the suitability of our product for the production processes and conditions in respect of which you use them, as well as the intended applications and results. We strongly recommend that you carry out your own prior trials to confirm such suitability of our product.

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