



# BERGQUIST LIQUI FORM TLF LF3500

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## PRODUCT DESCRIPTION

BERGQUIST LIQUI FORM TLF LF3500 is a thermally conductive, one-part liquid formable gel material.

<b>Technology</b>	Silicone
<b>Appearance</b>	Gray
<b>Cure</b>	Pre-cure gel
<b>Application</b>	Thermal management TIM (Thermal interface material)
<b>Operating temperature range</b>	-60 to 200°C
<b>UL flammability rating</b>	UL 94 V-0

## Features and benefits

- Thermal conductivity: 3.5 W/m-K
- Dispensable pre-cured gel
- Stable viscosity in storage and in applications
- 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
- 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	104

## TYPICAL PROPERTIES OF CURED MATERIAL

### Physical properties

Dispense rate, grams/minute <sup>(1)</sup>	40
Volumetric expansion, @ 25 to 275°C, ASTM E228 modified, ppm/	200

### Electrical properties

Dielectric strength, ASTM D149, V/mm	10,000
Dielectric constant, ASTM D150 @ 1,000Hz	8.1
Volume resistivity, ASTM D257, ohm-meter	1x10 <sup>11</sup>

### 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 <sup>2</sup> /W <sup>(2)</sup>	
@ 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.

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.

## GENERAL INFORMATION

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

### 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	4.3 gallon



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

Optimal storage: 5 to 25°C for a 104 days shelf life, in sealed containers with moisture barrier packaging.

**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 the specifications of this product.

**Conversions**

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

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