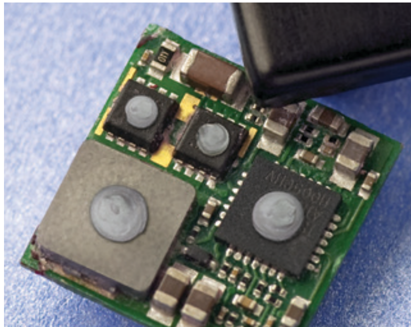
BERGQUIST® *LIQUI-FORM* TLF LF2000

Formerly known as *LIQUI-FORM* 2000

Thermally Conductive, One-Part, Liquid Formable Material

Features and Benefits

- Thermal conductivity: 2.0 W/m-K
- Applies very low force on components during assembly
- Low volumetric expansion
- Excellent chemical and mechanical stability even at higher temperatures
- No curing required
- Stable viscosity in storage and in the application



BERGQUIST® *LIQUI-FORM* TLF LF2000 is a high thermal conductivity liquid formable material designed for demanding applications requiring a balance between dispensability, low component stresses during assembly and ease of rework.

BERGQUIST® *LIQUI-FORM* TLF LF2000 is a highly conformable, shear-thinning material which 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 LF2000 is thixotropic and has a natural tack, ensuring it forms around the component and stays in place in the application.

TYPICAL PROPERTIES OF BERGQUIST® *LIQUI-FORM* TLF LF2000

PROPERTY	IMPERIAL VALUE	METRIC VALUE	TEST METHOD
Color	Grey	Grey	Visual
Low Shear Viscosity (Pa-s) at 0.01 s^{-1} (1)	20,000	20,000	ASTM D4473
High Shear Viscosity (Pa-s) at 300 s^{-1} (2)	110	110	ASTM D2196
Volumetric Expansion 25 to 275°C (ppm/K)	600	600	ASTM E228 modified
Outgassing (% Total Mass Loss)	0.53	0.53	ASTM E595
Density (g/cc)	2.8	2.8	ASTM D792
Continuous Use Temp. (°F) / (°C)	-76 to 392	-60 to 200	—
Shelf Life at 25°C (months)	6	6	—
ELECTRICAL			
Dielectric Strength (V/mil) / (V/mm)	250	10,000	ASTM D149
Dielectric Constant (1,000 Hz)	8.0	8.0	ASTM D150
Volume Resistivity (Ω-m)	10^9	10^9	ASTM D257
Flame Rating	V-O	V-O	UL 94
THERMAL			
Thermal Conductivity (W/m-K)	2.0	2.0	ASTM D5470

THERMAL PERFORMANCE VS. PRESSURE			
Pressure (psi)	10	25	50
Thermal Impedance (°C-in.^{2}/W) (3)	0.13	0.12	0.12

1) Parallel Plate Rheometer, See Product Management *LIQUI-FORM* Application Note on our website under Liquid Thermal Interface Materials.
2) Capillary Rheometer, See Product Management for Viscosity and Dispensing Application Note.
3) The ASTM D5470 test fixture was used. 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.

Typical Applications Include:

- Bare die to heat spreader lid
- Filling various gaps between heat-generating devices to heat sinks and housings
- Devices requiring low assembly pressure
- BGA, PGA and PPGA components

Configurations Available:

- Supplied in 30 cc or 600 cc cartridges or 5-gallon pails