



**HIGH-PERFORMANCE SCREEN PRINTABLE PHASE CHANGE MATERIAL**

Tpcm™ 580SP is an exceptionally high-performance, screen printable or stencilable thermal interface material (TIM) which proves to be a great alternative to grease. It contains a solvent to assist in processing, which allows for wetting of the surface. However, after the solvent dries, it will be moistureless to the touch; therefore eliminating the mess associated with grease. Once the solvent is removed, Tpcm™ 580SP begins to soften and flow at temperatures around 45°C, filling the microscopic irregularities of the components it contacts.

**FEATURES AND BENEFITS**

- Minimizes contact thermal resistance by filling the microscopic irregularities of the components it touches.
- Because Tpcm™ 580SP softens but does not fully change states, it is designed to minimize migration (pump out) under thermal cycling from room temperature to chip device operating temperatures.
- Available in a 0.5 kg or 1.0 kg can for easy manual screen printing and large volume automatic application.

**APPLICATIONS**

- High Frequency Microprocessors
- Notebook PCs
- Desktop PCs
- Computer Servers
- DC/DC Converters
- Memory Modules
- Cache Chips
- IGBTs
- Automotive
- Optical

**SPECIFICATIONS**

	VALUE	TEST METHOD
Color	Grey	Visual
Construction	Paste	
Viscosity at 25°C (Pa-s) (cPs)	25 50,000 - 100,000	Rheometer - Laird Technologies' custom method Brookfield, Spindle T-D, 10 rpm
Specific Gravity (g/cc)	2.48 (without solvent) 2.34 (with solvent)	Helium Pycnometer
Operating Temperature Range (°C)	- 45 to 125	Thermal Shock*
Softening Range (°C)	45 to 50	
Shelf Life (months)	6	
Thermal Conductivity (no solvent) (W/mK)	4	Hot Disk Thermal Contants Analyzer
Thermal Impedance (°C-in <sup>2</sup> /W, °C-cm <sup>2</sup> /W) @ 50 psi (345 kPa)	0.012, 0.077	ASTM D5470 (pressure modified)

\*Based on 2000 cycles. See data chart on reverse side

**global solutions: local support.™**

Americas: +1.888.246.9050  
Europe: +46.31.704.67.57  
Asia: +86.755.2714.1166

CLV-customerservice@lairdtech.com  
[www.lairdtech.com/thermal](http://www.lairdtech.com/thermal)

# Tpcm™ 580SP Series

## Screen Printable Phase Change Material

### Preliminary

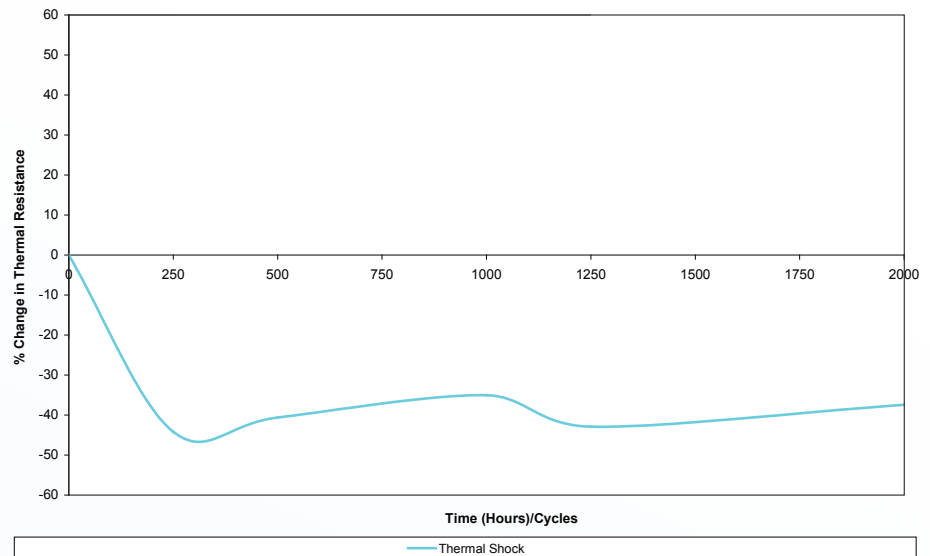
**Storage:** Store from 5°C to 35°C with a maximum humidity of 50%. Do not store in a freezer.

**Application:**

\*Mix can thoroughly prior to use, best results using a jar roller at a 20 to 30 degree angle for 30 minutes or longer. A stencil or screen mesh of 61 TPI (threads per inch) or less is recommended for easiest application, however the phase change has been successfully applied using up to a 140 mesh screen (the higher the number = smaller screen opening).

\*Solvent evaporates within two hours at 60°C, or 8 hours at room temperature. After solvent evaporation, the Tpcm™ 580SP will be firm and dry to the touch.

**% Change in Thermal Resistance Vs. Time**



After 2,000 cycles from - 55°C to 125°C, Tpcm™ 580SP shows a decrease in thermal resistance from the initial thermal resistance. The stability of Tpcm™ SP over 2,000 cycles indicates the material will be stable in normal application.

global solutions: local support.™

Americas: +1.888.246.9050

Europe: +46.31.704.67.57

Asia: +86.755.2714.1166

CLV-customerservice@lairdtech.com

www.lairdtech.com/thermal

THR-DS-TPCM-580SP 0511

Any information furnished by Laird Technologies, Inc. and its agents is believed to be accurate and reliable. All specifications are subject to change without notice. Responsibility for the use and application of Laird Technologies materials rests with the end user, since Laird Technologies and its agents cannot be aware of all potential uses. Laird Technologies makes no warranties as to the fitness, merchantability or suitability of any Laird Technologies materials or products for any specific or general uses. Laird Technologies shall not be liable for incidental or consequential damages of any kind. All Laird Technologies products are sold pursuant to the Laird Technologies' Terms and Conditions of sale in effect from time to time, a copy of which will be furnished upon request. © Copyright 2011 Laird Technologies, Inc. All Rights Reserved. Laird, Laird Technologies, the Laird Technologies Logo, and other marks are trade marks or registered trade marks of Laird Technologies, Inc. or an affiliate company thereof. Other product or service names may be the property of third parties. Nothing herein provides a license under any Laird Technologies or any third party intellectual property rights. A16425-00 Rev A