



Innovative **Technology**
for a **Connected** World

Tpcm™ 780SP Series

Screen Printable Phase Change Material

Preliminary



HIGH PERFORMANCE SCREEN PRINTABLE PHASE CHANGE MATERIAL

Tpcm™ 780SP 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™ 780SP 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™ 780SP 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 applications.

APPLICATIONS

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

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SPECIFICATIONS

	VALUE	TEST METHOD
Color	Grey	Visual
Construction	Paste	
Viscosity at 25°C (Pa-s) (cPs)	35 50,000 - 100,000	Rheometer - Laird Technologies' custom method Brookfield, Spindle T-D, 10 rpm
Specific Gravity (g/cc)	2.48 (without solvent) 2.20 (with solvent)	Helium Pycnometer
Softening Range (°C)	45 to 70	
Shelf Life (months)	6	
Thermal Conductivity (no solvent) (W/mK)	5.4	Hot Disk Thermal Contants Analyzer
Thermal Impedance (°C-in ² /W, °C-cm ² /W) @ 50 psi (345 kPa)	0.004, 0.025	ASTM E5470 (pressure modified)
Outgassing TML	~0.51%	ASTM E595
Outgassing CVCM	~0.20%	ASTM E595

Storage: Store from 5°C to 35°C with a maximum humidity of 50% and with lid tightly closed. Do not store in a freezer or refrigerator at 5°C or below.

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™ 780SP will be firm and dry to the touch.

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