

TPM550

Thermally Conductive Phase Change Material

TPM550 is a superior, screen printable, thermally conductive phase change material. TPM550 contains a solvent to ensure complete wetting of the surface and to assist in processing, the material will dry once the solvent has evaporated. The material will begin to soften and flow when exposed to temperatures above 45°C to ensure the material conforms to the contours of a surface to ensure maximum heat dissipation away from hot spots.

- Suitable for screen printing applications; excellent wettability
- Conforms well to complex geometries
- Excellent thermal conductivity; 5.5 W/m.K to minimise contact thermal resistance
- Low phase change temperature; 45°C

Approvals	RoHS Compliant (2015/863/EU):	Yes
Typical Properties	Colour:	Grey
	Density @ 20°C (g/ml):	2.48
	Dry Time @ 20°C	10 hours
	Dry Time @ 60°C	2 hours
	Phase Change Temperature:	45°
	Thermal Conductivity:	5.5 W/m.K
	Temperature Range:	-40°C to +125°C
	Thermal Resistance @ 70°C, 50psi:	0.012 °C.in ² /W
	Minimum Bond Line Thickness:	25µm
	Shelf Life:	12 months

Directions for Use

Ensure surfaces are clean, free from dust, grease and other contaminants before use. Mix well by hand or jar roller before using.

A uniform coating of 0.05 mm to 0.255 mm thickness should be applied. For high volume applications stencilling or screening is recommended, for the best results use a 61 (or less) threads per inch screen. Ensure that the entire interface is covered to avoid hot-spots from forming. Any excess paste squeezed out during the mounting process should be removed. In most cases allow for up to a 20% reduction in thickness due to material retention on a screen printer and another 20% reduction for solvent evaporation. For example: Initial thickness on a screen = 0.2mm, 20% retain on screen = 0.16mm, 20% reduction from solvent evaporation = 0.13mm.

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Place a dust cover over the surface during the drying stage to avoid contamination to the surface. TPM550 is touch dry within 2 hours (60°C), or 10 hours (20°C), a thickness of greater than 0.1mm it is suggested to heat to 60°C to ensure complete solvent evaporation. TPM550 can be reworked with an appropriate cleaning solvent like IPA.

Optimal thermal performance is achieved when used in constant pressure applications, with a pressure of 15psi or greater and an operating temperature above 50°C.

Store between 5°C to 35°C and below 50% relative humidity. Store upright, away from corrosive materials. Ensure the lid is clean and closed tightly to ensure a tight seal.

Typical Applications

TPM550 is recommended for constant pressure applications such as springs. A minimum pressure of 5psi is recommended. Optimal thermal performance is reached at a pressure of 15psi and a temperature of above 50°C. Such applications can include, high frequency microprocessors, notebook and desktop PCs, computer servers, DC/DC converters, memory modules, cache chips, IGBTs, automotive.

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