



Key Features and Benefits

- **Silicone-free formulation with low volatile content**
- **High thermal conductivity and low thermal resistance**
- **Excellent resistance to high & low temperatures and excellent weatherability**
- **Outstanding interfacial wettability**
- **Stable physical and chemical properties, non-corrosive**

Description

PAKCOOL® PC-5440 is a high-performance thermal phase change material with a phase change temperature of 50-60°C. It is putty-like at room temperature and can be manually shaped or dispensed. When heated above the phase change temperature, it turns into grease form with excellent wettability and compressibility. Being a reworkable phase change material, it fills gaps between heat-generating parts and heat sinks, effectively reducing interfacial thermal resistance and improving heat dissipation efficiency. It rapidly lowers the operating temperature of electronic components, extending service life and enhancing equipment reliability.

Besides favorable thermal conductivity and phase change property, no pumping out, drying or oil bleeding occurs during application, combining the reliability and easy operation of thermal grease. Moreover, harmless solvent can be blended to prepare room-temperature grease-type product suitable for screen printing and other processing.

Applications

- **Microprocessors**
- **IGBTs**
- **Integrated Circuits**
- **Power converters**

Precautions

Product viscosity varies with temperature changes, which does not affect performance. Constant-temperature operation is recommended.

Application Guidelines

Under certain pressure, coated material softens and flows above phase change temperature to fit component and radiator profiles, fill tiny gaps and squeeze out trapped air bubbles, forming an efficient thermally conductive layer.

Technical Parameters

Typical Properties	PC-5440	Test Methods
Substrate	Silicone-free phase change material	--
Appearance	Grey putty-like	Visual
Phase Transition Temperature (°C)	50-60	DSC
Thermal Conductivity (W/m·k)	≥4.0	ASTM D5470
Thermal impedance (K-in ² /W @30psi)	≤0.03	ASTM D5470
Density (g/cm ³)	3.2±0.1	ASTM D792
Dielectric Strength (kv/cm)	≥16	ASTM D149
Volume Resistivity (Ω·cm)	≥10 ¹³	ASTM D257
Shelf Life (2~8°C) in jar/barrel	12 months	---
Continuous Use Temperature (°C)	-40~+150	--

Data is available only for guidance and does not as a product specification.

Packaging storage and Transportation

- PAKCOOL@SPC-5430 is offered in a 1Kg, 5Kg and 20Kg barrel or 330mL, 55mL tube or customizable according to customer requirements.
- Non-toxic, non-flammable material, Should be stored at 2°C-8°C. Before use, acclimate the product at 25°C for at least 4 hours to ensure the material reaches the ambient usage temperature.
- It can be transported as a general liquid chemical

All technical data are obtained under laboratory conditions. Actual performance may differ due to varying application environments and processes. Users must conduct pre-testing to confirm product suitability for intended use. Contact our technical department for support if any problems arise during application.