

## Key Features and Benefits

- **Continuous Liquid Phase Mixing (LPM) process for superior filler dispersion**
- **High thermal conductivity with excellent interfacial wettability**
- **Excellent resistance to high & low temperatures and excellent weatherability.**
- **Stable physical and chemical properties, non-corrosive**

## Description

PAKCOOL® SPC-5430 is produced by liquid-liquid mixing of phase-change materials, thermally conductive fillers, and various additives to enhance dispersion and uniformity. This process provides a finer, smoother appearance, and superior form and performance stability. The product is a reworkable phase-change material designed for filling the gap between heat-generating components and heat sinks. It effectively reduces interfacial thermal resistance, improves heat dissipation efficiency, and rapidly lowers the temperature of electronic components, thereby extending their service life and enhancing reliability.

In addition to excellent thermal conductivity, SPC-5430 also inherits the advantages of phase-change materials — no pump-out, drying, or oil bleeding during use — while maintaining the reliability and ease of application of thermal grease. This product is formulated specifically for screen printing applications and not recommended for in-line dispensing processes.

## Applications

- **Microprocessors**
- **Multichip modules**
- **IGBTs**
- **Integrated Circuits**
- **Active heat sinks in electronic applications**

## Application Guidelines

After applying the paste between the device and the heat sink, the material must be dried into a solid phase-change layer to achieve optimal thermal performance. Recommended drying conditions are listed below,

0.250 mm Thickness:	
25°C	48h
70°C	60min
150°C	10 min

The above conditions are general guidelines. Users may adjust drying time and temperature according to their own process and equipment.

At the phase-change temperature, the material softens and flows to conform closely to the surface profile of the device and heat sink, filling micro-gaps and eliminating air bubbles, thereby forming an efficient thermal interface

## Technical Parameters

Typical Properties	SPC-5430	Test Methods
Appearance	gray paste	Visual
Phase Transition Temperature (°C)	44±2	DSC
Viscosity (cP)	200,000-400,000	ASTM D2196-15
Thermal Conductivity (W/m·k)	>3.0	ASTM D5470
Thermal impedance (K-in2/W @20psi)	≤0.01	ASTM D5470
BLT(um)	≤15	
Density (g/ cm <sup>3</sup> )	2.82±0.10	ASTM D792
Shelf Life (2~8°C) in jar/barrel	12 months	
Shelf Life (2~8°C) in tube/syringe	3 months	
Continuous Use Temperature (°C)	-40~+150	--

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

## Application Instructions

- Minor air bubbles in the material do not affect performance.
- Screen printing process as illustrated below:



- The coating thickness depends on the mesh size of the nylon screen: a smaller mesh count yields thicker coating.
- Recommended maximum thickness ≤ 0.254 mm to ensure complete drying under normal conditions.
- Allow sufficient drying time under appropriate temperature to form a solid phase-change layer.
- Reseal any unused material immediately after use for next application.

## 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