

## 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® PC-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, PC-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**
- **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.

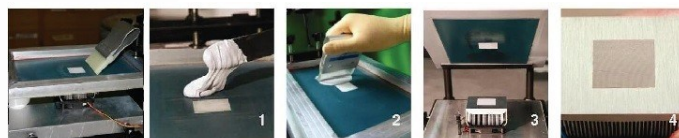
## Technical Parameters

| Typical Properties                | PC-5430          | Test Methods  |
|-----------------------------------|------------------|---------------|
| Appearance                        | White/Gray paste | Visual        |
| Phase Transition Temperature (°C) | 44±2/65±2        | DSC           |
| Viscosity (cP)                    | 200,000-400,000  | ASTM D2196-15 |
| Thermal Conductivity (W/m • k)    | >3.5             | ASTM D5470    |
| Thermal Impedance@20psi (K-in²/W) | ≤0.01            | ASTM D5470    |
| BLT (um)                          | ≤15              | Chooyu        |
| Density (g/ cm³)                  | 2.76±0.02        | ASTM D792     |
| Shelf Life (2~8°C)                | 12 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®PC-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, shelf life of 12 months 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.

## Precautions

- This product is volatile. Ensure adequate ventilation and personal protection during use.
- Viscosity may vary slightly with temperature, which does not affect product performance. It is recommended to apply under controlled, constant temperature conditions.

The data of this specification are obtained under laboratory conditions. However, because of the difference in use environment, process and so on, it can not guarantee the correctness and applicability of the product in some usage and use. When using, be sure to test to confirm the product suitable for your purpose. If you have any problems in using this product, please contact our technical department. We will do our best to help you.