

Key Features and Benefits

- Excellent thermal conductivity
- One-part, no mixing required, easy to use
- Rapid curing upon heating, suitable for reflow soldering
- No by-products released during the curing process
- Superior high and low temperatures resistance, excellent weather ability
- Superior chemical and mechanical stability
- Good adhesion to most substrate

Description

PAKCOOL® TC-9140 is a one-part, heat-curing liquid thermal silicone adhesive that provides excellent thermal conductivity and adhesion for electronic devices. It adheres well to a variety of materials, including copper, aluminum, stainless steel, and circuit boards. The adhesive cures without releasing any by-products, making it suitable for large-area, deep, and fully enclosed applications. It does not corrode metal or non-metal surfaces. Before curing, it is a viscous liquid that can flow under pressure. Once cured, it forms a tight bond with the contact surface, creating strong adhesive properties.

This product series offers high thermal conductivity, good insulation, and ease of use. It is ideal for various applications requiring both adhesive properties and heat conduction, particularly effective for bonding thicknesses $\leq 0.5\text{mm}$, where it delivers superior bonding and thermal performance. The product cures quickly at high temperatures, achieving high adhesive strength, making it suitable for reflow soldering processes.

Applications

- Solar Panel thermal bonding
- High-power LEDs
- Power modules/ power supplies
- Integrated circuits
- Automotive Electronics
- Communication devices
- Computers and Accessories
- Reflow soldering processes

Method of use

- Ensure that component surfaces are clean before applying the adhesive.
- Wear protective eyewear and gloves during use. Ensure the working environment is well-ventilated.
- This product may not solidify or completely solidify when exposed to some substances, such as sulfur, phosphorus, or nitrogen compounds and polysulfone, polysulfide, polyurethane, substances containing amides and amines, tin, arsenic, antimony, selenium, and tellurium, unsaturated hydrocarbons and plasticizers

Technical Parameters

Typical Properties	TC-9140	Test Methods
Color	White	Visual
Viscosity (cP) (Typical value)	120,000	ASTM D2196-20
Thermal Conductivity (W/m·K)	4.0	ASTM D5470
Density (g/cm ³)	3.1±0.2	ASTM D792
Hardness (Shore A) (Typical value)	94	ASTM D2240
Shear Strength (MPa @150°C)	4.1 (5 min) 5.5 (10 min)	Aluminum lap shear
Dielectric Strength (kV/mm)	8.5	ASTM D149
Volume Resistivity ($\Omega\cdot\text{cm}$)	$\geq 1.0 \times 10^{14}$	ASTM D257
Shelf Life (@< -18°C)	< 6 months	--
Shelf Life (@< 0°C)	< 3 months	--
Shelf Life (@< 20°C)	< 20 days	--
Continuous Use Temperature (°C)	-50~+200	--

Note: Data is for guidance only and should not be used as product specifications.

Storage & Logistics

- Available in 30mL, 55mL dispensing syringes, 330mL cartridges. Custom packaging options are also available based on customer requirements.
- Upon receipt, the product should be immediately frozen. Before opening and use, allow it to warm up to the usage temperature. Depending on the freezing temperature and quantity, warming up may take 2-8 hours or more to reach the optimal usage temperature. This prevents slow extrusion or condensation, which can affect curing and the adhesive strength after curing.
- Store in a cool, dark place, preferably frozen, to maintain the lowest possible temperature.
- Transport at temperatures preferably below 20°C, with transit times ideally kept within five days.

Precaution

- Due to the nature of this one-part adhesive, the viscosity of the product will increase over time during storage. Customers are advised to use the product as soon as possible to avoid operational difficulties due to changes in viscosity.

The data of this specification are obtained under laboratory conditions. However, because of the difference of 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.