PAKCOOL® One-part Heat-cure Thermally Conductive Adhesive TC-9100

Key Features and Benefits

- **Room Temperature Transportation**
- **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 weatherability**
- **Superior chemical and mechanical stability**
- **Good adhesion to most substrate**

Description

PAKCOOL® TC-9100 is a one-part, heat-curing liquid thermal silicone adhesive. 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 ≤0.5mm, 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-9100	Test Methods
Color	White	**Visual**
Viscosity (cP) (Typical value)	440,000	**Brookfield Viscometer**
Density (g/cm³)	1.60±0.20	**ASTM D792**
Hardness (Shore A) (Typical value)	55±15	**ASTM D2240**
Shear Strength (MPa @150°C)	2.3 (10 min) 3.2 (30 min) 3.6 (60 min)	**Aluminum lap shear**
Shear Strength (MPa @125°C)	2.9 (30 min) 3.3 (60 min)	**Aluminum lap shear**
Shear Strength (MPa @180°C)	3.1 (5 min)	**Aluminum lap shear**
Dielectric Strength (kV/mm)	≥18	**ASTM D149**
Volume Resistivity (Ω·cm)	≥1.0×10^{14}	**ASTM D257**
Shelf Life (@10~25°C)	20 days	--
Shelf Life (@- 25~ - 10°C)	3 months	--
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, store the product according to its condition. If the storage temperature is 10°C or more below the intended usage temperature, allow the product to acclimate to the usage temperature before opening. Depending on the packaging and quantity, this may require 2-8 hours or more. Proper acclimation prevents slow extrusion or condensation that could affect curing and bonding strength.
- Store in a cool, dry place, away from light and moisture.
- Can be transported as general chemicals.

Precaution

- PAKCOOL® TC-9100, compared to similar products, offers an extended shelf life even at room temperature and can be stored under various conditions based on usage requirements.

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.

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