



Key Features and Benefits

- Suitable for various potting modes
- 100% solids, no uncured by products
- Excellent high and low temperature, weather, radiation and exceptional dielectric properties
- Stable chemical and mechanical properties

Description

PAKCOOL® TPC-213-UR is a high thermal conductivity, 1:1 two-part liquid encapsulant designed for electronics. Upon curing, this product forms a soft, gel-like substance with minimal stress, low thermal expansion, and high insulation properties, effectively mitigating damage to electronic components. This series is specifically designed for the encapsulation and fixation of double-clad fibers on aluminum fiber trays in lasers, efficiently conducting heat from the fibers to the casing for dispersion. Due to its hydrophobic nature, TPC-213-UR offers moisture resistance, significantly reducing the impact of humidity on the external layers and prolonging the lifespan of the fibers. Prior to curing, the product demonstrates excellent flow and leveling properties, and it remains securely within the protective casing without detaching or separating, even under alternating hot and cold usage. The encapsulation surface is smooth and does not produce any volatiles.

Applications

- High-Power/Ultra-High-Power Lasers
- Fiber Optic Modules
- Integrated Circuits
- Power Modules
- Power Supply Units
- Communication devices
- LED Assemblies

Storage Conditions

- PAKCOOL® TPC-213-UR should be stored in a cool, dry place.

Packaging Specifications

- Available in 1Kg cans, 20Kg pails, and 40Kg pails. Custom packaging options are also available based on customer requirements.

Curing Time

- PAKCOOL® TPC-213-UR can be cure at room temperature for 12h-48h. The crosslinking time will be shortened with the increase of temperature (see table below).

25 °C	24 h
70 °C	60 min

Technical Parameters

Typical Properties	TPC-213-UR	Test Methods
Base Material	Silicone	--
Color	A: White B: White	Visual
Mix Ratio	1:1	--
Viscosity (cP)	≤5500	ASTM D2196-15
Operation time (min @25 °C)	>30	--
Thermal Conductivity (W/m·K)	1.3	ASTM D5470
Hardness (Shore OO)	35±5	ASTM D2240
Density (g/cm ³)	2.15±0.10	ASTM D792
Volume Resistivity (Ω·cm)	≥3.3 × 10 ¹³	ASTM D257
Dielectric Strength (kV/mm)	≥18	ASTM D149
UL Flammability Rating	V-0	UL 94
Shelf Life (@Room Temperature)	12 months	--
Continuous Use Temperature (°C)	-50 ~ +200	--

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

Precautions

- 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.
- Due to slight differences in viscosity between parts A and B, adjustments to the pressure on part B may be necessary when using machine encapsulation.
- It is normal for the fillers in the product to settle during storage. Before use, thoroughly scrape and stir components A and B within their respective containers to ensure uniformity. Afterward, mix the components in a 1:1 ratio and stir thoroughly again to achieve a homogeneous mixture.

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.