

# WACKER Thermally Conductive Silicone Adhesives & Potting Compounds



## Description

Modern power semiconductor devices and electronic assemblies are both subject to the same trend – miniaturisation. This is leading to ever higher operating temperatures.

**WACKER's thermally conductive silicone adhesives** have a key dual role in this process. On the one hand, they transfer the device's heat to the heat sink or other dissipation components. On the other, they create a firm yet flexible mechanical bond that doesn't require further fixing.

Silicone-based thermally conductive adhesives from WACKER exhibit outstanding durability. They remain virtually wear-free under permanent thermal stress, with an almost constant hardness even after thousands of operating hours at 150°C, and an elongation at break which changes minimally over the long term. The material does not become brittle. As a result, you have the assurance that the thermally conductive bond between the device and cooling element remains functional over the long term.

**WACKER's thermally conductive silicone encapsulants and potting compounds** are optimized for bubble-free encapsulation. Despite their high filler content, they exhibit good flow properties with low viscosity. This property mix is achieved thanks to minimal thixotropic or pseudoplastic behavior, reducing the risk of air bubbles.

## Features & Benefits

- Thermal management of pcb assemblies, LED assemblies, power electronics

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- Efficiently dissipate heat, even for complicated shapes
- Permanently withstand shocks, vibrations and temperature fluctuations due to their soft consistency
- Thermal conductivity of up to 4.3 W/mK
- Reduction of manufacturing costs by acting as both thermal coupling and mechanical fixturing

## Curing and Rheology

Product	Type	Cure	Cure Time	Colour	Rheology	Characteristics
Semicosil 975 TC	Single part	Thermal	10 min at 90°C 20 min at 100°C 10 min at 130°C 4 min at 150°C	Reddish-grey	Thixotropic paste	Adhesive with very high thermal conductivity 4.3 W/mK. FIPG. CIPG. Meets MIL-A-46106

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Product	Type	Cure	Cure Time	Colour	Rheology	Characteristics
Elastosil RT 747 TC	Single part	Thermal	30 min at 130°C 15 min at 150°C	White	Low viscosity	Self- levelling thermally conductive encapsulant with good primerless adhesion; cold storage required
Elastosil RT 428	Two part	Condensation	8 hours at 23°C	Reddish- brown	12,000 mPas	Thermally conductive two part potting compound. Very good flow. Excellent heat resistance.

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Product	Type	Cure	Cure Time	Colour	Rheology	Characteristics
Semicosil 961 TC	Two part	Addition	5 hours at 23°C;5 mins at 100°C	Yellow	130,000 mPas	Thermally conductive gap filler; shear- thinning so easy dispensing; non-slump; cures to a soft and tacky rubber

## Specifications

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Product	Thermal conductivity (W/m²K)	Hardness (Shore)	Tensile strength (N/mm²)	Elongation %	
Semicosil 975 TC	4.3	A 98	3	10	
Elastosil RT 747 TC	1.3	A 70	2	50	
Elastosil RT 428	0.3	A 65	6	90	
Semicosil 961 TC	2.3	00 55			

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