

SEMICOSIL[®] 9981 TC



1-part heat-curing silicone rubber

SEMICOSIL[®] 9981 TC is a 1-part thermally conductive paste having electrical conductivity that is curing into gap filling silicone.

The thermal paste is able to efficiently fill finest gaps of heat generating and ablating substrates and thus helps to minimize contact resistance. Thermal resistivity is minimized by an exceptional thermal conductivity of 10 W/mK in combination with the possibility of bond line thickness reduction to 10 µm.

Properties

- One-component
- Almost constant properties between -50 °C and +180 °C
- Cure at moderate temperature (150 °C / 2 h)
- Thermal conductivity is 10 W/mK
- Electrical conductive
- Low bond line thickness (10 µm)
- Emphasized thermal stability in cured state
- Flexibility in application method
- Superior dispensing performance, screen printability
- Suitable for automated bonding or vacuum bonding processes

IMPORTANT:

SEMICOSIL[®] 9981 TC at this stage represents a developmental product with no fixed specification. The figures given above are only intended as a guide and should not be used in preparing specifications. Please contact your local sales manager to check status and availability.

Technical data

Properties Uncured

Property	Condition	Value	Method
Viscosity [D= 0.5 sec ⁻¹]	25 °C	300 Pa.s	DIN EN ISO 3219
Viscosity [D= 10.0 sec ⁻¹]	25 °C	100 Pa.s	DIN EN ISO 3219
Appearance	-	Grey	-
Compression Thickness - Uncured material, Push gage, 5 - 20 N/cm ²	-	< 10 µm	-
Pot Life	-	> 8 h	-

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Properties Cured

Values from pressed sheet (165 °C / 15 min) and Post cure (150 °C / 2 hrs / Dry-oven)

Property	Condition	Value	Method
Hardness Shore A	-	80	DIN 53 505 / ISO 868
Appearance	-	Grey	-
Curing time proposal with thickness 1 cm	150 °C	2 h	-
Density in water	25 °C	5.6 g/cm ³	DIN 53479 A / ISO 2781
Thermal conductivity at 4mm	-	10 W/m.K	TPS-2500 S / ISO 22007-2
Volume resistivity	-	9.00 x 10 ⁻⁴ Ohmcm	Resistance Meter

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All the information provided is in accordance with the present state of our knowledge. Nonetheless, we disclaim any warranty or liability whatsoever and reserve the right, at any time, to effect technical alterations. The information provided, as well as the product's fitness for an intended application, should be checked by the buyer in preliminary trials. Contractual terms and conditions always take precedence. This disclaimer of warranty and liability also applies particularly in foreign countries with respect to third parties' rights.

Applications

- Automotive Electronics
- Power Electronics
- Silanes for chemical vapor deposition (CVD) and spin-on dielectrics (SOD)
- Thermal Interface Materials

Processing

Dispensing

Material can be processed from cartridge or from hobcock by automated needle dispensing or manual dispensing at low pressure. Appropriate dispensing equipment and gasketing is recommended for optimum processing as well as protection of the equipment since product contains abrasive fillers. Accurate dispensing is possible with piston pump technology at high dispensing performance. Superior dispensing performance is also possible with endless piston pump technology.

Surface preparation

All surfaces of parts, tools and processing equipment must be clean and free of contaminants that will inhibit the cure of SEMICOSIL® 9981 TC.

Examples of inhibiting contaminants are sulfur containing materials, plasticizers, urethanes, amine containing materials and organometallic compounds – especially organotin compounds. If a substrate's ability to inhibit cure is unknown, a small-scale test should be run to determine compatibility.

For oven curing it is recommended to not use ovens applied for the cure of epoxy or polyurethane based encapsulants in order to avoid potential crosscontamination with potentially inhibiting hardeners.

Bonding

SEMICOSIL® 9981 TC is suited for manual bonding at low bonding forces as well as automate vacuum bonding.

Adhesion is generated and facilitated on various substrate like metals, ceramics and plastics FR4 by curing at elevated temperatures.

We recommend running preliminary tests to optimize conditions for the particular application.

Comprehensive processing instructions are given in our leaf let "Wacker RTV-2 Silicone Rubber - Processing".

Curing

Temperature	Curing time, Thickness 1 cm
150°C	2 Hours

Packaging and storage

Storage

The 1-part silicone SEMICOSIL® 9981 TC's the storage temperature is -20 °C to -40 °C. Prior to application slow warming to room temperature is recommended. It is recommended to process material at room temperature (23 °C) within a time frame of 8 hours.

Shelf Life

SEMICOSIL® 9981 TC has the shelf life is 6 months when stored at under -20 °C in the originally sealed container. Before application container should be slowly warmed to room temperature.

Storage beyond the date specified on the label does not necessarily mean that the product is no longer usable. (It is under storage test and can be extended.)

Safety notes

According to the latest findings, the addition curing silicone rubber SEMICOSIL® 9981 TC contains neither toxic nor corrosive substances which might require special handling precautions. General hygiene regulations should be observed. Comprehensive instructions are given in the corresponding Material Safety Data Sheet.

QR Code SEMICOSIL® 9981 TC



For technical, quality or product safety questions, please contact:

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