

SEMICOSIL[®] 987 GR



1-part heat-curing silicone rubber

SEMICOSIL[®] 987 GR is a non-slump, thermally curable, addition curing, one-part silicone elastomer which can be used as sealing adhesive

Properties

Special characteristics

- One-part, ready-to-use, heat curing silicone
- Thixotropic
- High flexibility (low-stress-adhesive) for FIPG bonding
- Primerless adhesion to many substrates

Technical data

Properties Uncured

Property	Condition	Value	Method
Viscosity, dynamic (D = 0.5 s ⁻¹)	25 °C	350000 mPa·s	ISO 3219
Viscosity, dynamic (D = 25 s ⁻¹)	25 °C	30000 mPa·s	ISO 3219
Color	-	gray	-
Density	-	1.07 g/cm ³	DIN EN ISO 2811-1

These figures are only intended as a guide and should not be used in preparing specifications.

Properties Cured

Cured for 30 min at 150 °C in a circulating air oven.

Property	Condition	Value	Method
Hardness Shore A	-	50	ASTM D 2240
Tensile strength	-	5 N/mm ²	DIN 53504 S2
Elongation at break	-	200 %	DIN 53504 S2
Color	-	gray	-
Density in water	23 °C	1.07 g/cm ³	DIN EN ISO 1183-1 A

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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
- Bonding & Sealing
- Electronic Control Unit (ECU)
- Electronics
- Measurement & Control, Sensor Technology
- Power Control Unit (PCU)

Application details

- General purpose sealing adhesive
- Electronics industry
- FIPG - sealing of electronic control unit substrates (cover, housing)
- Supports mass production processes with end-of line QC-control

Processing

General

SEMICOSIL 987 GR can be applied as sealing adhesive for FIPG bonding of thermoplastics (Polybutylenterephthalates, Polyamides) and metals (Al, steel) for mass production processes.

On suitable substrates adhesion built up is accomplished via chemical linkages to polar anchor groups of the substrate. Examples for processing concepts are given in the following.

As type of substrates, concentration and accessibility of functional anchor groups may vary, it is highly recommended that customers carry out adhesion tests for in-line quality check and adhesion performance after aging before fixing processing parameters. It is customers responsibility to check fitness for the specific application and to ensure reproducibility of surface quality.

Surface

SEMICOSIL® 987 GR shows good primerless adhesion to many substrates. We recommend running preliminary tests to optimize conditions for the particular application. Comprehensive processing instructions are given in our leaflet „ Room Temperature Vulcanizing (RTV) Silicones (Materials and Processing Guidelines)“ which can be downloaded from WACKER Chemie AG website.

All equipment and surfaces must be clean and free of contaminants that will prevent adhesion and/or inhibit the cure of SEMICOSIL® 987 GR.

Separation layers on bonding substrated may be formed from residues of previous processes, from migrating additives or unintended contaminations. Examples of separating molecules among others can be processing fluids or deforming agents that are not able to built chemical links to reactive and accessible anchor groups of the substrate surface or to the silicone elastomer. 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 or built up adhesion is unknown, a small scale test should be run to determine compatibility.

Safeguarding of reproducible and suitable surface quality is recommended. State of the art methods include in-line surface pretreatments like plasma processes or laser pretreatment.

Dispensing

Because of the pronounced shear thinning effect SEMICOSIL® 987 RB GR can be dispensed easily with all dispensing equipments.

Since silicones dissolve notable amounts of air, an in-line degassing is recommended.

Curing

SEMICOSIL® 987 GR works best when cured at 125 °C or more.

Curing time should be adapted to the size and heat sink properties of the components and parts. The term "curing" time describes the time needed for solidification of the material. For typical substrates adhesion built-up is accomplished within this time, which can be observed by cohesive failure upon adhesion test.

However, depending on the surface quality of the bonding surfaces, time to adhesion might differ from given curing profiles.

In the interest of robust processing it is highly recommended that for selected curing temperatures & times aging tests on specific customers parts are carried out to storage safeguard the process.

Temperature	Curing time, thickness 1 cm
100 °C	6 h
130 °C	1 h
150 °C	10 min

Packaging and storage

Storage

The 'Best use before end' date of each batch is shown on the product label. SEMICOSIL® 987 GR should be stored between +5 and +25°C in the tightly closed original container. Storage beyond the date specified on the label does not necessarily mean that the product is no longer usable. In this case however, the properties required for the intended use must be checked for quality assurance reasons.

Safety notes

According to the latest findings, the addition-curing silicone rubber SEMICOSIL® 987 GR contains neither toxic or corrosive substances which would require special handling precautions. Comprehensive instructions are given in the corresponding Material Safety Data Sheets. They are available on request from WACKER subsidiaries or may be printed via WACKER web site <http://www.wacker.com>.

QR Code SEMICOSIL® 987 GR



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

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