

# SEMICOSIL<sup>®</sup> 917



## Room Temperature Curing Silicone Rubber (RTV-2)

SEMICOSIL<sup>®</sup> 917 is a shear-thinning, addition-curing, 2-part silicone rubber that cures to a soft silicone gel when mixed with ELASTOSIL<sup>®</sup> CAT PT, ELASTOSIL<sup>®</sup> CAT PT-F, ELASTOSIL<sup>®</sup> CAT UV or SEMICOSIL<sup>®</sup> 950 UV B.

### Properties

- 10 : 1 mixing ratio
- Shear-thinning
- Fast curing at room temperature with Catalyst PT-F
- Long pot life at room temperature with Catalyst PT
- Extremely fast curing with Catalyst UV
- Shadow cure with SEMICOSIL<sup>®</sup> 950 UV B
- Low Hardness
- Pronounced tackiness
- Cured properties independent on catalyst
- UV tracer for automated visual inspection

## Technical data

### Properties Uncured

Property	Condition	Value	Method
Color	-	Clear	-
Density	23 °C	0.98 g/cm <sup>3</sup>	DIN EN ISO 2811-1
Viscosity, dynamic	25 °C   0.5 1/s	13000 mPa·s	DIN 53019
Viscosity, dynamic	25 °C   100 1/s	1700 mPa·s	DIN 53019

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

### Catalyzed

mixing ratio (SEMICOSIL® 917 : catalyst) = 10:1

Property	Condition	Value	Method
Viscosity, dynamic (catalyzed with ELASTOSIL® CAT UV) <sup>(1)</sup>	25 °C   100 1/s	1700 mPa·s	DIN 53019
Viscosity, dynamic (catalyzed with ELASTOSIL® CAT UV) <sup>(2)</sup>	25 °C   0.5 1/s	12000 mPa·s	DIN 53019
Pot Life catalyzed with ELASTOSIL® CAT PT	23 °C	2 h	-
Pot Life catalyzed with ELASTOSIL® CAT PT-F	23 °C	5 min	-
Pot Life catalyzed with ELASTOSIL® CAT UV <sup>(3)</sup>	23 °C	≥ 1 d	-
Pot Life catalyzed with SEMICOSIL® 950 UV B <sup>(4)</sup>	23 °C	20 min	-

<sup>1</sup>without UV-irradiation

<sup>2</sup>without UV-irradiation

<sup>3</sup>without UV-irradiation

<sup>4</sup>without UV-irradiation

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## Catalyzed

mixing ratio (SEMICOSIL® 917 : catalyst) = 10:1

Property	Condition	Value	Method
Gel time catalyzed with ELASTOSIL® CAT PT	50 °C	30 min	DIN 16945
Gel time catalyzed with ELASTOSIL® CAT PT	23 °C	4.5 h	DIN 16945
Gel time catalyzed with ELASTOSIL® CAT PT-F	50 °C	3 min	DIN 16945
Gel time catalyzed with ELASTOSIL® CAT PT-F	23 °C	15 min	DIN 16945
Gel time catalyzed with ELASTOSIL® CAT UV <sup>(1)</sup>	50 °C	-	DIN 16945
Gel time catalyzed with ELASTOSIL® CAT UV <sup>(2)</sup>	23 °C	< 200 s	DIN 16945
Gel time catalyzed with SEMICOSIL® 950 UV B <sup>(3)</sup>	50 °C	≤ 10 min	DIN 16945
Gel time catalyzed with SEMICOSIL® 950 UV B <sup>(4)</sup>	23 °C	< 200 s	DIN 16945
Gel time catalyzed with SEMICOSIL® 950 UV B <sup>(5)</sup>	23 °C	40 min	DIN 16945
Gel time catalyzed with SEMICOSIL® 950 UV B <sup>(6)</sup>	120 °C	40 - 180 s	DIN 16945

<sup>1</sup>without UV-irradiation; no cure

<sup>2</sup>UV dose 1.4 J/cm<sup>2</sup>, 250-350 nm (10 sec. at 140 mW/cm<sup>2</sup>), 1 cm thickness

<sup>3</sup>without UV-irradiation

<sup>4</sup>UV dose 1.4 J/cm<sup>2</sup>, 250-350 nm (10 sec. at 140 mW/cm<sup>2</sup>), 1 cm thickness

<sup>5</sup>without UV-irradiation

<sup>6</sup>without UV-irradiation

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

## Properties Cured

cured at 150°C for 30 min.

Property	Condition	Value	Method
Color	-	Clear	-
Density	23 °C	0.98 g/cm <sup>3</sup>	DIN EN ISO 1183-1 A
Penetration <sup>(1)</sup>	-	55 1/10mm	DIN ISO 2137

<sup>1</sup>9.38g hollow cone; 5 sec.

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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.

Comprehensive instructions are given in the corresponding Material Safety Data Sheets. They are available on request from WACKER subsidiaries or may be downloaded via WACKER web site <http://www.wacker.com>.

## Application details

Encapsulation of electronic components for the automotive and power electronics industries.

## Processing

### Surface preparation

All surfaces must be clean and free of contaminants that will inhibit the cure of SEMICOSIL® 917.

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.

### Mixing

SEMICOSIL® 917 contains the crosslinker, ELASTOSIL® CAT PT, PT-F, UV and SEMICOSIL® 950 UV contains the catalyst. Even traces of the platinum catalyst may cause gelling of the component containing the crosslinker. Therefore tools (spatula, stirrers, etc.) used for handling the catalyst-containing component or the catalyzed compound must not come into contact with this component.

The two components should be thoroughly mixed at a 10 : 1 ratio by weight or volume.

To eliminate any air introduced during dispensing or trapped under components or devices a vacuum encapsulation is recommended.

The system SEMICOSIL® 917 / ELASTOSIL® CAT UV (10:1) is activated by direct UV irradiation. UV irradiation should use emissions in the wavelength range between 250 and 350 nm.

## Curing

The system SEMICOSIL® 917 / ELASTOSIL® CAT UV (10:1) is activated by direct UV irradiation. UV irradiation should use emissions in the wavelength range between 250 and 350 nm.

Typically D-bulbs (Fe-doped Hg-light sources) using ozone-free quartz should be used and are commercially available. H-bulbs with emissions below 250 nm are not recommended.

Curing time of the UV-active system SEMICOSIL® 917 / ELASTOSIL® CAT UV (10:1) is highly dependent both on the intensity and dose of the UV-light and the spectral intensity distribution. The curing is also dependent on the layer thickness, the optical properties of the substrate and temperature. Increase of the temperature will fasten curing reaction.

SEMICOSIL® 917 / ELASTOSIL® CAT UV (10:1) will only cure in directly irradiated areas. The combination

SEMICOSIL® 917 / SEMICOSIL® 950 UV B features same UV reactivity, but additionally ensures that the silicone also can be cured in shadow areas which are not directly irradiated with light.

For fast cure a vented oven can be used.

Oven temperature 100°C	Curing time 2 mm
Catalyst PT	5 min
Catalyst PT-F	2 min
Catalyst UV #	0,5 - 5 min
SEMICOSIL® 950 UV B #	0,5 - 5 min

# Only UV irradiation at 23°C: UV dose 1.4 J/cm<sup>2</sup>, 250-350nm

## Packaging and storage

### Storage

SEMICOSIL® 917 should be stored dry and cool in the tightly closed original container.

The 'Best use before end' date of each batch appears on the product label.

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® 917 contains neither toxic nor aggressive substances which would require special handling precautions. General industrial hygiene regulations should be observed.

Detailed safety information is contained in each Material Safety Data Sheet, which can be obtained from our sales offices.

## QR Code SEMICOSIL® 917



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

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