

WACKER SiGel® 612

Silicone Gel

Characteristics

WACKER SiGel® 612 is a pourable, addition-curing, RTV-2 silicone rubber that vulcanizes at room temperature to a very soft silicone gel.

Special characteristics

- Two-part, 1 : 1 mixing ratio
- Low viscosity
- Rapid heat cure
- Very low hardness (silicone gel)
- Crystal clear
- Pronounced inherent tack
- Excellent mechanical damping properties

Product data (uncured)

Property	Test method	Unit	Value	
Component			A	B
Color			Clear	Clear
Viscosity at 23 °C	ISO 3219	[mPa s]	1,000	1,000
Density at 23 °C		[g/cm ³]	0.97	0.97

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

Product data (catalyzed A+B)

Property	Test method	Unit	Value
Platinum-catalyst in component			B
Mixing ratio		A : B	1 : 1
Viscosity of mix	ISO 3219	[mPa s]	1,000
Pot life at 23 °C		[h]	2.5

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Product data (cured)

Property	Test method	Unit	Value
Color			Clear
Density at 23 °C	ISO 2781	[g/cm ³]	0.97
Penetration (150 g hollow cone)	DIN ISO 2137	[mm/10]	300
Dielectric strength	IEC 243	[kV/mm]	23
Volume resistivity	IEC 93	[Ωcm]	10 ¹⁶
Dielectric constant	VDE 0303 T4 / 50 Hz	[ε _r]	2.7
Dissipation factor	VDE 0303 T4 / 50 Hz	[tan δ]	10 × 10 ⁻⁴
Tracking resistance	DIN IEC 112	[CTI]	> 600
Surface resistivity	DIN IEC 93	[Ω]	10 ¹⁴
Refractive index	n _D ²⁵		1.404

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

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Application

- Encapsulation of electronic components for the automotive and power electronics industries
- Encapsulation of solar cells
- Production of damping elements
- Sealing of clean room filters

Processing

Caution

Only A and B components with the **same batch number** may be processed together!

Surface preparation

All surfaces must be clean and free of contaminants that will inhibit the cure WACKER SiGel® 612.

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

Component B of WACKER SiGel® 612 contains the platinum catalyst, component A the crosslinker. Even traces of the platinum catalyst may cause gelling of the component containing the crosslinker. Therefore tools (spatula, stirrers, etc.) used for handling the platinum-containing component or the catalyzed compound must not come into contact with this component.

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

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

Curing

Curing time addition-curing silicone rubber is highly dependent on temperature, size and heat sink properties of the component being potted.

Temperature	Curing time
23 °C	8 h
100 °C	15 min
150 °C	5 min

The reactivity can be adjusted within wide limits by adding Catalyst EP or Inhibitor PT 88 to suit the processing requirements of the particular application. Catalyst EP increases the reactivity, i. e., pot life and curing time are reduced.

Inhibitor PT 88 is a pot life extender and prolongs pot life and curing time.

Further information is given in our leaflet "Catalyst EP/Inhibitor PT88".

Hardness

If the gel is too soft and tacky, reducing the amount of component B will result in a harder, less tacky vulcanizate. The hardest formulation is achieved with a mixing ratio for A : B of approximately 1.5 : 1.

For logistical reasons we can only accept orders in a mixing ratio of A : B = 1 : 1.

Tack-free surfaces can be achieved by coating with ELASTOSIL® RT 601.

Pigmentation

WACKER SiGel® 612 can be pigmented by adding 1 - 4 % of an ELASTOSIL® FL pigment paste.

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

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

Storage stability

WACKER SiGel® 612 has a shelf life of at least 12 months when stored between 5 °C and 30 °C in the originally sealed 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 information

According to the latest findings, the addition-curing silicone rubber WACKER SiGel® 612 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.

The data presented in this leaflet are in accordance with the present state of our knowledge, but do not absolve the user from carefully checking all supplies immediately on receipt. We reserve the right to alter product constants within the scope of technical progress or new developments. The recommendations made in this leaflet should be checked by preliminary trials because of conditions during processing over which we have no control, especially where other companies' raw materials are also being used. The recommendations do not absolve the user from the obligation of investigating the possibility of infringement of third parties' rights and, if necessary, clarifying the position. Recommendations for use do not constitute a warranty, either express or implied, of the fitness or suitability of the products for a particular purpose.

The management system has been certified according to DIN EN ISO 9001 and DIN EN ISO 14001. The Business Unit Elastomers of the Division Silicones is ISO/TS 16949 certified.

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