ELASTOSIL SOLAR® 3210 A/B

RTV-2 SILICONE RUBBER

Product description

ELASTOSIL SOLAR® 3210 A/B is a pourable, addition-curing, RTV-2 silicone rubber that vulcanizes at room temperature to yield a crystal clear vulcanisate of medium hardness and with very high transmission.

Special features

- two-part system, 9:1 mixing ratio
- low viscosity
- rapid heat cure
- crystal clear vulcanisate
- very high transmission
- long-term stability against weathering, moisture and UV radiation
- electrically insulating

Application

- multi-purpose potting agent for the solar energy industry
- encapsulation of solar cells
- bonding of optical devices
- manufacture of molded articles by casting, e.g. Fresnel lenses and other optical devices

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 of ELASTOSIL SOLAR® 3210 A/B.
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 A of ELASTOSIL SOLAR® 3210 A/B contains the platinum catalyst, component B 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 9 : 1 ratio by weight or volume.

To eliminate any air introduced during dispensing or trapped under components or devices a vacuum encapsulation is favourable. Alternatively, component A and B can be deaerated individually prior to use; applying a vacuum of 25 - 50 mbar for 10 - 15 min is recommended.

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

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”.

After completion of the vulcanization process the product may be continously exposed to constantly changing climatic conditions, UV radiation and temperatures as high as 180 °C (356 °F) without damage.

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".

If removal of silicone rubber from machines or dispensing equipment is necessary, white spirit or similar nonpolar solvents are recommended. However, cleaning ideally should take place before the rubber is fully vulcanized. Cured silicone rubber can be removed by mechanical means, preferably in combination with a swelling agent (solvent), which will help to remove

sealant residues.

Storage

The "Best use before end" date of each batch is shown 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, addition-curing silicone rubber ELASTOSIL SOLAR® 3210 A/B contains neither toxic nor aggressive substances which would require special handling precautions. General industrial hygiene regulations should be observed.

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.

Product data

Typical general characteristics	Inspection Method	Value
Product data (uncured)		
Component A		
Color		colorless
Viscosity at 20°C		4000 - 7000 mPa s
Density		1,03 g/cm³ at 20 °C
Component B		
Color		colorless
Viscosity at 20°C		20 - 40 mPa s
Density		0,97 g/cm³ at 20 °C
Product data (catalyzed A + B)		
Platinum-catalyst in component		A
Mix ratio A : B		9 : 1
Viscosity of mix	ISO 3219	3500 mPa s
Pot life at 23°C		75 min
Curing time at 23°C		24 h
Curing time at 70 °C		20 min
Curing time at 100 °C		10 min
Product data (cured)		
Color		colorless
Density at 23 °C	ISO 2781	1,02 g/cm³
Hardness Shore A	ISO 868	45
Tensile strength	ISO 37	7,0 N/mm^2
Elongation at break	ISO 37	100 %
Tear strength	ASTM D 624 B	3,0 N/mm
Transmission 380-1100 nm (10 mm layer)		> 90 %
Refractive index at 25 °C		1,411

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

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

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

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

Wacker Chemie AG
Hanns-Seidel-Platz 4
81737 München, Germany
info.silicones@wacker.com

www.wacker.com