

ELASTOSIL® SOLAR 3210 A/B



Room Temperature Curing Silicone Rubber (RTV-2)

ELASTOSIL® SOLAR 3210 A/B is a pourable addition curing RTV-2 silicone rubber for coating, lamination, encapsulation and molding purposes. The product vulcanizes at room temperature and under heat to yield a crystal clear silicone rubber with very high transmission and of medium hardness.

Cured ELASTOSIL® SOLAR 3210 A/B shows long-term stability against weathering, moisture and UV light. The silicone elastomer may continuously be exposed to constantly changing climatic conditions, UV radiation and temperatures as high as 180 °C (356 °F) without damage.

Properties

Uncured:

- 9:1 mixing ratio
- medium curing speed at room temperature
- rapid heat cure possible

Cured:

- medium hardness
- crystal clear vulcanisate
- excellent resistance to UV light
- very high light transmission in the range of 250 nm to 1100 nm
- recommended service temperature range:

-50 °C to +180 °C

Specific features

- Electrically insulating
- Highly transparent
- Low viscosity
- Optically clear
- Two-component
- UV & weathering-resistant
- UV stable

Technical data

Properties Uncured

Property	Condition	A	B	Method
Color	-	colourless transparent	colourless transparent	-
Density	23 °C	1.01 g/cm ³	0.97 g/cm ³	DIN EN ISO 2811-2
Viscosity, dynamic	25 °C	5100 mPa·s	40 mPa·s	DIN EN ISO 3219
Component containing the platinum catalyst	-	A	-	-

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

Properties Catalyzed A+B

All values given for a mixing ratio of 9:1 by weight.

Property	Condition	Value	Method
Viscosity, dynamic	-	3250 mPa·s	ISO 3219
Pot Life (spindle 3)	23 °C	90 min	DIN EN ISO 2555
Curing time	23 °C	24 h	-
Curing time	70 °C	20 min	-
Curing time	100 °C	10 min	-

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Properties Cured

Cured in a mixing ratio of 9:1 by weight. Curing conditions: 60 min. at 70 °C in a circulating air oven, 2 mm sheet, no post-curing.

Property	Condition	Value	Method
Color	-	crystal clear	-
Density	23 °C	1.02 g/cm ³	DIN EN ISO 1183-1 A
Tear strength	-	3.4 N/mm	ASTM D 624 B
Hardness Shore A	-	45	DIN ISO 48-4
Tensile strength	-	8.0 N/mm ²	ISO 37 type 1
Elongation at break	-	110 %	ISO 37 type 1
Refractive index	25 °C 589 nm	1.4090	-
Transmission (film thickness 10 mm) ⁽¹⁾	380 - 1100 nm	> 90 %	-

¹25 °C

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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

- Production of CPV Modules

Application details

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

Processing

Important!

Only A and B components with the same batch number should 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:

Caution! Component A of ELASTOSIL® SOLAR 3210 A/B contains the platinum catalyst, component B the crosslinker. Since even small quantities of crosslinker may cause gelling of component A, all tools (e.g. spatula, stirrers, mixing cups etc.) used for handling either component B or the A/B mix must not come into contact with component A by mistake.

The two components should be thoroughly mixed at a 9 : 1 ratio by weight or volume, either manually or by automatic metering lines equipped with static or dynamic mixing devices.

Material application:

To eliminate any air introduced during dispensing or trapped under components or devices a vacuum encapsulation is recommended. Alternatively, component A and B can be deaerated individually prior to use to remove absorbed air; 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 and both the size and the heat sink properties of the substrates used. ELASTOSIL® SOLAR 3210 A/B cures both at room temperature and under heat. General information about pot life, typical curing temperatures and resulting curing times are given in the table "Properties Catalyzed A+B".

The reactivity of ELASTOSIL® SOLAR 3210 A/B can be adjusted within wide limits by adding WACKER® Catalyst EP or WACKER® Inhibitor PT 88 to suit the processing requirements of the particular application. WACKER® Catalyst EP increases reactivity, i. e. pot life and curing time are reduced. WACKER® Inhibitor PT 88 is a pot life extender and thus prolongs pot life and curing time.

Pigmentation:

ELASTOSIL® SOLAR 3210 A/B is colourless, transparent and crystal clear. If necessary, the product can be pigmented by adding up to 2 wt. % of ELASTOSIL® COLOR PASTE FL.

Detailed information about processing, modifying curing speed and pigmentation is given in our brochure "ROOM TEMPERATURE VULCANIZING (RTV) SILICONES - MATERIAL AND PROCESSING GUIDELINES". We recommend running preliminary tests to optimize conditions for the particular application.

Removal:

If removal of the silicone from machines or dispensing equipment is necessary, white spirit or similar nonpolar solvents are recommended. However, cleaning ideally should take place before the silicone is fully vulcanized. Cured silicone can be rubbed off and removed mechanically, if necessary in combination with a swelling agent (solvent).

Packaging and storage

Storage

Store in a dry and cool place.

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

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 ELASTOSIL® SOLAR 3210 A/B



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

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