

# RTV-S 691

RTV-2 Silicone Rubber

## Characteristics

RTV-S 691 is a flowable, dual-part addition curing silicone rubber which can be vulcanised at room temperature. Due to its low outgassing rate and low temperature flexibility it is recommended especially for space applications.

## Special characteristics

- Resistant to low temperatures
- Glass transition temperature: < -100 °C/-148°F
- Particularly low volatile contents
- Admitted for aerospace applications by ESTEC (European Space Research and –technology Centre) according to specification ECSS-Q-70-02A (corresponds to former ESA PSS-01-701)

## Application

Silicone adhesive with minimum outgassing behaviour for space projects, e. g. bonding for solar cells in satellites.

RTV S-691 can be applied by silk screen printing or by dispensing equipment.

In order to make the rubber adhere to other materials (e. g. glass, aluminium, silver, epoxy resin, polyester resin), it is necessary to pretreat the surface with Primer G 790.

### Product data (uncured)

Property	Test method	Unit	Value	
			A	B
<b>Component</b>			<b>A</b>	<b>B</b>
Color			Red	Colorless, clear
Viscosity at 23 °C	Brookfield (spindle 5, 2.5 rpm)	[mPa s]	55,000-70,000	
Viscosity at 23 °C		[mPas]		200-240

### Product data (catalyzed A + B)

Property	Test method	Unit	Value
Mixing Ratio (p.b.w.)		A : B	9 : 1
Viscosity at 23 °C (ca. 5 min after mixing the 2 components, shear rate 16 1/s)		[mPa s]	18,000-26,000
Potlife at 23 °C (time to 200,000 mPa s at 16 1/s)		[min]	90-110

**Product data (cured)<sup>1)</sup>**

Property	Test method	Unit	Value
Density at 23 °C in water	ISO 2781	[g/cm <sup>3</sup> ]	1.41-1.43
Hardness, Shore A	ISO 868		50-60
Tensile strength	ISO 37	[N/mm <sup>2</sup> ]	4.0-6.0
Elongation at break	ISO 37	[%]	100-160
Tear resistance	ISO 34	[N/mm]	4.0-6.0
Modulus of elasticity at 23 °C	DIN 53 455 / DIN 53 457 / DIN 53 504	[N/mm <sup>2</sup> ]	1.33-1.53
Modulus of shear at 23 °C	DIN 53 455 / DIN 53 520	[N/mm <sup>2</sup> ]	0.702-0.731
Glass transition temperature		[°C]	-104
Surface resistivity at 100 V	DIN IEC 93	[Ω]	> 1.0 x 10 <sup>12</sup>
Volume resistivity at 100 V, measured after 1 min	IEC 60093	[Ω cm]	> 1.0 x 10 <sup>14</sup>
Total mass loss	ESA ECSS-Q-70-02A	[%]	< 1
Collected volatile condensable material	ESA ECSS-Q-70-02A	[%]	< 0.1

<sup>1)</sup> Vulcanisation 6 h / 100 °C.

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

### Processing

Mixing ratio is 9:1 p.b.w

Before taking component A out of the container or adding the catalyst, stir the material thoroughly. Components A and B can be mixed by hand or with metering equipment. The material must be evacuated before application to remove enclosed the bubbles.

For detailed information refer to our leaflet "Wacker RTV-2 Silicone Rubber Processing".

#### Important:

**The platinum catalyst is contained in component A.**

#### Caution!

Only components A and B that have **the same lot numer** may be processed together!

#### Mixing of the components

It is absolutely imperative that any equipment, such as mixing vessels, spatulas and stirres, that is used to process Component A (which contains the platinum catalyst) or the mixture of both components does not come into contact with Component B (which contains the crosslinker). Therefore, all equipment should be clearly labeled.

### Storage

RTV-S 691 should be stored between 23°C and 30°C 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 information

Comprehensive instructions are given in the corresponding Material Safety Data Sheets. They are available on request from Wacker subsidiaries.

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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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