

# Silbione® RTV 4528 A & B

October 2017

## Two Component Silicone Elastomer

**Description** Silbione® RTV 4528 A & B is a two component silicone elastomer that crosslinks at room temperature by polyaddition reaction. The polymerisation can be accelerated by heat.

The silicone components are delivered as two component low viscous liquids, which once mixed and cured, transforms into an elastic and resistant material. polymerisation occurs without formation of heat.

**Applications** Silbione® RTV 4528 A & B is suitable for producing orthopedic devices.

- Advantages**
- Silbione® RTV 4528 A & B polymerises at room temperature (23 °C) even in the absence of air and moisture.
  - The curing characteristics are independent of the thickness of the parts.
  - The polymerisation can be accelerated by heat (up to 150 °C).
  - Fast mixing and easy processing (1: 1) due to the low viscosity.
  - Biocompatibility and non-toxicity.

### Typical Properties

<u>1. Components</u>		<u>RTV 4528</u>	
<u>Property</u>		<u>A</u>	<u>B</u>
• <b>Appearance</b>		Low viscous liquid	Low viscous liquid
• <b>Color</b>		Translucent	Translucent
• <b>Density at 23°C</b>	(g/cm <sup>3</sup> approx.)	1.10	1.08
• <b>Viscosity at 23°C</b>	(mPa·s approx.)	5000	4000

Silbione® RTV 4528 A ..... 100 parts

Silbione® RTV 4528 B ..... 100 parts

<u>2. Mixed Component</u>		<u>RTV 4528 A &amp; B</u>
<u>Property</u>		
• <b>Working Time at 23 °C</b>	(minutes)	60
• <b>Tack-free Time at 23 °C</b>	(minutes approx.)	180
• <b>Mixing Viscosity at 23 °C</b>	(mPa·s approx )	4000

**Remark:** Curing the silicone at elevated temperature has no influence on the properties of Silbione® RTV 4528 A & B.

<u>3. Cured Compound</u>		
		<u>Mechanical properties</u> measured after curing for 30 min. at 80 °C
	<u>SILBIONE® RTV</u>	<u>RTV 4528 A &amp; B</u>
• <b>Shore 00 Hardness</b>	(point)(DIN 53 505)	28
• <b>Tensil Strength</b>	(N/mm <sup>2</sup> , env.)(DIN 53 504 – specimen S3A)	1.5
• <b>Elongation</b>	(%, env.)(DIN 53 504 – specimen S3A)	800

**Please note:** The typical properties listed in this bulletin are not intended for use in preparing specifications for any particular application of Bluesil® silicone materials. Please contact our Technical Service Department for assistance in writing specifications.

## Silbione® RTV 4528 A & B

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### Instructions for use

#### 1. Mixing the two components

**Silbione® RTV 4528 A & B** is mixed by weight in a fixed ratio given above.

The two components may be thoroughly mixed either by hand or using a low-speed electric or pneumatic mixer to minimise the introduction of air and to avoid any temperature increase. *Note: It is also possible to use a special mixing and dispensing machine for the two silicone components. Further information is available upon request.*

#### 2. Molding

The mixture should be degassed preferably < 50 mbar to eliminate any entrapped air. If a dispensing machine is used, the two components are degassed separately prior to mixing. The silicone mixture expands to 3 to 4 times of its initial volume and bubbles rise to the surface. The bubbles progressively disappear and the mixture returns to its initial volume after 5 to 10 minutes. Wait a few minutes to complete the degassing and then flash the vacuum. The silicone is ready for pouring, either by gravity or under low pressure.

*Note: Flashing the vacuum once or twice accelerates the degassing. It is recommended to use a container with a high diameter / height ratio (3 to 4 times of the initial volume)*

#### 3. Polymerisation

The system, as indicated in the technical data, polymerises at 23 °C. The curing may be slowed down at lower temperature and contrary accelerated by heat.

*Note: In general contact with certain materials can inhibit the crosslinking of RTV. See list below:*

- natural rubbers vulcanised with sulphur,
- RTV elastomers catalysed with metal salts, e.g. tin compounds,
- PVC stabilised with tin salts and additives,
- epoxy catalysed with amines,
- certain organic solvents, e.g. ketones, alcohols, ether etc.

*In case of doubts, it is recommended to test the substrate by applying a small quantity of the mixed silicone on a restricted area.*

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### Bio-compatibility

Toxicological and biocompatibility tests performed on polyaddition **Silbione® RTV 4528 A & B** (acute oral cytotoxicity test, skin irritation and sensitivity test) have shown that these products are non toxic and are biocompatible in accordance with European regulations (Directive 93/42/EEC dated June 14<sup>th</sup>, 1993)

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### Storage and shelf life

The **Silbione® RTV 4528 A & B** when stored in its original unopened packaging, at a temperature below 30 °C, may be stored for 6 months from the date of manufacture. Beyond this date, Bluestar Silicones no longer guarantees that the product meets the sales specifications.

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### Safety

Please read the container labels for **Silbione® RTV 4528 A & B** or consult the Safety Data Sheet (SDS) before handling for safe use, physical and health hazard information. The SDS is not included with the product packaging, but can be obtained by contacting Elkem Silicones at 866-474-6342 or consult your Elkem Silicones representative.

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### Packaging




**Silbione® RTV 4528 A & B** is delivered in 50 kg kits. If needed special containers are available on request.

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