

# Silbione® RT Gel 4220, 4521 A/B

October 2017

## Silicone Gels for Damping and Cushioning

**Description** **Silbione® RT Gels** are two component silicone elastomers that crosslink at room temperature by polyaddition reaction. The polymerization can be accelerated by heat.

The silicone materials are delivered as two low viscous liquid components, which once mixed and cured, transform into an elastic and resistant material. Polymerization occurs without the evolution of heat.

**Applications**

- Orthopedic devices
- Cushioning elements/mattresses

**Advantages**

- Excellent shock absorption
- Very good pressure dissipation
- Light weight grade available
- Very good adhesion on PU films

### Typical Properties

#### 1. Characteristics of the non-cured product

Properties	RT Gel 220		RT Gel 4521	
	A	B	A	B
<b>Appearance</b>	Low viscous liquid			
<b>Color</b>	Transparent		White	
<b>Specific Gravity</b> <i>g/cm3 approx. @23°C</i>	0.98		0.72	
<b>Viscosity</b> <i>mPa-s, approx. @23°C</i>	1000		6000	

#### 2. Polymerization

Silbione® RT Gel A ..... 100 parts  
 Silbione® RT Gel B ..... 100 parts

Properties	RT Gel 4220	RT Gel 4521
<b>Working time*</b> <i>minutes @23°C</i>	50	60
<b>Mixing Viscosity</b> <i>mPa-s approx. @23°C</i>	1100	6000

**Note:** \* Higher temperatures reduce the times, lower temperatures extend the times.

**3. Characteristics of the cured product**

Properties	RT Gel 4220	RT Gel 4521
<b>Penetration, mm/10</b> approx. cured 30 minutes at 120°C, hollow cone (62,5 g), DIN ISO 2137	195	190

Due to the inherently weak structural network of silicone gels, mechanical properties cannot be measured on cured gels.  
**Note:** Curing the silicone at elevated temperature has no influence on the properties of the gel.

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**Instructions  
for use**

**Remix each of the two components (part A and B) every time before using.**

**1. Mixing the two components**

The components A and B are mixed by weight in the indicated ratio. The two components may be thoroughly mixed either by hand or using a low-speed electric or pneumatic mixer to minimize 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. Degassing**

The mixture should be degassed preferably at 30 to 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 release the vacuum. The silicone is ready for pouring, either by gravity or under low pressure.

Note: Releasing the vacuum several times improves the degassing. For easier degassing fill a recipient only to 1/3 of its height. It is recommended to use a container with higher diameter / height ratio.

**3. Polymerization**

**SILBIONE® RT GEL 4220 & 4521** cure at 23 °C. The curing may be slowed down at lower temperature and contrary accelerated by heat.

**Note:** Be aware that contact with certain materials can inhibit the curing of this RT GEL:

- natural rubbers vulcanized with sulphur,
- RTV elastomers catalyzed with metal salts, e.g. tin compounds,
- PVC stabilized with tin salts and additives,

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- epoxy catalyzed 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. Take note that cross contaminations due to improperly cleaned tools or devices are a most frequent cause for inhibition.

### Bio-compatibility

Extensive toxicology testing on **Silbione®** products has demonstrated their adequate biocompatibility and suitability for the recommended applications. Our evaluations according to EN/ISO 10993 showed that **Silbione®** products are neither non skin irritating nor skin sensitizing materials. They satisfy regulatory requirements in several countries, in particular those of class I medical devices as in 93/42/CEE European Directive, or those of US Pharmacopeia class VI. Toxicological summaries, statements and specific regulatory status are available upon request from your Elkem Silicones contact.

### Storage and shelf life

**Silbione® RT GEL 4220 & 4521** when stored in its original unopened packaging, at a temperature of between – 10° and + 30°C, the **Silbione® RT GEL 4521** may be stored for up to 3 months from the date of manufacture clearly marked on the packaging. The **Silbione® RT GEL 4220** may be stored for up to 12 months from the date of manufacture. Beyond this date, Elkem Silicones no longer guarantees that the product meets the sales specifications.





### Safety

Please read the container labels for **Silbione® RT GEL 4220 & 4521** 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.

### Packaging

**Silbione® RT GEL 4220 & 4521** are available in multiple packages, please check with our team.

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 EUROPE	 NORTH AMERICA	 LATIN AMERICA	 ASIA PACIFIC
<p><i>Elkem Silicones France</i>            21 Avenue Georges Pompidou            F69486 Lyon Cedex 03            FRANCE            Tel. (33) 4 72 13 19 00            Fax (33) 4 72 13 19 88</p>	<p><i>Elkem Silicones USA</i>            Two Tower Center Boulevard            Suite 1601            East Brunswick, NJ 08816-1100            United States            Tel. (1) 732 227 2060            Fax (1) 732 249 7000</p>	<p><i>Elkem Silicones Brazil Ltda.</i>            Av. Maria Coelho Aguiar, 215            Bloco G - 1º Andar            05804-902 - São Paulo - SP -            Brazil            Tel. (55) 11 3747 7887            Fax (55) 11 3741 7718</p>	<p><i>Elkem Silicones Hong Kong</i>            Trading Co. Ltd.            Unit C, 18/F Manulife Tower            169 Electric Road            North Point-Hong Kong            Tel. (852) 3106 8200            Fax (852) 2979 0241</p>
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