

# BLUESIL RTV 3430 SB A-B

<b>Description</b>	The <b>BLUESIL RTV 3430 SB A&amp;B</b> – is a two component, silicone elastomers which cures at room temperature by a polyaddition reaction.
<b>Examples of applications</b>	This product is specifically formulated to produce silicone molds having very good release properties the molds can be used therefore for the production of manufactures (e.g. ornamental or decoration parts) made of casting materials requiring careful demolding.
<b>Key benefits</b>	<ul style="list-style-type: none"> <li>• Very good release properties.</li> <li>• High mechanical strength.</li> <li>• Excellent details reproduction.</li> </ul>

## Typical properties

### 1. Characteristics of the non cured product

Properties	RTV 3430 SB A	RTV 3430 SB B
<b>Appearance</b>	Viscous liquid	Viscous liquid
<b>Color</b>	Colorless	Gray
<b>Specific gravity</b> (at 23°C, g/cm <sup>3</sup> , approx)	1.2	1.0
<b>Viscosity</b> (at 23°C, mPa.s, approx)	28 000	2 000

### 2. Polymerization

**BLUESIL RTV 3430 SB A:** 100 parts

**BLUESIL RTV 3430 SB B10:** parts

Properties	BLUESIL RTV 3430 SB A&B
<b>Color</b>	Gray
<b>Pot life</b> (at 23°C, minutes)	180
<b>Demolding time</b> (at 23°C, hours)	24

**Remark:** Higher temperatures reduce pot life, lower temperatures prolong pot life. If curing is accelerated by heat the properties of **BLUESIL RTV 3430 SB A&B** are not modified. However dimensional changes do occur during post curing of which must be taken into account (for detailed information on dimensional shrinkage see §.4 below)

### 3. Characteristics of the cross linked product

Measured after curing 24 h at 23°C

Properties	BLUESIL RTV 3430 SB A&B
<b>Hardness Shore A</b> (On a 6 mm thick specimen, approx.)	28
<b>Tensile strength at break</b> (MPa, approx.)	4.5
<b>Elongation at break</b> (% , approx.)	450
<b>Tear strength</b> (KN/m, approx.)	20

# BLUESIL RTV 3430 SB A-B

Linear shrinkage (% , 7 days after curing at 23°C )	0.1
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## 4. Dimensional stability of the crosslinked product

The dimensional changes of molds made with **BLUESIL RTV 3430 SB** can be due to both temperature change or repeated usage. Each effect does not exclude the other one.

### 4.1 Temperature driven volume changes

Once crosslinked, **BLUESIL RTV 3430 SB** is a silicone elastomer which, as all materials and especially elastomers, undergoes thermally driven volume changes. That means that any increase / decrease of temperature of the cured mold causes respectively a volume increase / decrease of the mold itself.

The thermal expansion coefficient of the product is roughly  $\alpha_V = 5 \cdot 10^{-4} \text{ } ^\circ\text{C}^{-1}$  (volumetric) or  $\alpha_L = 1,7 \cdot 10^{-4} \text{ } ^\circ\text{C}^{-1}$  (linear). By considering these values, following examples can show the influence of temperature on the dimensions of a rectangular mold.

Temperature of crosslinking	Mold dimensions at crosslinking temperature	Temperature of mold use	Mold dimensions at use temperature
23°C	10 x 2 x 1 m V = 20 m <sup>3</sup>	100°C	10,13 x 2,03 x 1,01 m V = 20,77 m <sup>3</sup>
50°C		0°C	9,91 x 1,98 x 0,99 m V = 19,50 m <sup>3</sup>
150°C		23°C	9,78 x 1,96 x 0,98 m V = 18,73 m <sup>3</sup>

### 4.2 Usage driven volume changes

**BLUESIL RTV 3430 SB** is a self-bleeding grade: a not-reactive silicone oil migrates to the surface of the silicone mold, imparting excellent release properties to the mold. This silicone oil can be extracted by the reproduction material casted into the silicone mold. A quantitative indication of the oil extraction and hence of the dimensional decrease cannot be given, depending that on the kind of reproduction material used, on its residence time in the mold and on the temperature. Usually, the longer the residence time of the reproduction material into the mold and the higher the number of castings, the more effective the extraction of the silicone oil. After repeated castings, the extraction of the oil can cause a significant shrinkage of the mold dimension.

This effect is not related to the temperature driven dimensional change.

It is therefore strongly recommended to take into account these two possible dimensional changes before planning the reproduction of geometries that need high dimensional accuracy. Please note: The typical properties are not intended for use in preparing specifications. Please contact our local Sales Department for assistance in writing specifications.

## Instruction of use

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

### 1. Mixing of the two components

Add 10 parts of **BLUESIL RTV 3430 SB B** to 100 parts of **BLUESIL RTV 3430 SB A**.

The two components may be intimately mixed either by hand or using a low-speed electric or pneumatic mixer to minimize the introduction of air into the mixture.

### 2. Degassing

After mixing **BLUESIL RTV 3430 SB A&B**, it is strongly recommended to eliminate entrapped air. Any air bubble included in the cured silicone mold represents weakness points of the mold

# BLUESIL RTV 3430 SB A-B

itself, decreasing both its mechanical resistance and the resistance to diffusion of the casting material inside the mold.

If the processing is done with the help of a machine and a static mixer, the two parts are degassed separately before mixing.

The **BLUESIL RTV 3430 SB A&B** is degassed under a vacuum of 30 to 50 mbar. Under vacuum, the product expands 3 to 4 times its initial volume and forms bubbles on its surface. These bubbles will disappear gradually and the mixture will sink back down to its initial volume within few minutes. Then the vacuum can be released.

**Remark:** release the vacuum several times imes the degassing. For easier degassing only fill a recipient to 1/3 of its height.

### 3. Cross linking

The best curing conditions are at 23°C. The use of the product at higher temperatures will reduce the pot life and increase the setting rate. As opposed to this, lower temperatures will increase the pot life and decrease the setting time.

At 23°C, the cured silicone can be demoulded after the time indicated as "demolding time"" (see § 2.Polymerization, pag.1). In order to achieve the best possible performance levels from the molds, it is preferable to wait for 24 hours before using them.

Room temperature curing assures the lowest possible shrinkage, if accelerated cure is desired, mild heat should be preferred. To minimize shrinkage, the elastomer can be cured at a temperature of 60°C; higher temperatures will cause higher shrinkage.

Be aware that contact with certain materials can inhibit the curing of this RTV:

- Sulphur and its derivatives (e.g. sulphur containing clays; natural rubbers vulcanized with sulphur)
- Ammonia and amines (e.g. amine cured epoxies, epoxy curing agents)
- Chlorides
- Polycondensation RTV catalysed with metal salts
- PVC stabilizing agents
- Silver salts

If doubts exist it's recommendable to run a quick test with a small quantity of material in order to assess compatibility. Take duly note that cross contamination due to not well cleaned tools or devices is frequently the main cause of inhibition. The best way is to use only dedicated gear when processing polyaddition RTVs.

<b>Regulation</b>	Please consult your local ELKEM SILICONES sales office.
<b>Limitations</b>	<p>higher temperatures will cause higher shrinkage. See however § 4.Dimensional stability of the crosslinked product (pag.2) for more detailed information.</p> <p>Be aware that contact with certain materials can inhibit the curing of this RTV:</p> <ul style="list-style-type: none"> <li>• and its derivatives (e.g. sulphur containing clays)</li> </ul>
<b>Packaging</b>	<ul style="list-style-type: none"> <li>• BLUESIL RTV 3430 SB A is available in                             <ul style="list-style-type: none"> <li>○ Drum of 20 KG (44.1 LB)</li> </ul> </li> <li>• BLUESIL RTV 3430 SB B is available in                             <ul style="list-style-type: none"> <li>○ Piece of 2 KG (4.41 LB)</li> </ul> </li> </ul>
<b>Storage and shelf life</b>	<p>When stored in its original packaging:</p> <p>BLUESIL RTV 3430 SB A may be stored at a temperature below 40°C / 104°F for up to 12 months from its date of manufacturing.</p> <p>BLUESIL RTV 3430 SB B may be stored at a temperature below 40°C / 104°F for up to 12 months from its date of manufacturing.</p>

# BLUESIL RTV 3430 SB A-B

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Comply with the storage instructions and expiration date marked on the packaging. Beyond this date, Elkem Silicones no longer guarantees that the product meets the sales specifications.

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**Safety**

Please consult the Safety Data Sheet of:  
BLUESIL RTV 3430 SB A and BLUESIL RTV 3430 SB B

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