DELIVERING
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Bluesil® RTV 3130, 3131, 3131 SC, 3132 A&B

October 2017

High performance Pad Printing range

Description

The **Bluesil® RTV 3130 A&B, RTV 3131 A&B, RTV 3131 A&B SC and RTV 3132 A&B** are two component silicone elastomers which cure at room temperature by a polyaddition reaction.
This reaction can be accelerated by heat.

Applications

These products are specifically formulated for the production of printing pads.

Advantages

- High purity products particularly designed for printing pads production
- Outstanding mechanical properties
- Excellent solvent resistance
- Adjustable hardness by diluting with silicone oils
- Antistatic properties for **Bluesil® RTV 3132**
- Possibility to choose between longer (**Bluesil® RTV 3130 and 3131 SC**) or shorter
- working time (**Bluesil® RTV 3131**)
- Customizable pads color with **Bluesil® RTV 3131 or RTV 3131 SC**.

Typical Properties

Non-cured product properties:

Properties	RTV 3130		RTV 3131		RTV 3131 SC		RTV 3132	
	A (base)	**B** (Pt)	**A** (base)	**B** (Pt)	**A** (base)	**B** (Pt)	**A** (base)	**B** (Pt)
Aspect	viscous fluid							
Viscosity *(At 23°C, mPa.s, ISO 3219, approx.)*	25.000	15.000	25.000	15.000	25.000	15.000	30.000	4.000
Color	colorless	dark red	colorless	colorless	colorless	colorless	colorless	blue
Specific gravity *(g/cm^3, approx.)*	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1

Polymerization:

Bluesil® RTV 3130 A&B, RTV 3131 A&B, RTV 3131 A&B SC and RTV 3132 A&B polymerize at a mixing ratio of 10:1.

Properties	RTV 3130 A&B	RTV 3131 A&B	RTV 3131 SC A&B	RTV 3132 A&B
Mixing ratio	A : B = 10 : 1			
Color	Dark red	Colorless	Colorless	Blue
Pot life *(At 23°C, minutes)*	60	10	60	15
Demolding Time *(At 23°C, hours)*	5	1	5	2

Remark: *Higher temperatures reduce pot life, lower temperatures prolong pot life.*
If curing is accelerated by heat the properties of the ***Bluesil® RTV 3130 A&B, Bluesil® RTV 3131 A&B, Bluesil® RTV 3131 SC A&B and Bluesil® RTV 3132 A&B*** *are not modified.*
However dimensional changes may occur during post curing at high temperatures of which it must be taken into account.

Characteristics of the cross linked product:

Measured after curing 24 hours at 23°C.

Properties	RTV 3130 A&B	RTV 3131 RTV 3131 SC A&B	RTV 3132 A&B
Hardness *(Shore A)*	30	30	32
Tensile strength at break *(MPa)*	6.5	6.5	6.5
Elongation at break *(%)*	500	500	450
Tear strength *(KN/m)*	21	21	20
Linear shrinkage *(%)*	< 0.1	< 0.1	< 0.1
Antistatic behavior	no	no	YES

Processing

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

1. Mixing of the two components
For each product, mix the two parts **Bluesil®** RTV A and **Bluesil®** RTV B according to the mix ratio A : B = 10 : 1.
In the case of **Bluesil®** RTV 3131 A&B and RTV 3132 A&B, because of their short working time it is recommended to mix and dispense the product by means of a static mixer, after degassing the two parts separately (see § 2. Degassing below).

For **Bluesil®** RTV 3130 A&B and RTV 3131 SC A&B, the two components may be intimately mixed either by hand or by means of a low-speed electric or pneumatic mixer to minimize the introduction of air into the mixture.

2. Degassing

After mixing of A- and B- part of any of the four grades, it is recommended to eliminate entrapped air: if the mixing is done with the help of a machine and a static mixer, like recommended for **Bluesil®** RTV 3131 A&B and RTV 3132 A&B, both parts are degassed before mixing. When A- and B- part are manually mixed, like for **Bluesil®** RTV 3130 A&B or RTV 3131 SC A&B, the degassing of the mixed product occurs 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 5 minutes. Release the vacuum and repeat the operation a few minutes later.
The same applies also for the degassing of the two separated parts.
Remark: release the vacuum several times improves the degassing. For easier degassing only fill a recipient to 1/3 of its height.

3. Crosslinking

The best curing conditions are at 23°C. When using the products at higher temperatures, the pot life is shorter and the setting rate faster. As opposed to this, lower temperatures increase the pot life and decrease the setting rate.
Room temperature curing assures the lowest possible shrinkage, if accelerated cure is desired, mild heat should be preferred. To minimize shrinkage the elastomer should be cured at maximum temperature of 60°C, higher temperatures might cause higher shrinkage.
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 pads, it is preferable to wait for 24 hours before using them.
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 is 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 and not to exchange drum covers.

4. Processing aids

4.1 Adhesion promoters ("primers")

In order to achieve adhesion of **Bluesil®** RTV 3130 A&B, RTV 3131 A&B, RTV 3131 SC A&B or RTV 3132 A&B on the pad support, it is recommended to prime the support with an adhesion promoter. Elkem Silicones recommends the use of both primers **Bluesil®** PRIM PM 820 and **Bluesil®** PRIM PM 811 A&B according to the instructions next page.

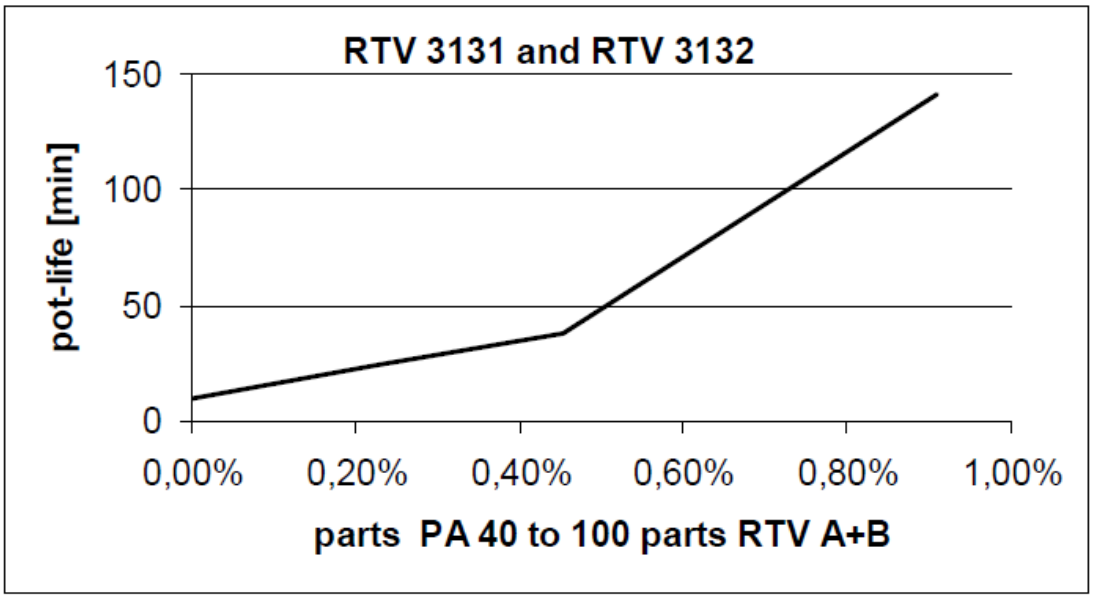
	BLUESIL PRIM PM 820	BLUESIL PRIM PM 811 A&B
Substrate	Metal (steel, aluminum), plastic (polyester), reinforced resins	
Pot-life A+B	n.a. (monocomponent)	> 3 days
Usage level	Very thin layer (30÷60 g/m2)	
Use guideline	1. Application of PM 820 2. Wait 30 minutes 3. Application of PM 811 4. Wait 30 minutes up to 7 days 5. Application of RTV-2 Silicone	
Application by	Spray, brush, cloth	

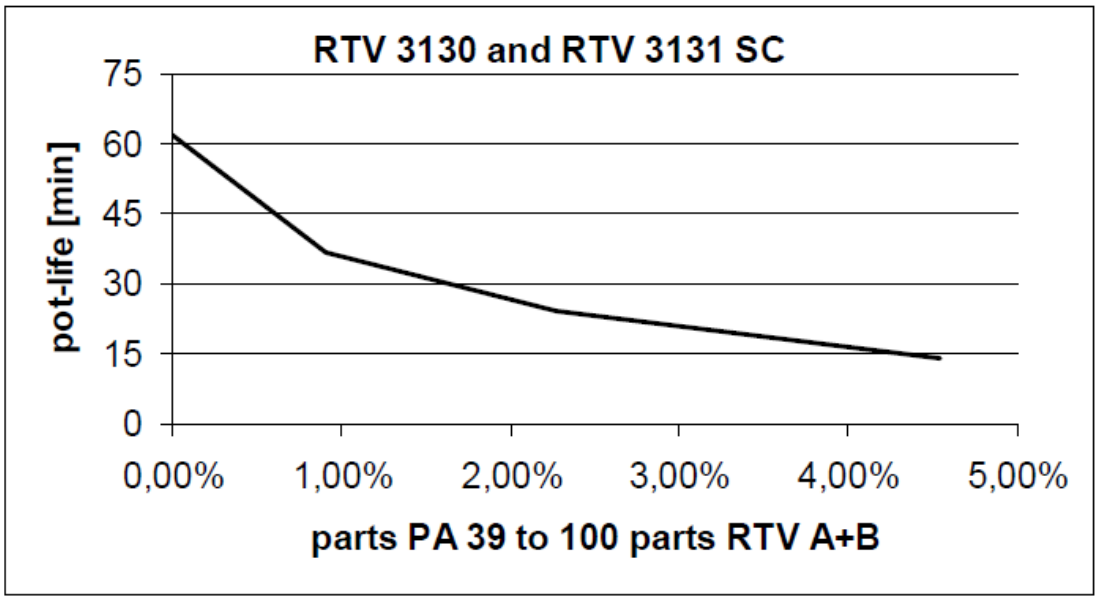
For more detailed information, please refer to the Technical Data Sheet of the primers.

4.2 Crosslinking accelerator / retardant
Should it be desired to change the polymerization time of **Bluesil®** RTV 3130 A&B, **Bluesil®** RTV 3131 A&B, **Bluesil®** RTV 3131 SC A&B and **Bluesil®** RTV 3132 A&B products, following additives allow a customization by increasing the pot-life (Retarder **Bluesil®** RTRD PA 40) or by shortening it (Accelerator **Bluesil®** ACC PA 39). Information on their use are shown in the table below.

	BLUESIL ACC PA 39	BLUESIL RTRD PA 40
usage level	0.1 ÷ 5 %	0.1 ÷ 1 %
use	mix PA39 into Pt catalyst part	mix PA40 into base part
suggested for	**RTV 3130, RTV 3131 SC**	**RTV 3131, RTV 3132**

As an indication, the effects of the two additives on the pot-life are shown in the graphs next page.



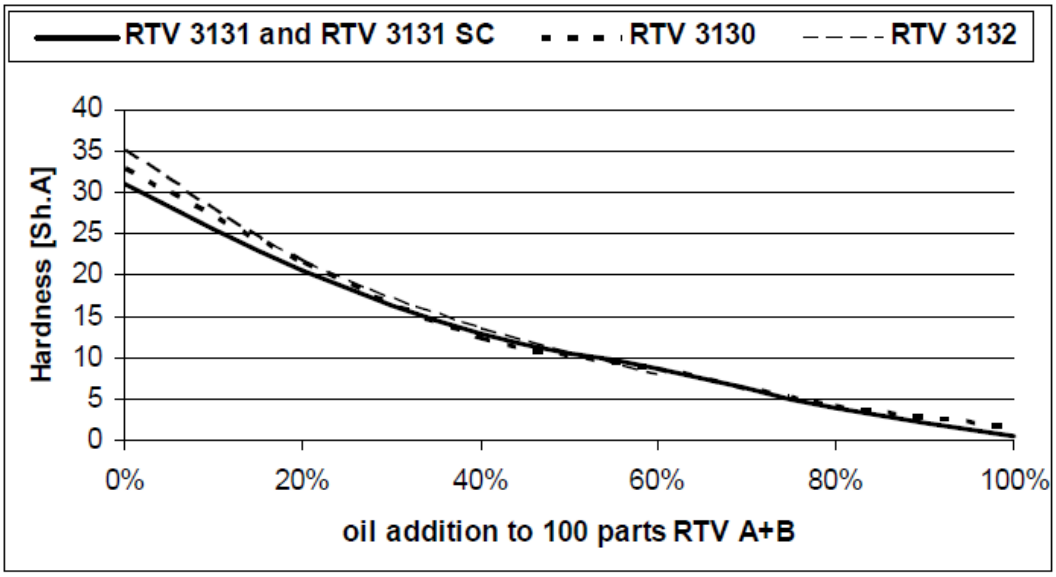


For more detailed information, please refer to the technical datasheet of the single additives.

4.3 Oil dilution

The hardness of **Bluesil®** RTV 3130 A&B, RTV 3131 A&B, RTV 3131 SC A&B and RTV 3132 A&B can be adjusted by means of a non reactive silicone oil, that plasticizing the silicone network lowers the material hardness. Elkem Silicones offers the low viscosity silicone oil **Bluesil®** FLD 47V50, that can be added to the **Bluesil®** RTV A&B products as schematically shown in the graph next page.

Bluesil® RTV 3130, 3131, 3131 SC, 3132 A&B



Storage and shelf life	For shelf life, please refer to the expiry date (to be used before « month-year ») marked clearly on the packaging.
Safety	Please consult the Safety Data Sheets of **Bluesil®** RTV 3130 A&B, **Bluesil®** RTV 3131 A&B, **Bluesil®** RTV 3131 SC A&B and **Bluesil®** RTV 3132 A&B.
Packaging	**Bluesil®** RTV 3130 A&B, **Bluesil®** RTV 3131 A&B, **Bluesil®** RTV 3131 SC A&B and **Bluesil®** RTV 3132 A&B are available in multiple packages, please check with our team.

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