BLUESIL™ RTV 141 A & B

Silicones — Delivering your potential

Technical Data Sheet n° SIL 18 036 3 – May 2018
Cancels and replaces SIL 11 511 3

Description

BLUESIL RTV 141 A&B is a two component, polyaddition reaction, room temperature curing silicone elastomer. Curing can be accelerated by heating.

After mixing the two components **BLUESIL RTV 141 A&B** forms a relatively low viscosity, colorless liquid which transforms into an elastic and transparent material once cured. The reaction does not give off any heat.

Examples of applications

- Coating or potting protection of electronic components and electrotechnical equipment.
- Opto-electronic links.
- Insulation of light sensitive cells.
- Sheathing of step index optic fibers.

Key benefits

- TRANSPARENCY, good optical transmission.
- GOOD POURABILITY, for easy filling.
- Possibility of adding fillers.
- Good reversion resistance in confined spaces.

Typical properties

1. Components of BLUESIL RTV 141 A&B

Properties	**BLUESIL RTV 141 A**	**BLUESIL RTV 141 B**
Physical state	Slightly viscous liquid	Slightly viscous liquid
Appearance	Clear or slightly cloudy	Clear or slightly cloudy
Color	Colorless	Colorless
Specific gravity at 25°C, approx.	1.02	1.02
Viscosity at 25°C,mPa.s, approx.	3500	650

2. Mixing the two components

BLUESIL RTV 141 A..... 100 parts
BLUESIL RTV 141 B..... 10 parts

Viscosity of RTV 141A&B mixture 25°C, mPa.s, approx. 4000

Pot life of the catalysed mixture at 25°C, hours, approx..... 4

Gellnorm at 50°C, minutes, approx..... 40

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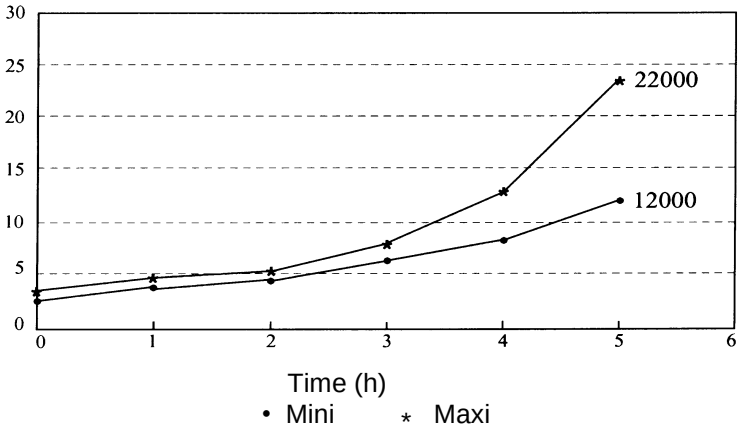
BLUESIL™ RTV 141 A & B

Typical properties
(cont')

RTV 141 Change in viscosity

Viscosity Pa.s



Time after which the elastomer (or the object)
can be handled at 25 °C, approx..... 24 to 48 h

3. Cured compound

3.1. Mechanical properties
Measured after curing 1 hour at 150 °C

3.1.1. On 6 mm thick specimen

Shore A hardness, points, approx..... 50
(Standard ASTM D 2240)

3.1.2. On 2 mm thick film

Tensile strength, MPa, approx. 6.0
(Standard AFNOR NF T 46002)

Elongation at break, %, approx..... 120
(Standard AFNOR NF T 46002)

3.2. Physical properties

Linear shrinkage, %, approx. 1.2
Refractive index, n^{25} approx. 1.406
Volume expansion coefficient, K^{-1}, approx. ..... $9.9.10^{-4}$
Thermal conductivity, W(m.K), approx..... 0,16
Brittle point, °C, approx. ..... – 70
(Standard ASTM D 746)
Peak thermal withstand, °C, approx. ..... + 200

Comment:
Curing at room temperature gives low linear shrinkage (0.4 %), however it stops the cured compound from reaching its optimum mechanical properties.

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Typical properties *(cont')*

3.3. Dielectric properties

Dielectric strength, kV/mm, approx. 20
(Standards AFNOR NF C 26225 et CEI 243)

Dielectric constant at 1 kHz, approx. 2.7
(Standards AFNOR C 26 230 et CEI 250)

Dielectric dissipation factor at 1 kHz, approx. ..... 1.10^{-3}
(Standards AFNOR NF C 26 230 et CEI 250)

Volume resistivity, Ω.cm, approx. ..... 1.10^{15}
(Standards AFNOR NF C 26215 et CEI 93)

***Please note:** The typical properties are not intended for use in preparing specifications. Please contact our local Sales Department for assistance in writing specifications.*

Instructions of use

Remix each of the two components (base + catalyst) before each use.

1. Mixing the two components

Add 10 parts of **BLUESIL RTV 141 B to** 100 parts of **BLUESIL RTV 141 A**.

The two components are thoroughly mixed using an electrical or pneumatic mixer, on a low speed setting so as to limit the inclusion of air in the mixture. A dispensing machine can also be used.

2. Degasing

After mixing parts A&B, it is preferable to degas the products to eliminate the air bubbles that would be visible in the finished part and which would reduce the mechanical and dielectrical properties.

Degasing is generally carried out with a vacuum of 30 to 50 mbar releasing the vacuum several times during the operation. This product is particularly long to degas.

A recipient with a high diameter/height ratio is better suited to quick degasing; however the height must be sufficient to contain the swelling of the elastomer under vacuum conditions.

3. Pouring the mixture

BLUESIL RTV 141 is poured slowly and regularly.

In the case of a high thickness coating operation, the casting must be made at the lowest point in the volume to be filled; this avoids forming and including air bubbles in the volume.

It should not be filled totally to allow expansion of the RTV at service temperatures.

4. Curing

At 23 °C, demoulding of **BLUESIL RTV 141 A&B** is possible after approximately 24 to 48 hours at room temperature. Heat helps to accelerate curing.

Recommended curing temperature:

- 4 hours at 60°C
- or 2 hours at 100°C
- or 1 hour at 150°C

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Instructions of use *(cont')*

***Comment**: Certain materials that the RTV may be in contact with when curing could inhibit the reaction:*

- *Sulphur-containing cured natural and synthetic rubber compounds*
- *RTV's catalysed with metal salts*
- *PVC stabilized with tin salts*
- *Epoxydes catalysed with amines*

If in doubt, it is recommended to carry out a test beforehand.

*It is also recommended to keep special degasing equipment for this type of RTV. Indeed, degasing of other products in the same container could pollute the latter and be detrimental to the curing of **BLUESIL RTV 141 A&B**.*

5. Adhesion

Adhesion is achieved on most materials using PRIM PMB 821 (after degreasing beforehand with a solvent), applied by immersion or with a brush, then dried for 30 minutes at approx. 25°C. For optimum adhesion, the RTV must be poured within the following four hours.

Excess primer deteriorates the adhesion level. When PRIM PMB 821 does not give sufficient results, another primer can be recommended, please consult us.

Specific case of repair work:

An object coated in **BLUESIL RTV 141** can be repaired: after cutting, simply make up the volume of elastomer with more, new **BLUESIL RTV 141** which has strong self adhesion without the need for a primer.

Repair of **BLUESIL RTV 141** is invisible in the transparent bulk; however, the incision should be made at the last minute to avoid any soiling of the surfaces before the new product is poured in.

Make sure that packaging is hermetically closed again each time it is used.

Packaging

BLUESIL RTV 141 A&B are delivered in kits of 1 kg of part A + 0.100 kg of part B.

BLUESIL RTV 141 A is also available in 25 and 200 kg packs and the corresponding 2.5 and 20 kg packs of **BLUESIL RTV 141 B.**

Storage and shelf life

When stored in its original packaging at a temperature of between –5°C and +30°C, **BLUESIL RTV 141 A&B** may be stored for up to 24 months from its date of manufacture.

Comply with the storage instructions and expiry date marked on the packaging.

Beyond this date, Elkem Silicones no longer guarantees that the product meets the sales specifications.

Safety

Please consult the Safety Data Sheet of **BLUESIL RTV 141 A&B.**

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