BLUESIL™ RTV 147 A & B - RTV 148 A & 147 B

Description

BLUESIL RTV 147 A & B and RTV 148 A & 147 B are two component, polyaddition reaction, room temperature curing silicone elastomers. Curing can be accelerated by heating.

It is possible to mix **BLUESIL RTV 147 A and 148 A** to give an elastomer of intermediary hardness. These mixtures are combined with **BLUESIL 147 B** in the proportions given in this technical datasheet.

After mixing the two components (parts A and B), **BLUESIL RTV 147 and 148** form a flowing paste which transforms into an elastic material once cured. The reaction does not give off any heat.

Examples of applications

- Producing thermal protection.
- Producing flexible, moulded insulators.
- Producing moulded joints.
- Encapsulation protection of electrotechnical systems.

Advantages

- Possible to cure quickly by heating to 150 °C with curing taking place without any bubble formation.
- Good reversion resistance.
- Very good heat stability.
- Good heat stability in confined environments.

Characteristics

1. Components of BLUESIL RTV 147 and 148

Properties	BLUESIL RTV 147 A	BLUESIL RTV 148 A	BLUESIL RTV 147 B
Aspect	Very viscous Liquid	Viscous liquid	Viscous liquid
Colour	Beige	Beige	Pale Blue
Specific gravity at 25°C, approx.	1.24	1.23	1.25
Viscosity at 25 °C, mPa.s, approx.	150 000	10 000	10 000

2. Mixing the two components

BLUESIL RTV 147 A ..... 100 parts
BLUESIL RTV 147 B ..... 10 parts
Viscosity of **RTV 147 A&B** mixture at 23°C, mPa.s, approx. 150 000
Pot life of the catalyzed mixture at 23 °C, approx. ..... 2 h

BLUESIL RTV 148 A ..... 100 parts
BLUESIL RTV 147 B ..... 10 parts
Viscosity of **RTV 148 A** and **147 B** mixture at 23°C, mPa.s, approx..... . 10 000
Pot life of the catalyzed mixture at 23 °C, approx. ..... 4 h

Time after which the products (**RTV 147** and **148**)
can be handled (or demoulded) at 23 °C à 23°C ..... 24 to 48 h

BLUESIL™ RTV 147 A & B - RTV 148 A & 147 B

Characteristics
(cont')

3. Cured compound

3.1 Mechanical properties

Measured after curing 1 hour at 150 °C.

Properties	BLUESIL RTV 147 A : 100 p RTV 147 B : 10 p	BLUESIL RTV 148 A : 100 p RTV 147 B : 10 p	BLUESIL RTV 147 A : 50 p RTV 148 A : 50 p RTV 147 B : 10 p
On 6 mm thick specimen			
Shore A hardness, points, approx. *(Standard ASTM D 2240)*	60	40	55
On 2 mm thick film			
Secant modulus at 100% elongation, MPa, approx. (*Standard AFNOR NF T 46002*)	3.2	2.2	3.3
Tensile strength, MPa, approx. *(Standard AFNOR NF T 46002, spec. H_2)*	6.0	3.5	5.0
Elongation at break, %, approx. *(Standard AFNOR NF T 46002, spec. H_2)*	180	160	150
Tear strength, kN/m approx. *(Standard ASTM D 624, spec. A with notch)*	> 15	-	5.0

3.2 physical properties

BLUESIL RTV 147 and 148

Linear shrinkage, % ..... around 0.1 *(after curing at 23°C)*
around 1.3 *(after curing at 110°C)*

Volume expansion coefficient, K^{-1}, approx ..... 9.10^{-4}

Thermal conductivity, W(m.K), approx. 0.31

Brittle point, °C, approx. ..... - 70 *(Standard ASTM D 746)*

Peak thermal withstand, °C, approx. ..... + 300

BLUESIL™ RTV 147 A & B - RTV 148 A & 147 B

Characteristics *(cont')*

3.3 Dielectric properties

BLUESIL RTV 147 and 148

Dielectric strength, kV/mm, approx..... 18
(Standards AFNOR NF C 26225 et IEC 243)

Dielectric constant at 1 kHz, approx..... ..... 2.9
(Standards AFNOR C 26 230 et IEC 250)

Dielectric dissipation factor at 1 kHz, approx.... .... 3.10^{-3}
(Standards AFNOR NF C 26 230 et IEC 250)

Volume resistivity, Ω.cm, approx..... ..... 5.10^{14}
(Standards AFNOR NF C 26215 et IEC 93)

Comment: the above values cannot be used for specifications. To write such a document, please consult us.

Processing

Remix each of the 2 components (parts A and B) every time before using.

1. Compatibility

BLUESIL RTV 147 A and **148 A** can be mixed in any proportion so as to adjust the pouring viscosity to the required value.

2. Mixing the two components

Add 10 parts of **BLUESIL RTV 147 B** to 100 parts of **BLUESIL RTV 147 A** or **RTV 148 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.

3. Degasing

After mixing parts A and 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 once or twice during the operation.

Due to its viscosity, **BLUESIL RTV 147** 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.

4. Pouring / encapsulating

BLUESIL RTV 147 and 148 are 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.

5. Curing

Demoulding is possible after approximately 24 to 48 hours at room temperature. Curing at room temperature allows virtually no linear shrinkage to occur, however it stops the cured compound from reaching its optimum mechanical properties. Heat helps to accelerate curing.

BLUESIL™ RTV 147 A & B - RTV 148 A & 147 B

Processing *(cont')*

Recommended curing temperature, starting from the point at which the RTV is at the chosen temperature:

- 4 hours at 65 °C
- or 1 hour at 100 °C
- or 30 min at 150 °C

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

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

If in doubt, it is recommended to carry out a test by applying a mixture of the two components A+B with a brush to a small area of the object.

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 147*** *and* ***148.***

6. 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 a minimum of 23 °C.
Excess primer deteriorates the adhesion level. When PRIM PMB 821 does not give sufficient results, another primer can be recommended.

7. Reversion resistance

BLUESIL RTV 147 and **148** have good reversion resistance: after 7 days at 250 °C, the Shore A hardness only drops by around 15 points.

8. Dilution

For certain applications it may be necessary to reduce the viscosity of **BLUESIL RTV 147 and 148.** To achieve this, before catalyzing, it is possible to add up to 10 % of BLUESIL FLD 47V100; more than 10% would greatly reduce the properties of the parts produced.

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

Packaging

BLUESIL RTV 147 A and B and RTV 148 A/147 B are delivered in 1 kg kits.

BLUESIL RTV 147 A is also available in 25 kg packaging.

BLUESIL RTV 148 A is also available in 25 kg packaging.

BLUESIL RTV 147 B is also available in 2.5 and 20 kg packaging.

Storage and shelf life

When stored in its original unopened packaging, at a temperature of between – 5°C and + 30 °C, **BLUESIL RTV 147 A and B, 148 A** may be stored for up to 18 months from the date of manufacture clearly marked on the packaging.

Beyond this date, Bluestar Silicones no longer guarantees the conformity of the products with the sales specifications.

Safety

Please consult the Safety Data Sheet for **BLUESIL RTV 147 A and B et RTV 148 A /147 B.**

BLUESIL™ RTV 147 A & B - RTV 148 A & 147 B

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