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Bluesil™ RTV 3645 A&B

October 2017

Addition Cure Silicone Elastomer

Description

Bluesil ™ RTV 3645 A/B is a two component silicone elastomer that crosslinks 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

- Skins for robotic and animatronic figures
- Special Effects skins and props for the film industry
- Theme park props and reproduction molds
- Pressure pads – non-skin contact

Features

- Very good mechanical properties
- Translucent
- Low viscosity
- Easy processing – mixing ration 100:100

Typical Properties

1. Typical Properties of the non cured product

Properties	RTV 3645 A/B	
	A	B
Appearance	low viscosity, translucent liquid	low viscosity, translucent liquid
Color		
Density *approx. [g/cm³] at 23 °C*	1,07	1,07
Viscosity *approx. [cps] at 23 °C*	2000	1800

2. Polymerization

Properties	RTV 3645 A/B
Mixing Ratio A : B *parts by weight*	1 : 1
Working Time *approx. [min] at 23 °C*	40
Mixing Viscosity *approx. [cps] at 23°C*	1900

3. Typical properties of the cured product (curing conditions: 1h at 80°C)

Properties	RTV 3645A/B
Hardness Shore 00 *ASTM D 2240*	45
Tensile strength *approx. [psi] ASTM D 412*	450
Elongation *approx. [%] ASTM D 412*	800
Tear strength *approx. [ppi] ASTM D 624 Die B*	50

Please note: *Curing the silicone at elevated temperature has no influence on the final properties. Nevertheless, heating can alter the dimensions.*

Processing

1. Mixing the two components

The components A and B are mixed by weight in the above indicated ratio. The mixing can be carried out either by hand or using a low-speed electric or pneumatic mixer to minimize the introduction of air and to avoid any temperature increase.

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 flash the vacuum. The silicone is ready for pouring, either by gravity or under low pressure.

Note: Flashing the vacuum once or twice accelerates the degassing. It is recommended to use a container with a high diameter / height ratio.

3. Polymerization

The system polymerizes at 23 °C. The curing may be slowed down by lowering the temperature and accelerated by adding heat.

4. Inhibition

Contact with certain materials can inhibit the crosslinking. See list below:

- natural rubbers vulcanized with sulphur,
- RTV 2 silicone elastomers catalyzed with metal salts, e.g. tin-compounds,
- PVC stabilized with tin salts and additives,
- epoxy resins 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.

Ancillary Products

Bluesil ™ PT Accelerator – to increase cure speed
Bluesil ™ Cure Rate Retarder – to slow cure speed
Bluesil ™ Thixo Additive 22646 – to increase viscosity and impart a non-flowing consistency
Bluesil ™ SP FX Deadener 10 – to impart a “flesh-like” feel by lowering silicone resilience

Storage and shelf life

Bluesil ™ RTV 3645 A/B when stored in its original unopened packaging, at a temperature between -10°C and +30°C, may be stored for 6 months from the date of manufacture. Beyond this date, Elkem Silicones no longer guarantees that the product meets the sales specifications.

Safety

Please consult the Safety Data Sheet for **Bluesil ™ RTV 3645 A/B.** The curing agent (Part B) for this material can generate a flammable gas upon contact with acidic, basic, or oxidizing materials. Precautions to avoid contact of this curing agent with these materials should be exercised.

Packaging

Bluesil™ RTV 3645 A/B is available in 18kg and 200 kg containers.

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