Bluesil RTV 3420

Silicones | Delivering your potential

Technical Data Sheet n° 6510-V4 – 2020/11/03

Description

Bluesil™ RTV 3420 A & B is a two component, silicone system which cures at room temperature by a polyaddition reaction (10:1 ratio) resulting in a soft silicone elastomer.

Examples of applications

Production of flexible molds with excellent detail reproduction and outstanding mechanical properties, resulting in longer mold use life.

Key benefits

- Excellent detail reproduction
- Long durability due to easy demolding
- Excellent mechanical strength – low modulus and high elongation
- Low linear shrinkage
- Colorless
- No release of toxic substances during or after curing
- No need for a 'break-in' period of concrete casting

Typical properties

Characteristics of the non-cured product

Properties	***Bluesil™ RTV 3420***	
	A	***B***
Aspect	Viscous liquid	Viscous liquid
Viscosity (At 23°C, mPa.s, ISO 3219, approx.)	19000	12000
Color	Colorless	Colorless
Specific Gravity (g/cm3, approx.)	1.1	1.1

Polymerization

BLUESIL RTV 3420 A	100 parts
BLUESIL RTV 3420 B	10 parts
Properties	***Bluesil™ RTV 3420 A & B***
Color	Colorless
Pot Life (At 23°C, minutes)	120
Demolding Time (At 23°C, hours)	7

Note: Higher temperatures reduce pot life, lower temperatures prolong pot life. If curing is accelerated by heat the properties of BLUESIL RTV 3420 A&B are not significantly modified. Dimensional changes do occur during curing or post-curing at high temperatures of which must be taken into account (see 4. Dimensional stability of the crosslinked product under "Processing").

Characteristics of the crosslinked product *Measured after curing 24 hours at 23°C

Properties	***Bluesil™ RTV 3420 A & B***
Hardness, DSA	18
Tensile, psi (MPa)	980 (7)

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Elongation at break, %	705
Tear strength, ppi (KN/m)	110 (19)
Specific gravity	1.10
Linear shrinkage, % (23°C)	< 0.2

Use of the crosslinked product (silicone mold)

The flexible silicone mold can be used with common casting materials to obtain copies of the molded original. The number of the copies achievable per mold depends upon a number of factors: geometry of the part, casting material, cycle time of casting, correct mixing of the silicone, etc.

Taking this into account, users have to perform preliminary tests in order to check the compatibility between the silicone mold and the reproduction material in use and assess the durability performance of the silicone mold. These preliminary tests must be performed every time a new reproduction material is to be used with the mold.

Elkem Silicones guarantees only the sales specifications of the product Bluesil™ RTV 3420 A & B, Elkem Silicones cannot guarantee its compatibility with reproduction materials.
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

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

1. Mixing of the two components

Add 100 parts of **Bluesil™ RTV 3420 A** to 10 parts of **Bluesil™ RTV 3420 B,** by weight or by volume. 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 3420 A&B,** it is strongly recommended to eliminate entrapped air. 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 3420 A&B** is degassed under a vacuum of 25 – 29" Hg. 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 collapse to its initial volume within few minutes. Continue vacuum for 1 – 2 additional minutes, the release the vacuum.
Note: bumping / burping (quick release) the vacuum several times will accelerate the complete degassing process. For easier degassing only fill a recipient to 1/3 of its height.
Molds obtained without degassing the mixed A and B parts can contain voids (entrapped air bubbles) that are potential areas for failure of the mold during repeated usage. Following the degassing instructions above is a preferred method to maximize mold duration.

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. Temperatures below 18°C, the product may not fully cure after 16 – 24 hours. The mold will have to be exposed to higher temperature to finish curing the mold.
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, cure the elastomer at maximum temperature of 60°C for 3-4 hours, 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 The above list is not considered a complete list of incompatible materials. If unsure of the compatibility, it is recommended to perform a small patch test with mixed material on any materials that are not known to be compatible. Additionally, insure that all tools to be used are thoroughly cleaned of any potential contaminating materials. Ideally, all tools would be dedicated to the silicone system. **4. Dimensional stability of the crosslinked product** Once crosslinked, **Bluesil™ RTV 3420** is a silicone elastomer which, as all materials and especially elastomers, undergoes thermal expansion and contraction. The thermal expansion coefficient of the product is approximately $\alpha V = 5.10^{-4}/°C$ (volumetric) or $\alpha L = 1{,}7.10^{-4}/°C$ (linear).
Regulation	Please consult your local ELKEM SILICONES sales office.
Limitations	Please consult your local ELKEM SILICONES sales office.
Packaging	• BLUESIL RTV 3420 A is available in ○ Tote bin of 1000 KG (2205 LB) ○ Drum of 200 KG (441 LB) ○ Pail of 20 KG (44.1 LB) • BLUESIL RTV 3420 B is available in ○ Drum of 200 KG (441 LB) ○ Pail of 20 KG (44.1 LB) ○ Piece of 2 KG (4.41 LB)
Storage and shelf life	When stored in its original packaging: BLUESIL RTV 3420 A may be stored for up to 6 months from its date of manufacturing. BLUESIL RTV 3420 B may be stored for up to 6 months from its date of manufacturing. 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.
Safety	Please consult the Safety Data Sheet of: BLUESIL RTV 3420 A and BLUESIL RTV 3420 B

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