

RHODORSIL[®] RTV 3428 A and B

April 2002

TECHNICAL DATA SHEET
Cancels and replaces SIL 99 060 3

Description

RHODORSIL RTV 3428 A and B is a two-component silicone elastomer which crosslinks at room temperature by a polyaddition reaction. This reaction can be accelerated by heat.

RHODORSIL RTV 3428 A and B is a viscous liquid which, after curing, becomes a strong elastic material.

Advantages

- PART B : different colours available (see characteristics)
- EASE OF PROCESSING since components A and B to be mixed (100 parts and 10 parts) are both free-flowing.
- EASY CURING : **RHODORSIL RTV 3428 A and B** crosslinks at temperatures above 20°C even in the complete absence of air or humidity. Consequently, neither the thickness of the part nor the degree of confinement affect the rate and uniformity with which the elastomer crosslinks. The reaction can be accelerated by heating to 150°C.
- HIGH TEAR STRENGTH, compared to conventional RHODORSIL RTV.
- LOW SHRINKAGE when crosslinked at normal temperatures.
- GOOD TEMPERATURE RESISTANCE : it can be used for very long periods up to 150°C and for short periods up to 180°C.

Applications

- Production of flexible moulds to be kept for long periods or where particularly accurate reproduction is required (ceramics, figurines, modelmakers, etc.)
- Production of thermal expansion formers for composite materials (the aeronautic industry, boat-building, etc.).

Characteristics

1. Components of RHODORSIL RTV 3428 A and B

	RHODORSIL RTV 3428 A	RHODORSIL RTV 3428 B
Appearance (1).....	viscous liquid	Viscous liquid
Colour.....	translucent	pink , white, trans.(2)
Specific gravity at 23°C, approx.....	1.1	1.1
Viscosity at 23°C, mPa.s, approx.....	25 000	1000

(1) Part A can become slightly thixotropic ; this is quickly corrected by agitation.
(2) RHODORSIL RTV 1556 B is available in pink, translucent or white colours.

Characteristics (cont'd)	2. Mixing of the two components	
	RHODORSIL RTV 3428 A	100 parts
	RHODORSIL RTV 3428 B	10 parts
	Pot life of catalyzed mixture at 23°C, h, approx.	1
	Time after which article can be handled (or removed from mould), at 23°C, h, approx.	16
	3. Polymerized product	
	3.1 Crosslinked properties	
	Measured taken after 24 hours polymerization at 23°C	
	3.1.1. On a 6-mm thick piece	
	Shore A hardness, approx.	28
	(ASTM D2240 standard)	
	3.1.2. On a 2-mm thick film	
	Secant modulus at 100% elongation, MPa, approx.	1.2
	(AFNOR NFT 46 002)	
	Tensile strength, MPa, approx.	7.5
(AFNOR NF T 46002 - H ₂ specimen)		
Ultimate elongation,%, approx.	600	
(AFNOR NF T 46002 standard, H ₂ specimen)		
Tear strength, kN/m, approx.	20	
(ASTL D 624, notched A specimen)		
3.2 Physical properties		
Linear shrinkage, %, approx.	0.1	
(polymerized at 23°C)		
Volume expansion coefficient, K ⁻¹ , approx.	9 x 10 ⁻⁴	
Thermal conductivity, W.(m.K) approx.	0.23	
Brittle temperature, °C, approx.	- 70	
(ASTM D 746)		
Peak heat stability, °C, approx.	+ 180	
*Note : Crosslinking by heating does not affect the properties of RHODORSIL RTV 3428 A and B . However, dimensional changes do occur during of the elastomer and must be allowed for.		

Processing	Re-mixing of the two components (parts A and B) before each use
	1. Mixing the two components
	Add 10 parts of RHODORSIL RTV 3428 B to 100 parts of RHODORSIL RTV 3428 A .
	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.
	Note : it is also to use a special metering-mixing machine for two-component elastomers. Please consult us.

Processing

(con't)

The viscosity of **RHODORSIL RTV 3428 A and B** can be reduced using RHODORSIL THINNER FOR RTV 2030, add 5 to 10% of the quantity of **RHODORSIL RTV 3428 A**. This will make no significant change to the mechanical properties after polymerization. Up to 40% of RHODORSIL THINNER FOR RTV 2030 can be added without causing exudation.

2. Degassing

The mixture of parts A and B should preferably be degassed to eliminate any air. If a special machine is used, the two components are degassed separately and no air is introduced.

Degas RTV 3428 under a 30 to 50 mbar vacuum.

When the vacuum is applied, the product expands to 4 to 5 times its initial volume and bubbles form at the surface. These progressively disappear and the mixture returns to its initial volume. Wait a few minutes to ensure complete degassing and then release the vacuum : the product is ready for use.

For example, to degas 5 kg of **RHODORSIL RTV 3428 A and B**, apply the vacuum for roughly 10 minutes : releasing the vacuum once or twice during the operation facilitates and improves degassing.

A container with a high diameter/height ratio will accelerate degassing.

3. Pouring

The product can be poured by gravity or under pressure. **RHODORSIL RTV 3428 A and B** is easier to use than normal RTV because the viscosity of the two components increases only relatively slowly.

4. Crosslinking

RHODORSIL RTV 3428 A and B crosslinks in approx 24 hours at 23°C, regardless of the thickness of the mould.

At temperature below 23°C, polymerization is much slower ; for example, 36 hours may be necessary at 20°C. Conversely, heating accelerates polymerization.

Recommended curing temperatures :

2 hours at 60°C	these periods start at the
or 30 minutes at 100°C	time the RTV reaches the
or 15 minutes at 150°C	temperature required

Notes :

Contacts with certain materials can inhibit crosslinking in this RTV :

- Natural rubbers vulcanized with sulphur,
- RTV elastomers catalyzed with metal salts,
- PVC stabilizing agents,
- Epoxy catalysts

*If doubts exist, it is advisable to do a test by pouring the mixture of the two components onto a limited area of the item. In addition, it is advisable to only use the degassing equipment for this type of RTV since the chamber can be contaminated when other products are degassed in it and thus inhibit crosslinking in **RHODORSIL RTV 3428 A and B**.*

Processing
(con't)

When making a moulding, the pattern must frequently be prepared to prevent the RTV adhering : apply a very fine film (with a spraygun or brush) of a carefully-selected mould-release agent (petrolatum, cellulose varnish or white soap). This release agent can reduce the inhibiting effect of the pattern.

Ensure that the packaging is hermetically sealed again each time it is used.

Packaging

RHODORSIL RTV 3428 A and B is delivered in kits of :

- 1 kg A + 0.100 kg B
- 5 kg A + 0.500 kg B

RHODORSIL RTV 3428 A is also available in 25 and 200 kg drums accompanied by the corresponding 2.5 and 20 kg of **RHODORSIL RTV 3428 B**.

Storage and shelf life

When stored in its original unopened packaging, at a temperature of between – 5°C and + 30°C, **RHODORSIL RTV 3428 A and B** may be stored for up to 20 months, from the date of manufacture marked clearly on the packaging.

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

Safety

Consult the SAFETY DATA SHEET for **RHODORSIL RTV 3428 A and B**.

Warning to users

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Users are responsible for ensuring compliance with local legislation and for obtaining the necessary certifications and authorisations.

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