

# Silbione® RT Foam 4241 A/B

October 2017

## Biocompatible Foam for Medical Applications

**Description** **Silbione® RT Foam 4241 A&B** is a two component silicone foam which cures at room temperature by a polyaddition reaction.

When the liquid components A and B are thoroughly mixed in a 1:1 ratio, the product expands and cures to a foamed elastomer at room temperature.

**Applications**

- Cushioning and damping when high temperature variation is involved.
- Pelottes

**Advantages**

- Easy curing: **Silbione® RT Foam 4241 A&B** crosslinks at temperatures above 20°C, even in the complete absence of air or humidity.
- Easy processing thanks to the simple 1:1 mix ratio.
- Good chemical and temperature resistance.
- Low hardness (Shore 00).
- Low compression set.
- High temperature stability.
- The material expands without employing ozone depleting CFCs or other related blowing agents.
- Proven biocompatibility.

### Typical Properties

#### 1. Characteristic of the non-cured product

Properties	Silbione® RT Foam 4241	
	A	B
Contains	Pt	SiH
Appearance	Viscous liquid	
Color	Whitish	Colorless
Density (At 23°C, [g/cm <sup>3</sup> ], approx.)	1.0	
Viscosity (At 23°C, [mPa·s], approx.)	15000	

#### 2. Polymerization

Properties	Silbione® RT Foam 4241
Mixing Ratio A : B (parts by weight)	100 : 100
Color	White
Working Time (At 23 °C, [min], approx.)	5
Demolding Time (At 23 °C, [min], approx.)	30

Remarks: Higher temperatures reduce pot life, lower temperatures prolong pot life. The cell size increases as foaming temperature increases.

**3. Characteristics of the cured product**

Measured after curing 24 hours at 23°C on a 10 mm thick specimen

Properties	Silbione® RT Foam 4241
Hardness (Shore 00, ASTM D2240, approx.)	40
Density (At 23 °C, [g/cm <sup>3</sup> ], approx.)	0.25
Compression set (% compression after 72h at 23°C, approx.)	< 6

**4. Adhesion**

Upon curing **Silbione® RT Foam 4241** exhibits some adhesion to most common substrates such as glass, steel, wood, aluminum, glassfibres reinforced plastic. Adhesion to some plastics and to cured silicone rubber can usually be promoted by means of primers.

Cured silicone foam manufactures can be glued to each other or to silicone rubbers by means of **Silbione® MED ADH 4100** or **Silbione® MED ADH 4300**.

Please refer to the respective product datasheet or to Elkem Silicones Technical Service for more information.

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**Instructions for use**

**Remix each of the two components (part A and B) every time before using.**

**1. Mixing the two components**

Add 100 parts of **Silbione® RT Foam 4241 A** to 100 parts of **Silbione® RT Foam 4241 B**. Part A and Part B should be thoroughly mixed together. Vigorous and thorough mixing should be maintained for about 30 seconds. The mixed product should then be quickly casted into the desired application site.

For larger volume applications, SILBIONE RT FOAM 4241 A&B has been specifically designed with a favorable 1:1 mix ratio (both by weight or volume) in order to easily suit a robotic dispensing, where mixing is achieved by means of a dynamic mixer.

The type and degree of mixing and shear can significantly affect the cell structure, cure and density of the final foam product.

Handling precaution: Immediately upon mixing **Silbione® RT Foam 4241 A&B** a chemical reaction takes place that results in the evolution of flammable hydrogen gas.

APPROPRIATE CAUTION SHOULD BE EXERCISED.

**2. Crosslinking & foaming**

The best curing conditions are at 23°C. The use of the product at higher temperatures will reduce the pot life and demolding time. As opposed to this, lower temperatures will increase the pot life and decrease the demolding time.

At 23 °C, the cured silicone can be demolded after the time indicated as “demolding time” (see Characteristics § 2. Polymerization, page 2).

## Silbione® RT Foam 4241 A/B

Be aware that contact with certain materials can inhibit the curing of SILBIONE RT FOAM 4241 A&B:

- 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.

If doubts exist it is recommendable to run a quick test with a small quantity of material in order to assess compatibility. Take duly note that cross contamination due to not well cleaned tools or devices is frequently the main cause of inhibition. The best way is to use only dedicated gear when processing polyaddition **Silbione® RT Foam 4241 A&B**.

### Bio-compatibility and Toxicity

Biocompatibility testing addresses the categories of evaluation for cytotoxicity, skin sensitization and skin irritation specified in USP Class VI and / or ISO 10993 for device use of less than 30 days duration.

### Storage and shelf life

When stored in its original packaging at a temperature of between -10°C and +30°C, **Silbione® RT Foam 4241 A&B** may be stored for up to 12 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.

Remark: In case extreme transportation conditions cannot be avoided, **Silbione® RT Foam 4241 A&B** may resist at -20°C for maximum 7 days; in such case we recommend to stabilize the product at room temperature and perform a quick test before using the foam.

### Safety

If part B of **Silbione® RT FOAM 4241** comes in contact with strong acid, bases or oxidizing materials, hydrogen could generate. Ensure that containers are properly closed after each use in order to avoid any contamination of the contents.

#### HYDROGEN GAS EVOLUTION

Adequate ventilation must be provided to prevent localized build-up of hydrogen gas concentration upon curing or unforeseen contamination of part B.





Keep away from sparks and open flames. Waste liquid material must be handled, disposed and stored considering this precautionary information, i.e. it should NOT be sealed in plastic bags and large quantities should not be allowed to accumulate.

Please consult the Safety Data Sheets of **Silbione® RT FOAM 4241 A&B**.

### Packaging

**Silbione® RT Foam 4241 A&B** 20kg packages.

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