BLUESIL™ ESA 6018 A & B

Silicone Gel for Potting and Protection

Description

BLUESIL ESA 6018 A&B is a pourable two components silicone rubber that cures at room temperature by a polyaddition reaction, to a very soft and clear silicone gel.

BLUESIL ESA 6018 A&B is particularly recommended for applications where a self-bleeding effect is prohibited.

Examples of applications

- Potting of cable joints
- Protection of electronic units by potting
- Encapsulation of electronic components, sensors for the automotive and power electronics industries
- Damping systems

Advantages

- Easy processing, due to the good fluidity of parts A and B and their mixing ratio (1:1)
- Good pourability and easy to refill thanks to the low viscosity
- Quick setting, accelerated by heating
- Pronounced inherent tack
- Good adhesion on various substrates
- Outstanding dielectric properties
- Good heat stability in confined space (even above 100°C)
- Outstanding protection of encapsulated equipment against mechanical stress due to temperature variations and vibrations

Characteristics

1. <u>Before curing</u>

Properties	**BLUESIL ESA 6018**	
	A	**B**
Appearance	Low viscous liquid	
Colour	Transparent	
Specific gravity *(at 25°C, approx.)*	0.98	
Viscosity *(at 23°C, ISO 3219, mPa.s, approx.)*	530	

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2. Mixing of the two components

Properties	BLUESIL ESA 6018 A&B
Mixing ratio A:B *(by weight)*	1 : 1
Viscosity *(at 23°C, mPa.s, approx.)*	530
Working time *(at 23°C, minutes)*	> 180
Gel Time at 50°C *(minutes, approx.)*	20

3. Cured compound

Due to the inherently weak structural network of silicone gels, traditional mechanical properties cannot be measured on cured gels.

Properties	BLUESIL ESA 6018 A&B
Colour	Clear
Penetration, curing 60 min at 70°C *(ISO 2137, 150 g brass cone,1/10 mm), approx.*	150
Temperature range, °C	-50 to + 180°C

4. Dielectric properties

Properties	BLUESIL ESA 6018 A&B
Dielectric Strength, kV/mm *(IEC 60243-1), approx.*	23
Dielectric constant at 1 kHz *(IEC 60250) approx.*	2.8
Dielectric dissipation factor at 1 kHz *(IEC 60250), approx.*	1.10^{-3}
Volume resistivity, Ω.cm *(IEC 60093), approx.*	1.10^{15}

Please note: *The typical properties listed in this data sheet are not intended for use in preparing specifications for any particular application of BLUESIL silicone materials. Please contact our Technical Service Department for assistance in writing specifications.*

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Processing

1. Mixing of the two components

Mix Part A and Part B components according to recommended weight ratios.

The materials can be processed differently:

Hand mixing: 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. A dispensing machine can also be used.

After mixing A and B parts, it is preferable to degas the product to eliminate the air bubbles that would be visible in the finished part and which would reduce the mechanical and dielectric properties. Degassing is generally carried out with a vacuum of 30 to 50 mbar releasing the vacuum several times during the operation. A recipient with a high diameter/height ratio is better suited to quick degassing; however, the height must be sufficient to contain the swelling of the elastomer under vacuum conditions.

Automatic mixing: The products could also be used by means of automatic dosing equipment with a meter/static mixer.

In order to avoid any air bubbles that may affect the mechanical and dielectric properties, it is recommended to degas separately A and B part, prior to pour it slowly and regularly into the tanks of the dosing machine. The A and B Parts should be dosed and mixed with a static mixer with a standard commercial equipment (A special care is recommended in pumping the product from the tanks to avoid any air entry before dosing and mixing).

2. After mixing

BLUESIL ESA 6018 A&B are poured slowly and regularly. In the case of a high thickness potting operation, it must be made at the lowest point in the volume to be filled; it avoids forming and including air bubbles in the volume. It should not be filled totally to allow expansion of the mixture at service temperatures.

The crosslinking reaction could be inhibited by certain materials, which may be in contact with **BLUESIL ESA 6018 A&B** during curing. Especially troublesome materials are: sulphur-containing cured natural and synthetic rubber compounds (neoprene, latex, SBR), tin catalyzed silicone rubbers, amine catalyzed epoxies, PVC stabilized with tin salts and some polyurethane elastomers.

Packaging

BLUESIL ESA 6018 A&B are delivered in 25 kg hobbocks.Other packaging may be available on request.

Storage and shelf life

When stored in their original packaging at a temperature of between -10°C and + 30°C, **BLUESIL ESA 6018 A&B** may be stored for up to 12 months from their 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 products meet the sales specifications.

Safety

Consult the Safety Data Sheets for **BLUESIL ESA 6018 A&B.**

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