BLUESIL ESA 6110 A&B, ESA 6110 QC A&B

Description

BLUESIL ESA 6110 A&B is a pourable, two component silicone rubber that cures at room temperature by a polyaddition reaction, to a very soft and optical clear silicone gel. **BLUESIL ESA 6110 A&B** is particularly recommended for high transparency applications. A quick curing version, **BLUESIL ESA 6110 QC A&B** is also available.

Examples of applications

- Protection of electronic units by potting.
- Encapsulation of electronic components, sensors for the automotive and power electronics industries.
- Encapsulation of solar cells.
- Damping systems.

Key benefits

- Easy processing, due to the good fluidity of parts A and B and their mixing ratio (1:1).
- Good pourability.
- Optically clear.
- Quick setting, accelerated by heating.
- Pronounced inherent tack.
- 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.

Typical properties

1. Before curing

Properties	ESA 6110 A ESA 6110 QC A	ESA 6110 B ESA 6110 QC B
Appearance	Liquid	Liquid
Color	Transparent	Transparent
Specific gravity *(at 25°C), approx.*	0.98	0.98
Viscosity *(at 23°C,mPa.s, ISO 3219), approx.*	1 000	1 200

2. Mixing of the two components

Properties	ESA 6110 A&B	ESA 6110 QC A&B
Mixing ratio A:B (by weight)	1 : 1	1 : 1
Viscosity *(at 23°C, mPa.s, approx)*	1 200	1 200
Working time *(at 23°C, minutes, approx)*	50	5
Curing time *(at 23°C, minutes, approx)*	120-180	30

3. Cured compound

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

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Color	Optically clear
Penetration, curing 30 min at 120°C *(ISO 2137, 150g hollow cone,1/10mm),approx*	250

4. Dielectric properties

Properties	BLUESIL ESA 6110 A&B BLUESIL ESA 6110 QC 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, W.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.*

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

1. Mixing of the two components

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

The materials can be processed differently according to the version:
BLUESIL ESA 6110 A&B
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: A dispensing machine can also be used (refer to procedure recommended for **BLUESIL ESA 6110 QC A&B**).
BLUESIL ESA 6110 QC A&B
The products should only be used by means of automatic dosing equipment with a meter/static mixer, as the pot life is too short to hand-mix and efficiently degas the material.
Automatic mixing: 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

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	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. <u>After mixing</u> **BLUESIL ESA 6110 A&B** or **BLUESIL ESA 6110 QC 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; this avoids forming and including air bubbles in the volume. It should not be filled totally to allow expansion of the mixture at service temperatures. Certain materials that the BLUESIL ESA 6110 A&B and BLUESIL ESA 6110 QC A&B may be in contact with when curing could inhibit the reaction. 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.
Regulation	Please consult your local ELKEM SILICONES sales office.
Limitations	Please consult your local ELKEM SILICONES sales office.

Packaging	• BLUESIL ESA 6110 A is available in
	  ○ Drum
	  ○ Drum of 200 KG (441 LB)
	  ○ Tote bin of 1000 KG (2205 LB)
	• BLUESIL ESA 6110 B is available in
	  ○ Drum
	  ○ Drum of 200 KG (441 LB)
	  ○ Tote bin of 1000 KG (2205 LB)
	• BLUESIL ESA 6110 QC A is available in
	  ○ Pail of 25 KG (55.13 LB)
	• BLUESIL ESA 6110 QC B is available in
	  ○ Pail of 25 KG (55.13 LB)

Storage and shelf life	When stored in its original packaging: BLUESIL ESA 6110 A may be stored at temperatures between -10°C / 14°F and 30°C / 86°F for up to 12 months from its date of manufacturing. BLUESIL ESA 6110 B may be stored at temperatures between -10°C / 14°F and 30°C / 86°F for up to 12 months from its date of manufacturing. BLUESIL ESA 6110 QC A may be stored at temperatures between -10°C / 14°F and 30°C / 86°F for up to 6 months from its date of manufacturing. BLUESIL ESA 6110 QC B may be stored at temperatures between -10°C / 14°F and 30°C / 86°F 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 ESA 6110 A, BLUESIL ESA 6110 B, BLUESIL ESA 6110 QC A and BLUESIL ESA 6110 QC B

Visit our website www.elkem.com/silicones/

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