

BLUESIL[®] ESA 7263 A&B

Silicone Potting Materials

Description

Bluesil[®] ESA 7263 A&B is a two-component silicone elastomer which cures at room temperature by a polyaddition reaction. The curing can be accelerated by Heating.

Bluesil[®] ESA 7263 A&B is supplied in the form of a viscous liquid which is transformed, after mixing parts A and B and then curing, into a strong, elastic Material.

Examples of applications

- Potting: protection of electrical component, connection box.
- Encapsulating: connectors, captors, sensors in on board electronic. EV Battery.
- Thermal and fire protection in aerospace

Advantages

- Outstanding flame resistance
- Good thermal conductivity: dissipation of calories (encapsulation)
- Low viscosity (easily refilled)
- Non-corrosive
- Excellent dielectric properties

Characteristics

Before Curing		Curing condition	
Part A		@ 23°C & 50% R.H	
Colour	Grey	Mix ratio : A:B	1:1
Appearance	Viscous Liquid	Mixed Viscosity (mPa·s), approx	3500
Viscosity (mPa·s), approx	4000	Pot life (min, 23°C), approx..	90
Density (g/cm ³)	1.71	Working time (min, 50°C), approx	30
Part B		Curing time (min, 70°C), approx	
Colour	White	Curing time (min, 25°C), approx	120
Appearance	Viscous Liquid		
Viscosity (mPa·s), approx	2500		
Density (g/cm ³)	1.71		

Mechanical properties (70 °C curing for 30 mins)

Performance	Test method	Value
Specific gravity(g/cm3)	/	1.71
Shore A hardness	ASTM D2240	40
Tensile Strength (MPa)	ASTM D412	0.63
Elongation (%)	ASTM D412	86

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Thermal and Dielectric properties		
Performance	Test method	Value
Thermal conductivity, W/m.K, 25°C	ASTM D5470	1
Dielectric constant at 1MHz	ASTM D150	4.6
Dielectric dissipation factor at 1MHz	ASTM D150	0.039
Breakdown voltage (KV/mm)	ASTM D149	11
Burning test	UL 94	V0
Volume resistance ($\Omega \cdot \text{cm}$)	ASTM D527	3.53×10^{13}
Specific Heat Capacity (J/(kg °C))	ASTM E1269	1.225

Operating temperature range : -60°C / + 150°C **

** For use in conditions close to the upper and lower limit, additional tests have to be done in order to take into account the specificity of the application and the end use environment

Remix each of the 2 components (A and B part) every time before using.

Processing

1. Mix Part A and Part B components according to recommended weight ratio. 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. The mixing can be made with a dynamic mixing head or a static mixer.
2. The mixture of the two components should be degassed to remove air bubbles which would reduce the mechanical and dielectric properties. Degassing is generally performed in a vacuum of 30 to 50 mbars for about 10 minutes, releasing the vacuum twice in the chamber.
3. It is recommended to pour slowly the degassed Bluesil[®] ESA 7263 A&B mixture at the lowest point of the volume to be filled, to prevent the formation and entrapment of air bubbles. The container should not be filled completely, to allow the Bluesil[®] ESA 7263 A&B to expand at service temperatures. At a temperature of 23°C, Bluesil[®] ESA 7263 A&B cures in approximately 2 hours. Curing can be accelerated by external heat, and the higher the temperature the faster curing will be. For example, at 70 °C the product cures in about 30 minutes.
4. An object encapsulated with **Bluesil[®] ESA 7263 A&B** can be repaired simply by cutting away the ESA 7263 and replacing the missing elastomer with new **Bluesil[®] ESA 7263 A&B** which adheres very strongly to itself with no need for a primer.

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Processing

Certain materials that the **Bluesil[®] ESA 7263 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;
- Some organic solvents (ketenes, alcohol, ether, etc).

In case of doubts, it is recommended to test the substrate by applying a small quantity of the mixed silicone on a restricted area.

Packaging

Bluesil ESA 7263 A&B is delivered in 16 kg+16 kg (20L+ 20L) pails. If needed special containers are available on request.

Storage and shelf-life

Bluesil □ **ESA 7263 A&B** must be used within 6 months since the date of manufacture. To make sure the shelf life can reach the maximum shelf life, please stir the materials regularly and keep the materials in 25°C environment.

Beyond this date, Bluestar Silicones no longer guarantees the conformity of the product with sales specification.

In order to preserve best properties, it is recommended to follow strictly the following guidelines:

- Store the original packing tightly sealed and at a temperature 25°C.
- Use the product as soon as possible once the packaging was opened.

Safety

Consult the Safety Data Sheet for **Bluesil[®] ESA 7263 A&B**.

Visit our website www.silicones.elkem.com

EUROPE

ELKEM Silicones France
 21 Avenue Georges Pompidou
 F69486 Lyon Cedex 03
 FRANCE
 Tel. (33) 4 72 13 19 00
 Fax (33) 4 72 13 19 88

NORTH AMERICA

ELKEM Silicones USA
 2 Tower Center Boulevard
 Suite 1601
 East Brunswick, NJ 08816-1100
 United States
 Tel. (1) 732 227-2060
 Fax. (1) 732 249-7000

LATIN AMERICA

ELKEM Silicones Brazil Ltda.
 Av. Maria Coelho Aguiar, 215
 Bloco G – 1ª andar
 05804-902- Sao Paulo – SP-
 Brazil
 Tel. (55) 11 37477887

ASIA PACIFIC

ELKEM Silicones Hong Kong
 Trading Co. Ltd
 29th Floor, 88 Hing Fat Street
 Causeway Bay
 Hong Kong
 Tel. (852) 3106 8200
 Fax (852) 2979 0241

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