

BLUESILTM ESA 7252 A & B

Potting, Encapsulant Elastomer for On Board Electronic

Description

BLUESIL ESA 7252 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 7252 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.
- Thermal and fire protection in aerospace.

Advantages

- Outstanding flame resistance.
- Good thermal conductivity: dissipation of calories (encapsulation).
- Low viscosity (easily refilled).
- Fast curing product.
- Non corrosive.

Characteristics

1. Before curing

<i>Properties</i>	BLUESIL ESA 7252 A	BLUESIL ESA 7252 B
Appearance	Viscous Liquid	Viscous Liquid
Color	Black	White
Specific gravity <i>(at 25°C), approx</i>	1.3	1.45
Viscosity <i>(at 23°C, mPa.s, Brookfield needle n°6, speed 5 rpm), approx</i>	3500	3000

2. Mixing of the two components

Ratio ESA 7252 A / ESA 7252 B	1:1
Pot-life of mixture <i>at 23°C, hours, approx</i>	1.5
Time required to obtain final mechanical properties <i>at 23°C, hours, approx</i>	8

BLUESIL™ ESA 7252 A & B**Characteristics (cont')****3. Cured compound****Mechanical properties after curing 8 hours at 23°C**

Shore A hardness, 6mm thick specimen <i>(ASTM D 2240), approx</i>	48
Tensile strength, MPa, 2 mm thick film <i>(AFNOR NF T 46002), approx</i>	2.3
Elongation at break, %, 2 mm thick film <i>(AFNOR NF T 46002), approx</i>	170
Linear shrinkage, %, approx.	0.1

4. Thermal and flammability properties

Thermal conductivity, W/ (m.K)	0.42
Expansion coefficient, K⁻¹, approx.	8.10 ⁻⁴
Flammability classification, (UL 94)	V0 on 3.4mm

5. Dielectric properties

Dielectric strength, kV/mm, <i>(AFNOR NF C 26225 and IEC 243)</i>	18
Dielectric constant at 1 kHz, <i>(AFNOR C 26 230 and CEI 250)</i>	3.2
Dielectric dissipation factor at 1 kHz, <i>(AFNOR NF C 26 230 and IEC 250)</i>	5.10 ⁻³
Volume resistivity, Ω.cm, <i>(AFNOR NF C 26215 and IEC 93)</i>	8.10 ¹³

Processing

Remix each of the 2 components (A and B part) every time before using. Mix Part A and Part B components according to recommended weight ratios.

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.

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 ten minutes, releasing the vacuum twice in the chamber.

BLUESIL ESA 7252 A&B can be poured on to metals, glass, laminates or moulded articles containing organic resins or silicones, or on all other materials. It is recommended to pour slowly the degassed **BLUESIL ESA 7252 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 7252 A&B** to expand at service temperatures.

BLUESIL™ ESA 7252 A & B

Processing (cont')

At a temperature of 23°C, **BLUESIL ESA 7252 A&B** cures in approximately 8 hours. Curing can be accelerated by external heat, and the higher the temperature the faster curing will be. For example, at 150°C the product cures in about 5 minutes.

Certain materials that the **BLUESIL ESA 7252 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.

Repairing:

An object encapsulated with **BLUESIL ESA 7252 A&B** can be repaired simply by cutting away the ESA and replacing the missing elastomer with new **BLUESIL ESA 7252 A&B**, which adheres very strongly to itself with no need for a primer.

Packaging

BLUESIL ESA 7252 A&B is supplied in 25 kg containers.

Storage and shelf-life

When stored in their original, unopened, packaging at a temperature of between - 5°C and + 30°C. **BLUESIL ESA 7252 A&B** may be stored for up to 20 months from the date of manufacture marked clearly on the packaging.

Beyond this date, Bluestar Silicones no longer guarantees the conformity of the products with the sales specifications.

Safety

Consult the Safety Data Sheet for **BLUESIL ESA 7252 A&B**.

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