

BLUESILTM ESA 8352 A & B

Fast curing self-adhesive at room temperature

Description **BLUESIL ESA 8352 A&B** is a quick curing two-component room temperature vulcanising silicone elastomer.

BLUESIL ESA 8352 A&B has been designed to obtain a quick adhesion of components which exhibit different thermal expansion rates and/or which are exposed to high temperatures.

Examples of applications **BLUESIL ESA 8352 A&B** is intended for bonding to metal and plastic surfaces in domestic appliances, automotive and household electrical goods industries.

- Oven doors
- Microwave ovens
- Vitroceramic and induction hobs
- Sealing and protection of electronic devices.

Advantages **BLUESIL ESA 8352 A&B :**

- cures quickly at room temperature
- sets in confined spaces and in high section thicknesses.
- gives excellent mechanical performance levels, very good heat stability, primerless adhesion on many surfaces and good resistance to chemical agents.
- therefore provides perfect assembly and complete sealing when jointing dissimilar substrates subject to thermal stress.
- is chemically neutral and bonding performances in hot and wet environment make that it is the ideal protective product.

Characteristics **1 – Properties before curing**

| <i>Properties</i> | BLUESIL ESA 8352 PART A | BLUESIL ESA 8352 PART B |
|---|--------------------------------|--------------------------------|
| Aspect | Non-flowing | Non-flowing |
| Viscosity at 10s⁻¹ and 23°C (mPa.s) | 50 000 | 80 000 |
| Colour | Ivory | Black |
| Dosage in volume | 100 % | 10 % |
| Specific gravity at 23°C <i>(Standards ISO R 1183, DIN 53479, NM 703)</i> | 1.30 | 1.07 |

BLUESIL™ ESA 8352 A & B

Characteristics (con't)

2. Curing

BLUESIL ESA 8352 A&B starts curing even in confined spaces as soon as the two parts A and B are mixed.

| | |
|------------------|---------------------------------|
| Curing rate | BLUESIL ESA 8352 A&B |
| Working Time* | 12 min |
| Shore A hardness | 1h >10 |

- *The working time is roughly the time beyond it will not be possible to dispense the material through the static mixer. Longer this time is, longer the curing will be.
- after 1 hour at room temperature, the cured thickness is infinite and the product is sufficiently “cohesive” for the assembled part to be handled.

3. Properties after curing

Specific gravity of **BLUESIL ESA 8352 A&B BLACK** cured at 25 °C 1.28
(Standards ISO R 2781, BS 903 Part A1, ASTM D 297)

Mechanical properties after 7 days at room temperature: (*) Measured on 2 mm thick film

| Properties (*) | BLUESIL ESA 8352 A&B |
|----------------------------|---------------------------------|
| Shore A Hardness | 50 |
| Tensile strength | 2.5 |
| Elongation at break | 200 |

4. Thermal resistance

| | BLUESIL ESA 8352 A&B |
|--|---------------------------------|
| Maximum temperature in continuous use (*) (on 2 mm thick film, 1000 h) | +180°C |
| Maximum peak temperature (*) (on 2 mm thick film, 72 h) | + 220°C |

(*) Determined by measuring the mechanical properties and Shore A hardness before and after heat treatment.

N.B.: These values are not absolute limits, but the range within which variations in mechanical properties are not reduced by more than 50 %. In the case of exposure for periods shorter than 72 h, the product withstands higher peak temperatures.

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5 - Adhesion

Tests performed on lap shear test specimens with a 1 mm thick silicone joint.

Adhesion on Stainless steel / Glass

| Curing conditions | Type of joint failure | Lap shear strength (MPa) |
|---------------------------------------|-----------------------|--------------------------|
| 3 hours at R.T.* | 100 % Cohesive** | ~ 1 |
| 1 day at R.T.* | 100 % Cohesive | >1.2 |
| 7 days at R.T.* | 100 % Cohesive | >1.2 |
| 7 days at R.T.* + 3 days at 220 °C | 100 % Cohesive | 1. |

* R.T.= Room Temperature, 23°C 50% RH

** With Fast and Standard version

Adhesion on various substrates

| Substrates | BLUESIL ESA 8352 A&B Lap shear strength (MPa) |
|--|--|
| Polycarbonate (MPa,env) 24 hours at R.T.* | >1.2 |
| PBT/PET (Glass fiber) (MPa,env) 24 hours at R.T.* | >1.2 |
| PA 6.6 (Glass fiber) (MPa,env) 24 hours at R.T.* | >1.2 |
| Type of failure profile | 100 % Cohesive |

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Processing

Processing is particularly easy since this product is delivered "ready-to-use" in the correct mixing proportions. The rheology of parts A and B enable quick and easy mixing that may be performed, for example, using static mixers, disposable or otherwise. Application can be carried out either manually or using robotic application equipment.

BLUESIL ESA 8352 A&B is applied onto one of the two joint surfaces. These must be assembled before the product has started to set.

It is recommended not to subject the assembly to stress immediately and to apply **BLUESIL ESA 8352 A&B** on clean and dry surfaces.

Packaging

BLUESIL ESA 8352 A&B are delivered in 200 kg drums and bi-cartridges.

Storage and shelf-life

When stored in its original unopened packaging at a temperature of between +2°C and +30°C, **BLUESIL ESA 8352 A** can be used for up to 12 months and **BLUESIL ESA 8352 B** for up to 12 months from its date of manufacture. Comply with the storage instructions and expiry date marked on the packaging. Past this date, Elkem Silicones no longer guarantees that the product meets the sales specifications.

Safety

Please consult the Safety Data Information file for the sampling of a laboratory trial or experimental product.

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