CAF 4

Silicones | Delivering your potential

Technical Data Sheet n° 746-V1 – 2018/08/22

Description

CAF 4 is a one component silicone elastomer which cures at room temperature:

- Acetic
- Self-levelling
- Off-white

Examples of applications

CAF 4 is mainly used in industrial sealing, bonding and coating applications:
It is notably used for:

- bonding of plastics in aeronautics,
- electrical insulation,
- coating of fabrics for thermal protection,
- coating of conveyor belts.

Key benefits

CAF 4 is quick curing, has very good mechanical properties, good heat stability and high dielectric properties.
CAF 4 therefore provides perfect assembly and complete sealing between different materials subject to thermal stresses

Typical properties

	CAF 4
Hardness ISO 868	37 sh.A
Viscosity NF T 76102	250000 mPa.s
Elongation NF ISO 37	290 %
Tensile strength NF ISO 37	3.8 MPa

1. Processing / Curing
1.1. Processing:
Processing is particularly easy, since the products are delivered ready to use. Application can be carried out either manually or using robotic application equipment.
CAF 4 is applied to one of the two joint surfaces and assembled before the product has formed a skin.
It is recommended to apply CAF 4 to clean and dry surfaces.
CAF 4 is coated using a spray gun after having been diluted in white spirit or cyclohexane. The ideal viscosity for this is 1000 mPa.s.

1.2. Curing:
CAF 4 starts curing as soon as the products come into contact with atmospheric moisture.
Skin formation time*, min. approx 10
Time required to cure 2 mm*, hours, approx..... 5
Cured thickness after 24 h*, mm, approx..... 4.5

* Temperature 23 °C, relative humidity 50%.
The curing rate increases with temperature and hygrometry.

2. Properties before curing
Appearance..... viscous flowing paste
Colour..... off-white
Odour ..... acetic
Flowability, in min..... 4(Standards MIL S 880-2-D, NMRPS 459)
viscosity, mPa.s ..... 250 000(Standards NF T 76105, ASTM D 445)
Specific gravity at 25 °C ..... 1.16(Standards ISO R 1183, DIN 53479, NMRPS 703)

3. Cured product properties
3.1. Specific gravity at 25 °C ..... 1.19(Standards ISO 2781, ASTM D 297, BS 903 part. A1)

3.2. Mechanical properties after 7 days at room temperature:
Shore A hardness..... 37(Standards ISO R 868, DIN 53505, ASTM D 2240BS 903 Part A7, NF T 46003, NMRPS 471)
Modulus at 100 % elongation, MPa ..... 0.8(Standards ISO R 37 (H2), DIN 53504, ASTM D 412BS 903 Part A2, NF T 46002 (H2), NMRPS 470)
Tensile strength, MPa ..... 3.8(Standards ISO R 37 (H2), DIN 53504, ASTM D 412BS 903 Part A2, NF T 46002 (H2), NMRPS 470)
Elongation at break, % ..... 290(Standards ISO R 37 (H2), DIN 53504, ASTM D 412BS 903 Part A2, NF T 46002 (H2), NMRPS 470)
Tear strength, kN/m ..... 4.5(Standards ASTM D 624 specimen A, NMRPS 492)

3.3. Thermal properties:
- Lower usage temperature limit
Brittle point: ..... - 65°C
Temperature range in continuous use(on a 2 mm thick film, 1000 h):
.....– 60 °C to + 225 °C
- Maximum peak recommended temperature: ..... + 250 °C(on a 2 mm thick film, 72 h)
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.

3.4. Adhesion properties:
- on aluminium AG3(1 mm thick joint, curing 7d at 23 °C, NMRPS 748)
Shear strength, MPa 1.2
Type of failure..... cohesive
- on other surfaces:
Self adhesion on glass, enamel, ceramics, epoxy paint.
Adhesion with primer:

- on polar plastics ..... primer PM 820 or PP 878
- on stainless steel ..... primer 131 or PM 820

- on other metals ..... primer 131 or PM 820

3.5. Thermal conductivity:
- Thermal conductivity at 30 °C, W/m.K..... 0.30(Standard NF x 10021)

3.6. Dielectric properties:
Dielectric strength, kV/mm ..... 21(Standards NF C 26225, ASTM D 419, IEC 243)
Dielectric constant at 1 MHz ..... 2.9(Standards NF C 26230, ASTM D 150, IEC 250)
Power factor at 1 MHz ..... $2\ 10^{-3}$(Standards NF C 26230, ASTM D 150, IEC 250)
Volume resistivity, .cm .....$1\ 10^{15}$

(Standards NF C 26215, ASTM D 257, IEC 193)

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	Please consult your local ELKEM SILICONES sales office.
Packaging	• CAF 4 is available in ○ Drum of 230 KG (507.15 LB) ○ Pallet of 250 KG (551.25 LB)
Storage and shelf life	When stored in its original packaging: CAF 4 may be stored at a temperature between 2 °C/ 36 °F and 30 °C/ 86 °F for up to 24 months from its date of manufacturing. Comply with the storage instructions and expiracy date marked on the packaging. Beyond this date, Elkem Silicones no longer guarantees that the product meets the sales specifications.
Regulation	Please consult your local ELKEM SILICONES sales office.
Limitations	Please consult your local ELKEM SILICONES sales office.
Safety	Please consult the Safety Data Sheet of: CAF 4

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