

CAF[®] 4

Flexible adhesive for performance assembly

February 2004

 TECHNICAL DATASHEET
 Cancels and replaces SIL 01 107 3

Description	<p>CAF 4 is a one component silicone elastomer which cures at room temperature :</p> <ul style="list-style-type: none"> - Acetic - Self-levelling. - Off-white.
Applications	<p>CAF 4 is mainly used in industrial sealing, bonding and coating applications :</p> <p>It is notably used for :</p> <ul style="list-style-type: none"> - bonding of plastics in aeronautics, - electrical insulation, - coating of fabrics for thermal protection, - coating of conveyor belts.
Advantages	<p>CAF 4 is quick curing, has very good mechanical properties, good heat stability and high dielectric properties.</p> <p>CAF 4 therefore provides perfect assembly and complete sealing between different materials subject to thermal stresses</p>
Characteristics	<p>1 – Processing / Curing</p> <p>1.1. Processing :</p> <p>Processing is particularly easy, since the products are delivered ready to use. Application can be carried out either manually or using robotic application equipment.</p> <p>CAF 4 is applied to one of the two joint surfaces and assembled before the product has formed a skin.</p> <p>It is recommended to apply CAF 4 to clean and dry surfaces.</p> <p>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.</p> <p>1.2 Curing :</p> <p>CAF 4 starts curing as soon as the products come into contact with atmospheric moisture.</p> <p>Skin formation time*, min. approx 10 Time required to cure 2 mm*, hours, approx..... 5 Cured thickness after 24h*, mm, approx..... 4.5</p> <p>* Temperature 23°C, relative humidity 50%.</p> <p>The curing rate increases with temperature and hygrometry.</p>

Characteristics
(cont.)

2 – Properties before curing

Appearance...	viscous flowing paste
Colour...	off-white
Odour	acetic
Flowability, in min..... (Standards MIL S 880-2-D, NMRPS 459)	4
Brookfield viscosity, mPa.s ... (Standards NF T 76105, ASTM D 445)	250 000
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)
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3.2 Mechanical properties after 7 days at room temperature :

Shore A hardness..... (Standards ISO R 868, DIN 53505, ASTM D 2240 BS 903 Part A7, NF T 46003, NMRPS 471)	37
Modulus at 100 % elongation, MPa .. (Standards ISO R 37 (H2), DIN 53504, ASTM D 412 BS 903 Part A2, NF T 46002 (H2), NMRPS 470)	0.8
Tensile strength, MPa	3.8 (Standards ISO R 37 (H2), DIN 53504, ASTM D 412 BS 903 Part A2, NF T 46002 (H2), NMRPS 470)
Elongation at break, %	290 (Standards ISO R 37 (H2), DIN 53504, ASTM D 412 BS 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: (on a 2 mm thick film, 72 h)	+ 250°C

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.*

Characteristics

(cont.)

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 $2 \cdot 10^{-3}$
(Standards NF C 26230, ASTM D 150, IEC 250)

Volume resistivity, $\Omega \cdot \text{cm}$ $1 \cdot 10^{15}$
(Standards NF C 26215, ASTM D 257, IEC 193)

Packaging

- 100 g tubes on pallets of 1600 units.
- 25 kg tins on pallets of 10 units.
- 230 kg drums on pallets of 4 units.

Storage and shelf-life

When stored in its original unopened packaging at a temperature of between +2°C and +30°C, **CAF 4** can be used for up to 24 months from its date of manufacture (expiry date).

Comply with the storage instructions and expiry date marked on the packaging.

Past this date, Rhodia Silicones no longer guarantees that the product meets the sales specifications.

Safety

Consult the Safety Data Sheet for **CAF 4**.

Warning to users

The information contained in this document is given in good faith based on our current knowledge. It is only an indication and is in no way binding, particularly as regards infringement of or prejudice to third party rights through the use of our products.

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This information must on no account be used as a substitute for necessary prior tests which alone can ensure that a product is suitable for a given use.

Users are responsible for ensuring compliance with local legislation and for obtaining the necessary certifications and authorisations.

Users are requested to check that they are in possession of the latest version of this document and RHODIA SILICONES is at their disposal to supply any additional information.



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