

Silicones Solution for domestic appliances

CAF® - ONE COMPONENT ELASTOMERS

Bluestar Silicones has developed an exhaustive range to cover all technical, economical and environmental requirements.

CAF® are room temperature vulcanizing (RTV-1) silicone elastomers which cure at room temperature:

- ◆ As soon as the product comes into contact with atmospheric moisture
- ◆ The cure rate increases with temperature and ambient humidity level

For using

IN APPLICATIONS WHICH NEED

- ◆ Self levelling or thixotropic properties
- ◆ Sealing & protection against water
- ◆ Heat & humidity resistance
- ◆ High mechanical properties
- ◆ Sealing & bonding of metal & plastic components subject to thermal stresses

IN A WIDE RANGE OF TEMPERATURE

- ◆ With high temperature resistance
– 60°C up to +300°C

IN THE MAIN FOLLOWING APPLICATIONS

- ◆ Washing machine
- ◆ Dish-washer
- ◆ Steam iron
- ◆ Electrical resistors, inductors
- ◆ Industrial sterilizer
- ◆ Cold chamber
- ◆ Maintenance industry
- ◆ Vitroceramic hobs:
products specially developed for sealing & bonding of hobs with visible gasket
- ◆ Ovens, steam-ovens, pyrolysis ovens, microwaves ovens



BENEFITS

- ◆ Ready & easy to use, manually or with robotic dispensing equipment
- ◆ Self-levelling or thixotropic
- ◆ Adhesive or Self-adhesive
- ◆ High mechanical properties
- ◆ High heat resistance
- ◆ High chemical resistance

Domestic appliances

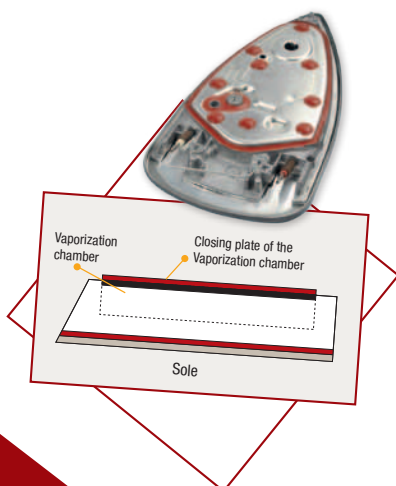
CAF® - ONE COMPONENT ELASTOMERS RANGE

		CAF 1	CAF 1 extra fluid	CAF 8	CAF 36	CAF 30
Product category		Flowable			Thixotropic	
Main characteristics		Heat stability flowing	Heat stability, quick setting	High heat stability	High heat stability	High elongation
Color		Red			Trans, wh	
Properties before curing	Cure-type	acetoxy			acetoxy	
	Specific gravity at 25°C ⁽¹⁾	1.12	1.11	1.14	1.02	1.04
	Viscosity ⁽²⁾	250 000	7 500	22 000		
	Extrusion (g/min) ⁽³⁾	-	-		130	40
	flowability ⁽⁴⁾	5 min	-	30 sec	<5mm	<2 mm
Cured compound	Skin formation time (min) ⁽⁵⁾	7	7	8	4	6
	Setting time for 2 mm thick (H)	6	6	6	6	6
	Cured thickness after 24H (mm)	4.3	4.3	4.5	4.5	4.2
Mechanical properties after curing	Shore Hardness for 6 mm Thick section ⁽⁶⁾	47	54	34	30	20
	Modulus for 100% elongation (MPa) ⁽⁷⁾	2	2.2	0.8	0.7	0.6
	Tensile Strength (MPa) ⁽⁷⁾	4.4	3	2	3	2.2
	Elongation at break (%) ⁽⁷⁾	200	110	250	500	500
	Lap Shear strength (MPa) ⁽⁸⁾	1.8	1	0.8	2	1.5
	Type of failure Cohesive (CF)/Adhesive (AF)	CF 100%	AF	CF 100%	CF 100%	CF 100%
Physical properties after curing	Lower service temperature	-65°C	-65°C	-65°C	-60°C	-65°C
	Maximum continuous service temperature, 1000H	255°C	250°C	275°C	275°C	250°C
	Maximum peak service temperature, 72H	300°C	275°C	300°C	300°C	280°C
Storage	Shelf life from the production date (months)	24	24	24	24	24

(1) ISO R1183, DIN 53479, NM703
 (2) Brookfield NF T 76105, ASTM D445
 (3) NM495 - 3 mm 3 bars

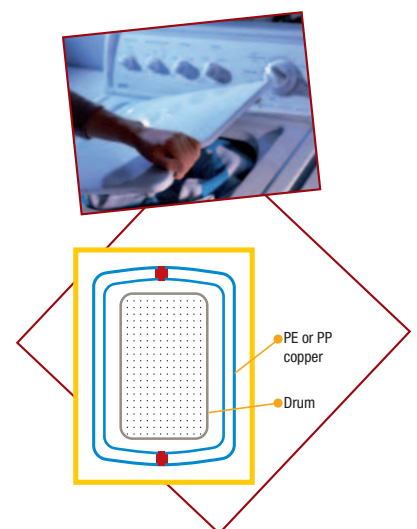
SEALING – CAF®

STEAM-IRON



- ◆ Flowable or thixotropic acetoxy products are used for sealing to ensure protection against water, heat & humidity or high heat resistance (up to 300°C).
- ◆ The product is applied to one of the assembled part to perform CIPG (cured-in-place) or FIPG (formed-in-place) gaskets.
- ◆ Adhesion increases as the CAF® bead cures, thus ensuring sealing.
- ◆ Dismantling does not damage the parts and a new bead is laid when reassembling after repairs (this operation can be carried out manually).

WASHING MACHINE



CAF 33	CAF 5662	CAF 22 Ox	CAF 240*	CAF 505	CAF 520	CAF 530
	Thixotropic	Thixotropic		Thixotropic		
High elongation Heat stability	Heat stability high hardness	Self-adhesive, heat stability		Self-adhesive, neutral		
White, black	Black	Trans, black	Black	Trans	Trans, white	White, black, grey
	acetoxo	oxime		alcoxy		
1.04	1.1	1.03	1.25	1.03	1.02	1.30
50	120	80	30	80	50	130
<2 mm	<2 mm	<2 mm	<3 mm	<2 mm	<3 mm	<2 mm
6	6	8	7	10	5-8	10-15
6	7	8	6	6	7	8
4.3	4	3.6	3.3	4	4	3.5
25	55	20	34	17	15	34
0.6	2.3	0.45	0.8	0.35	0.3	0.84
2.5	5	1.5	1.9	2	1.1	3.31
500	200	450	460	750	550	510
1.4	2.6	1	1.2	0.9		
CF 100%	CF 100%	CF 100%	CF 100%	CF 100%	CF 100%	CF 100%
-65°C	-65°C	-55°C	-60°C	-60°C	-60°C	-60°C
250°C	250°C	200°C	200°C	180°C	150°C	150°C
300°C	275°C	250°C	230°C	180°C	150°C	185°C
18	18	18	12	12	12	12

(4) Boeing S7502

(5) 23°C, 50% Relative humidity

(6) ISO R868, DIN53505, ASTM D2240, BS903 (A7), NF T 46003, NM471

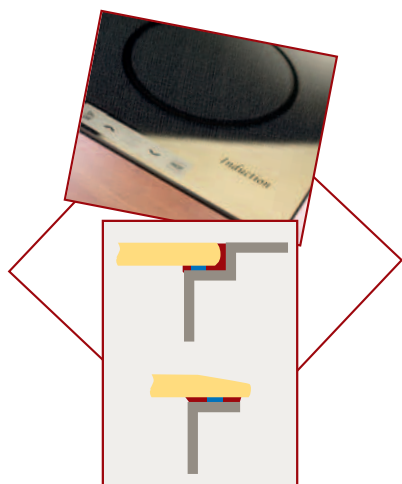
(7) ISO 37 (H2), DIN 53504, ASTM D 412, BS903 (A2), NF T 46002 (H2), NM470

(8) On ALU AG3, without primer, 1mm thick joint, NM748

*Meko content < 1% (methyl ethyl ketoxime)

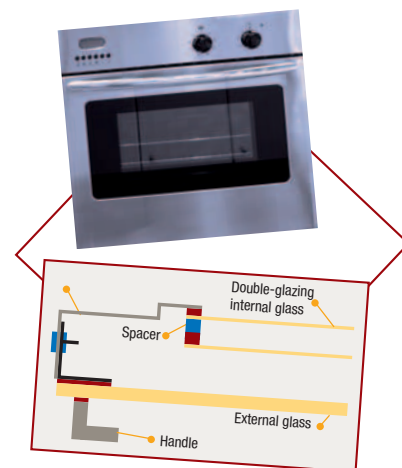
BONDING – CAF®

HOB'S, COOKERS



- ◆ CAF® are applied manually or using automatic dispensing equipment and transformed into a flexible bond which absorbs differential movement of components submitted to very high temperatures.
- ◆ The product is applied to one of the assembled parts. Adhesion and mechanical properties increase as the CAF® cures.
- ◆ Excellent tooling properties of CAF® allows visible gaskets with high quality aspect.

OVENS



Ceramic glass
 Silicon glue
 Wedge

Curing properties

Bluestar Silicones has developed an exhaustive range to cover all technical, economic and environment requirements.

CAF® are room temperature vulcanizing (RTV-1) silicone elastomers which cure at room temperature.

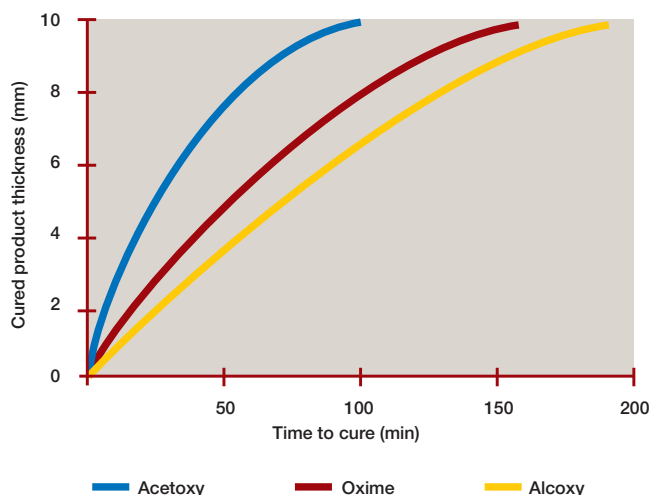
To meet multiple technical requirements, Bluestar Silicones offers 3 different systems of curing:

- ◆ Acetoxy cure system:
CAF 1, CAF 8, CAF 30, CAF 33, CAF 36, CAF 5662
- ◆ Oxime cure system:
CAF 22 Ox, CAF 240
- ◆ Alcoxy cure-system:
CAF 505, CAF 520, CAF 530

with different levels of curing rates, hardness, mechanical properties and heat stability.

Cure rate depends on the thickness and on the moisture level.

Curing kinetic



Technical service

Our Technical Customer Service Laboratory carries out analyses and tests to assess performance of our silicones in a given application. We participate in the design of the parts in order to optimize the performance of our products. We also offer our customers the opportunity of producing prototype series with our dispensing equipment or in close cooperation with a specialist equipment supplier. Technical support for mass production can be provided by our team of technicians who have the experience of using silicone materials for adhesive and gasketing applications.



Adhesion properties

Self adhesion on various substrates:

- ◆ Glass, screen-printed or coated glasses, ceramic, enamel
- ◆ Metallic & plastic engineering components
- ◆ Painted steels (epoxy, PES, PU...)

For other substrates & coatings or in the case of extreme heat & moisture measurements, the optimal adhesion can be achieved by using the appropriate primer.

For specific technical recommendations please contact your Sealing & Bonding Technical Customer Service Laboratory.

Bluestar Silicones France SAS

21, avenue Georges Pompidou

F-69486 Lyon Cedex 03 - France

Tel: +33 (0)4 72 13 19 00 - Fax: +33 (0)4 72 13 19 88

www.bluestarsilicones.com