Technical Data Sheet

SAF 30®

September 2015

Strengths Are Flex

The SAF® range is made of patented methacrylate adhesives. This new generation of adhesives ensures adhesion to several materials without the need of primer.

SAF® - Characteristics

The SAF® adhesives offer many amazing characteristics because they have high adhesive strengths combined with elongation up to 400%.
These qualities are essential to realize bondings able to resist to impacts, vibrations and peeling.
The linear shrinkage is about 1%.

SAF® - Advantages

All the SAF® range products are resistant to :

- **Fire** and **smoke**: the products obtained the **M1/F1** accreditation (according to the standard NF F 16-101 and STM-S 001)
- **Temperatures**: usage between –40 à 150°C, without any loss of mechanical properties.
- **Humidity:** during assembly.
- **Freshwater**, **salt water** or **demineralised water** including **permanent immersion**.
- **U.V:** without affecting mechanical resistance.
- **Aggressive environments** such as the alkaline, dilute acids, polar solvents, oils, humidity….

Each reference is available with a choice of **reactivity**, thereby allowing the user to **control the curing time** from few minutes to hours.

SAF® - Applications

AEC POLYMERS® has developed several primerless* bonding applications with the SAF® range of adhesives:

- **Glass.**
- **Metal** such as aluminium, steel and all types of alloys…
- **Technical plastics** such as ABS, PMMA, acrylics, PVC, polycarbonate…
- **Laminated** glass/resin ; polyester, (including DCPD), vinyl ester, epoxy, with or without gel coat, as well as SMC/BMC et pre-impregnated époxy.
- Tender or stiff **wood** like teak.

*Our laboratory is able to realize feasibility studies for any other materials.

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Technical Data Sheet

AECPOLYMERS ARKEMA GROUP

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Characteristics

System	Bi-component 1/10 volume ratio
Polymerization	Room temperature
Process	Chemical joint
Elongation	25% - 30%
Specificity	Temperature performance under stress

SAF30® resists to the post curing of powders paints up to 200°C during 20 min but it should not have any mechanical touch during the process. Avoid pieces suspension in the furnace.

Liquid properties

Appearance : Resin SAF30® = cream

Hardener SAF30® = white or black

Specific gravity (20°C) : Resin SAF30® = 1,05-1,10

Hardener SAF30® = 1,10-1,15

Viscosity Brookfield (thixotropic*) (mPa.s @ 23°C with mobile TD) :

Resin SAF30®: 130 000 - 140 000

Hardener SAF30®: 50 000 - 60 000

* Remains non-sag when applied on vertical surfaces.

Physical properties

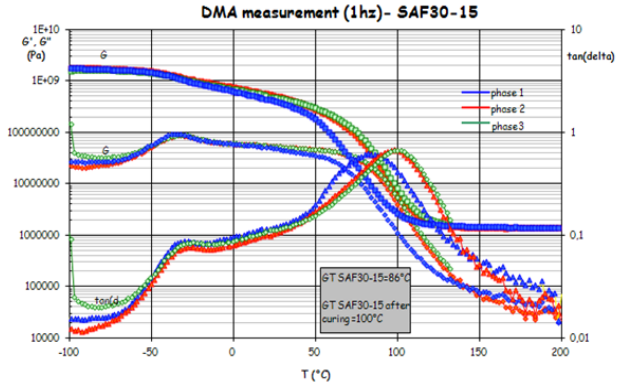
Hardness (Shore D) : 70 - 80

% elongation at break* : 25- 30

Tensile strength at break (MPa) * : 14-15

**With ISO 527-1A*

GT measurement [DMA@1Hz(°C)] : 86



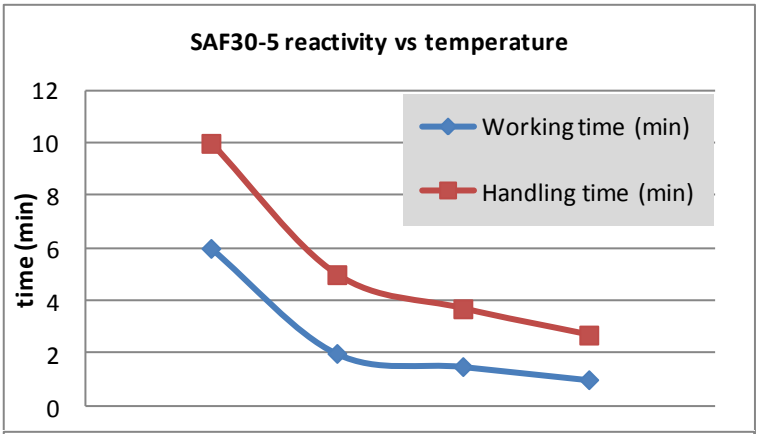
Curing properties @23°C

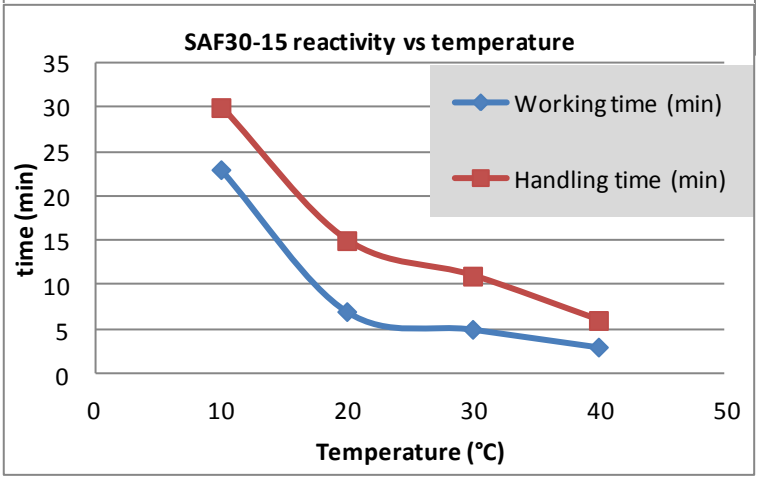
Working time (min) : 2, 7 or 20

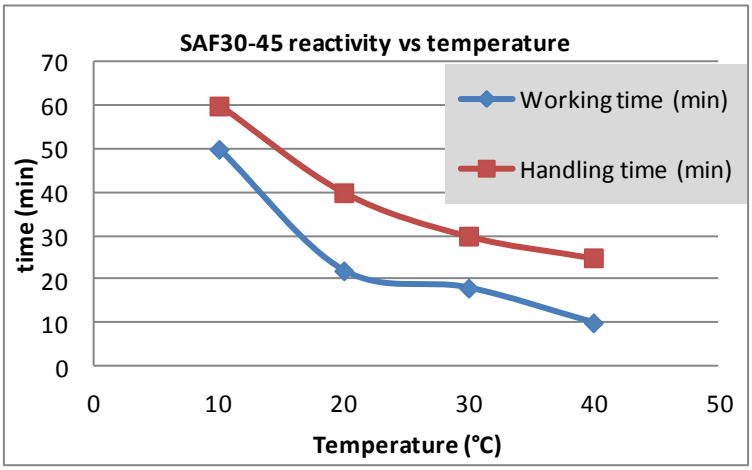
Handling time (min) : 5, 15 or 45

Full cure (hours): 24

Temperature range: -40 to +180°C







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AECPOLYMERS
ARKEMA GROUP

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Mechanical properties

- Lap shear strength* (MPa) with NF1465 on :

Aluminium 6060	25,0 RC *(it)
Aluminium 6061	19,0 RC
Aluminium 1050A	18 RC
Stainless steel	20 RC
Steel	21,0 RC
PMMA	Substrate failure
ABS	Substrate failure
FRP	16,0 delamination failure

1MPa = 145,0 psi

RC = cohesive failure

- Impact resistance ISO 113-43 : 15-20 N/mm

On galvanised steel (0,5 mm joint)…

- 180° peel test value on aluminium (@100mm/min and 25mm width) :

Max strength (N)	110,5
Average strength (N)	90,1
Peel strength (N/mm)	4,0

Surface preparation

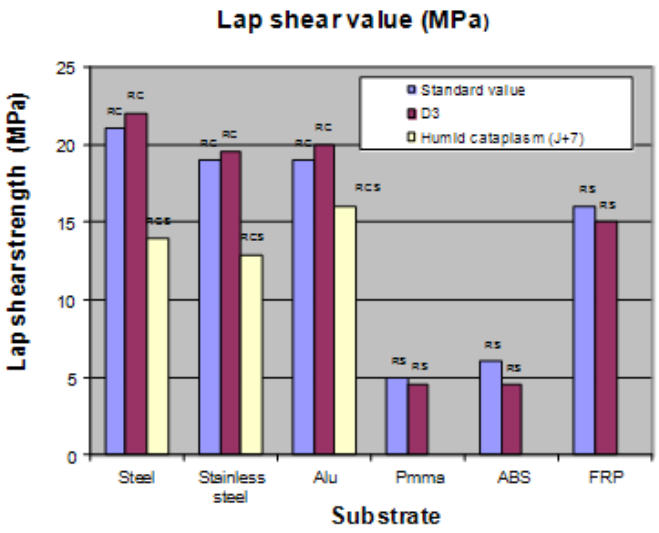
Use **AEC T700** to remove grease, loose contamination or poorly adhering oxides from metal surfaces. Most plastics require a simple cleaning before bonding. Some may require sanding for better performances.

Weathering and ageing resistance

Lap shear strength (MPa) with NF1465 after D3 cycle.

D3 cycle NF EN ISO 9142 3 ageing cycles (72 hours)

Humid cataplasm with NF EN 29142 (70°C during 7 days 100% humidity and 2h00 at -20°C)

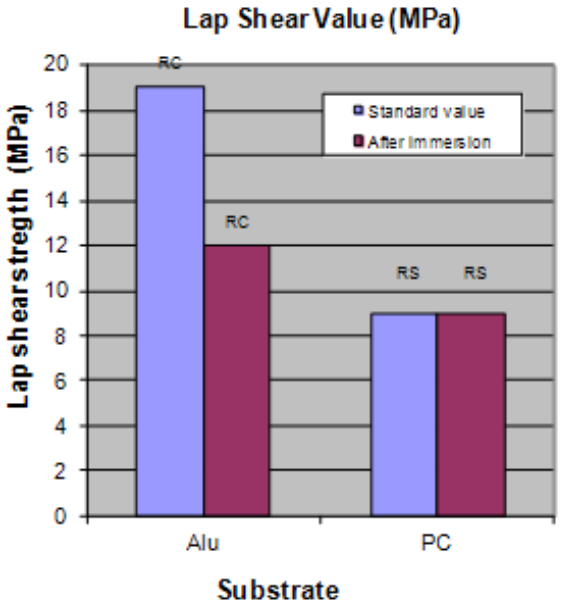


RC : Systematic cohesive failure

RCS : Superficial cohesive failure

RS : Substrate failure

Lap Shear strength after immersion



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Storage

Shelf life is 9 months in unopened original packaging.

Storage temperature: 15°C - 25°C.

Packaging

Available in 50 mL and 490 mL juxtaposed cartridges and 20L or 200L drums.

Handling

SAF30® 50 mL cartridges require the use of M5.4/16 mixers. The 490mL cartridges require the use of MFX10-18 mixers.

The optimum qualities are obtained at room temperature, between 12 and 35°C without post-curing. During the polymerization, the chemical reaction causes a typical smell. However the steams are safe.

Work in a well ventilated area.

Do not swallow !

Flammable.

May causes sensitization by skin contact. Irritating to eyes and skin.

Before using this or any **AEC POLYMERS®**, refer to the Material Safety Data Sheet (MSDS) and label for safe use and handling instructions.

PRECAUTIONS: This product and the auxiliary materials normally combined with it are capable of producing adverse health effects ranging from minor skin irritation to serious systemic effects. None of these materials should be used, stored, or transported until the handling precautions and recommendations as stated in the Material Safety Data Sheets (MSDS) for this and all other products being used are understood by all persons who will work with the product.

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Company:
Contact:

Product use form
Two component adhesives

Hygiene and safety

Before use, be sure that:

- The room is ventilated or equipped with extractor hood.
- You wear gloves (in nitrile for the acrylic bonds and in latex for the epoxies).
- You wear goggles.

You learn about the Material safety data-sheet.

The Bonding

Before bond (metal and thermoplastics):

- Dust and remove grease marks with the AEC T700 and a non-fluffy duster.
- Pulverize the T700 at the place where you want to bond and clean with the duster
- If the substrate is in aluminum just dust with the duster.

Use/preparation of a bi-component cartridge

- Remove the lid (photo1)
- Put the cartridge in the gun (photo2)
- Put the pistons at the right level by starting up the gun until the two components go out at the same time (photo3).
- Fit together the mixer and the cartridge thanks to the lid (photo4).

Drain 5 to 6 cm of bond in order to obtain a good mixing, you have to do it at each mixer change (photo5).

Photo1

Photo 2

Photo 3

Photo 4

Photo 5

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