Adhesion promoter and functional coating

SOCOGEL™

socomore

babbco dynamold dysol magchem socomore

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For more than 40 years, SOCOMORE has been offering a wide range of solutions for preparing and protecting metal surfaces and composite materials in industry.

Its R&D team, ***specialist in sol-gel technologies,***
develops chromium free solutions to reinforce the corrosion protection and the adhesion properties of paint, bonding systems (...) and to offer new functionalized coatings.
Sol-gel solutions get already some approvals by key customers in industry.

SOCOGEL™

What are sol-gels?

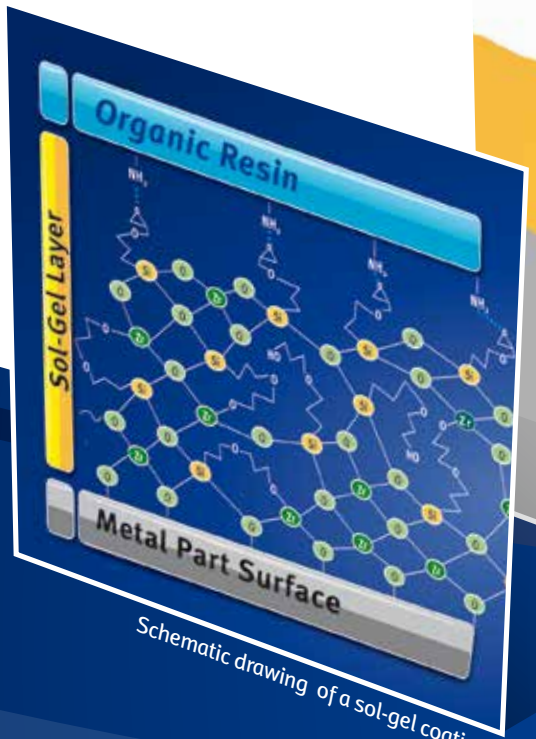
The term sol-gel is a contraction of the words "solution-gelation". Therefore, the result of a sol-gel process is the formation of a polymer from the creation of a sol (colloidal suspension) and the gelation of this sol to form a network that remains in a constant liquid phase (gel).
The most used molecular precursors in sol-gel processes are transition metals, silicon salts or metal alkoxides. Forming a network of oxides from alkoxides involves hydrolysis and condensation reactions. These condensation, or polymerization, reactions lead to an increasingly condensed solution, which upon drying forms a polymeric network.
Socomore uses this technology to offer thin layers or coatings with specific properties.

SOCOMORE's sol-gels

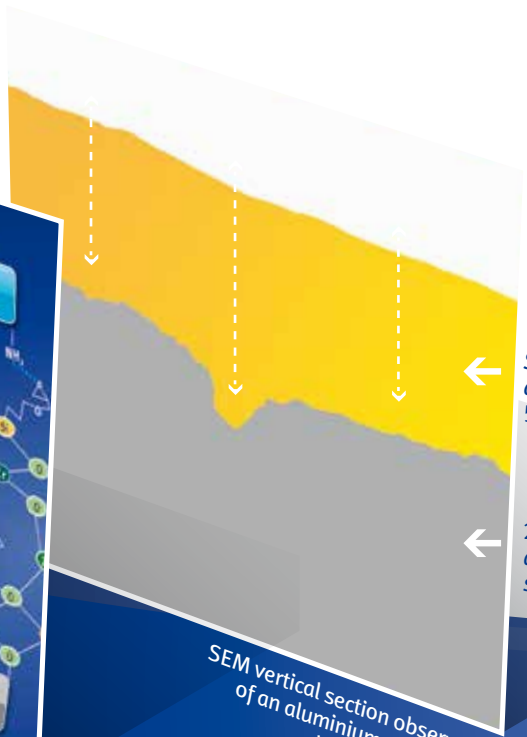
Socomore's sol-gels are water based metal alkoxide solutions that form a cured network through an hydrolysis and condensation reaction. They have been developed from the Airbus and Boeing patents for which Socomore owns a global licence.

They can be used on organic, metallic and mineral surfaces:

- as adhesion promoter for paint or bonding systems,
- as coating with anti-scratch properties, anti-erosion, anti-corrosion, anti-soiling, easy to clean,...
- aesthetic coatings.



Schematic drawing of a sol-gel coating.



SEM vertical section observation of an aluminium panel coated by SOCOGEL B0202.

Our products	Adhesion promoter	Anti-corrosion property	Anti-scratch anti-abrasive properties	Prior to bonding	Prior to painting	Metallic substrates	Composite substrates	Mineral substrates	Organic coating
SOCOGEL B0102	X			X		X	X		
SOCOGEL B0202	X				X	X	X		
SOCOGEL B0202 BLUE	X				X	X	X		
SOCOGEL A0203 BLUE	X				X	X	X		X
SOCOGEL A0104	X	X	X		X	X	X	X	

Characteristics and Benefits

- ➤ Trivalent and hexavalent chromium free
- ➤ Low VOC content
- ➤ Two-components

- ■ Available in different packaging sizes
- ■ Colorless or colored products are available to facilitate the visualization of the applications

- ➤ Adhesion promoter prior to painting and bonding
- ➤ Protective coating and aesthetic properties

- ■ Can be applied to:
  - metallic substrates: aluminium alloys, titanium alloys, nickel cobalt, stainless steel
  - composite substrates
  - mineral substrates like the glass
  - organic coatings primary type epoxy base or P.U.
- ■ Preferably applied by spraying
- ■ No requirement of rinsing after application

The use of SOCOGEL requires a surface preparation that is carried out with aqueous or solvent-based degreasers and/or acid type deoxidizers. That is why Socomore can propose specific ranges: DIESTONE, SOCOCLEAN and SOCOSURF.

SOCOMORE's experience

SOCOGEL™

CUSTOMER REFERENCES

- AIRBUS
- AIRBUS HELICOPTERS
- ALSTOM
- BOEING
- COMAC
- DASSAULT

...

INDUSTRIES

- Aerospace
- Automotive
- Railways
- Glass
- Renewable Energies
- Other industries linked to surfaces

SOLUTIONS TO...

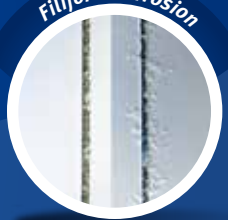
- Substitute chromic conversions
- Solve adhesion problems of paint or other coatings ("Rivet rash" in the aerospace industry, ...)
- Protect surfaces against corrosion scratches, dirtiness
- Improve surface aesthetic appearance

→ ***Examples of applications:***

Corrosion resistance (salt spray test)

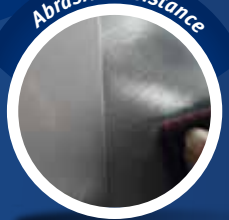
***WITH**/WITHOUT SOCOGEL*

Filiform corrosion



***WITH**/WITHOUT SOCOGEL*

Abrasive resistance



***WITH**/WITHOUT SOCOGEL*

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SOCOMORE is working on improving the SOCOGEL range

➤ *With its own teams (R&D, Technical Support, ...)*
➤ *In partnership within research programs*

REINFORCE / DEVELOP THE FOLLOWING PROPERTIES

- *Anti corrosion*
- *Electrical conductivity*
- *Hydrophobicity*
- *Anti-erosion*
- *Scratch resistance*
- *Easy to clean*
- *Oxidation resistance*
- *Temperature resistance*

SOL-GELS AREAS DEVELOPMENT

FACILITATE THE PROCEDURE

- *By immersion*
- *By spraying*
- *Sol-gel single component*

FACILITATES CURING

- *Photo-curing*
- *Curing at room temperature*

➔ *To help you make the most appropriate choice, please do not hesitate* ***to contact us:***

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