

# socomore



## **SOCOGE<sup>TM</sup>**

*Adhesion promoter  
and functional coating*

**The Surface Company**

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**, is developing chromium free solutions to reinforce the adhesion properties of paint, bonding systems (adhesives, sealant, bonding agents) or offer new coating solutions. The sol-gel solutions get already some approvals by key customers in industry.

# SOCOGEL™



## What are sol-gels?

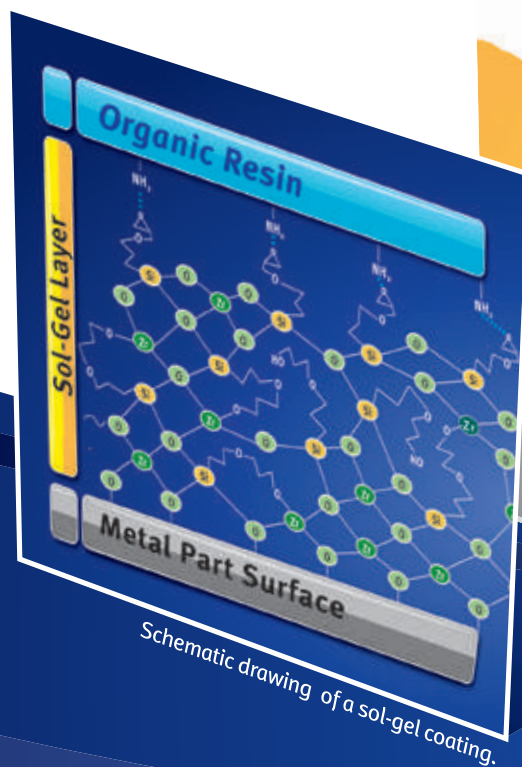
The **sol-gel process** is a wet-chemical technique widely used in the field of materials science and ceramic engineering. Such methods are used primarily for the fabrication of materials (typically metal oxides) starting from a colloidal solution (sol) that acts as the precursor for an integrated network (or gel) of either discrete particles or network polymers. Typical precursors are metal alkoxides and metal salts (such as chlorides, nitrates and acetates), which undergo various forms of hydrolysis and polycondensation reactions. The sol-gel process is well adapted for the coating process.

## SOCOMORE's sol-gels

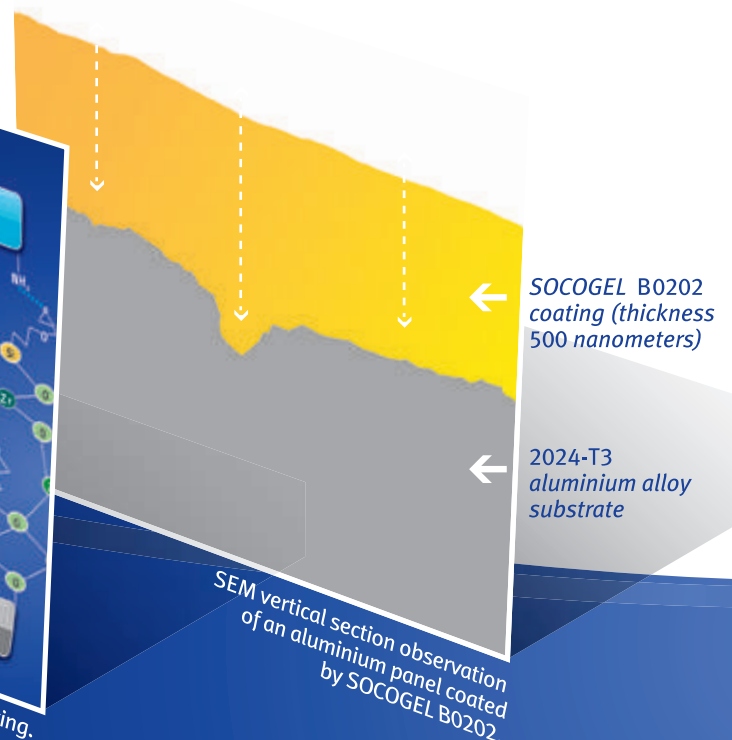
Socomore's sol-gels are water based metal alkoxide solutions that form a cured network through an hydrolysis and condensation reaction. They have been developed from the Airbus and Boeing patents for which Socomore owns a global licence.

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-soiling, easy to clean,...
- aesthetic coatings,
- with or without anti-corrosion properties.



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
SOCOGE <b>L</b> B0102	X			X		X	X		
SOCOGE <b>L</b> B0202	X				X	X	X		
SOCOGE <b>L</b> B0202 BLUE	X				X	X	X		
SOCOGE <b>L</b> A0203 BLUE	X				X	X	X		X
SOCOGE <b>L</b> A0104	X	X	X		X	X		X	


## The SOCOGEL characteristics

- Hexavalent chromium free
- Low VOC content
- Two or three-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
- No electrical conductivity
- Can be applied to:
  - metallic substrates: aluminium alloys, titanium alloys, nickel cobalt, stainless steel
  - composite substrates
  - mineral substrates
  - organic coatings primary type epoxy base
- Preferably applied by spraying
- No requirement of rinsing after application



The use of SOCOGEL often 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



CUSTOMER REFERENCES

- AIRBUS
- ALSTOM
- BOEING
- DASSAULT
- EUROCOPTER
- ..

INDUSTRIES

- Aerospace
- Automotive
- Railways
- Glass
- 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
- ..

→ **Examples of applications:**



WITH/WITHOUT  
SOCOGEL



WITH/WITHOUT  
SOCOGEL



WITH/WITHOUT  
SOCOGEL

## SOCOMORE is working *on improving the SOCOGEL range*

- *With its own R&D team*
- *In partnership within research programs*

### **REINFORCE / DEVELOP THE FOLLOWING PROPERTIES**

- *Anti corrosion*
- *Electrical conductivity*
- *Scratch resistance*
- *Easy to clean*

## **SOL-GELS AREAS DEVELOPMENT**

### **FACILITATE THE PROCEDURE**

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

### **FACILITATES CURING**

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



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