



## TECHNICAL DATA SHEET

### METGEL 10+ Protective coating for metal

METGEL 10+ is a treatment based on sol-gel technique for the protection of metals improving their water repellent properties. The product contains nanostructured silica gel. Once applied it forms a stable layer of amorphous functionalized silica preventing the adhesion of dirt, lime and residues in the microporosity of the material. The product is ideal for the treatment of aluminium (anodized or polished) and steel with different finishing.

### APPLICATION

#### Surface preparation

Before the application the surface has to be as clean as possible and degreased to avoid the entrapment of dust in the film. Apply on dry surfaces.

#### Dilution

The product is ready to use without dilution.

#### Directions for use

Spray or pour the product on the surface. Use a microfiber cloth to spread the product until dry. The surface has to be uniform without halos. Treat small areas (max 1m<sup>2</sup>). Repeat immediately a second application.

ATTENTION: Quick setting product. Don't allow to act but spread immediately.

#### Surface coverage

The product yield is about ~ 60 m<sup>2</sup>/L

#### Drying time

1 minute to touch.

#### Stability

The treated surface can be wet with water after 24 hours. The treatment is completely stable after 72 hours and detergents can be used for the cleaning.

#### Temperature conditions

Min. 5°C – max. 35°C.

## CHEMICAL/PHYSICAL PROPERTIES

### Composition

The product is liquid and contains nanostructured silica in alcoholic solution functionalized with silica alkoxides organically modified.

### Aspect

Liquid, colorless, transparent.

### Relative density

0,791 g/cm<sup>3</sup>

### Drying

At room temperature.

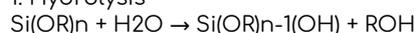
### Flash point

<19 °C

### Reactions

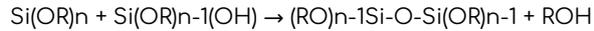
The liquid products forms a thin layer of glass through two reactions:

1. Hydrolysis

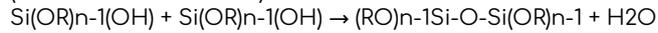




## 2. Condensation



(alcohol condensation)



(water condensation)

### Interaction with the surface

The interaction between the silica layer and the surface is a chemical covalent bond of the type Si-O-Me (where Me is the metal of the surface). The chemical bond is formed only in presence of metal oxides. The product is not suitable for surfaces already treated with organic coatings.

### Optical properties

The silica film does not alter the aesthetic features of the glass being colorless and transparent. The coating is not absorbent in the range  $\lambda=200\text{-}900$  nm (UV-Vis spectroscopy measurements).

### Adhesion

Good adhesion (GT 0) according to the norm UNI EN ISO 2409:1996.

### Hardness

Pencil hardness 9H according to the norm UNI 10782:1999.

### Resistance to detergents / maintenance

When cleaning the treated surface use only water or water and mild detergent with microfibre cloths or soft sponges. For regular maintenance and in presence of hard water it is possible to use acid solutions (hot water and vinegar); avoid alkali wash, powder detergents and abrasives.

### Compatibility with other materials and products

The treated surface is compatible for the bonding with neutral and acetic silicon and MS polymer.

## ADDITIONAL NOTES

### Cleaning of the application tools

After use the tools should be washed with alcohol (2-Propanol or ethanol).

### Storage

Store in a closed container, away from heat in a cool, dry place. If properly stored, the storage life is 24 months.

### Safety

The product is flammable.

### Advices

The product is in alcoholic solution and has a quick setting; please avoid the application with temperatures higher than 35 °C. Carry out a preliminary test on a small surface area. If there is an excess of product, this needs to be removed using alcohol (2-Propanol or ethanol) immediately after the application or abrasives as cerium oxide.

### Note

The data contained herein are furnished for information only and are believed to be reliable. We cannot assume responsibility for the results obtained by others over whose methods we have no control. We reserve the right to modify and improve the product and to adapt it to safety regulations as well as to modify the packages. We suggest to adapt the application of our products on the basis of the nature and of the conditions of the material to be treated by testing the product in a sample area. Our technical office is at disposal for any other explanation.