



# PhotoACTIVE

L&G Holding srl

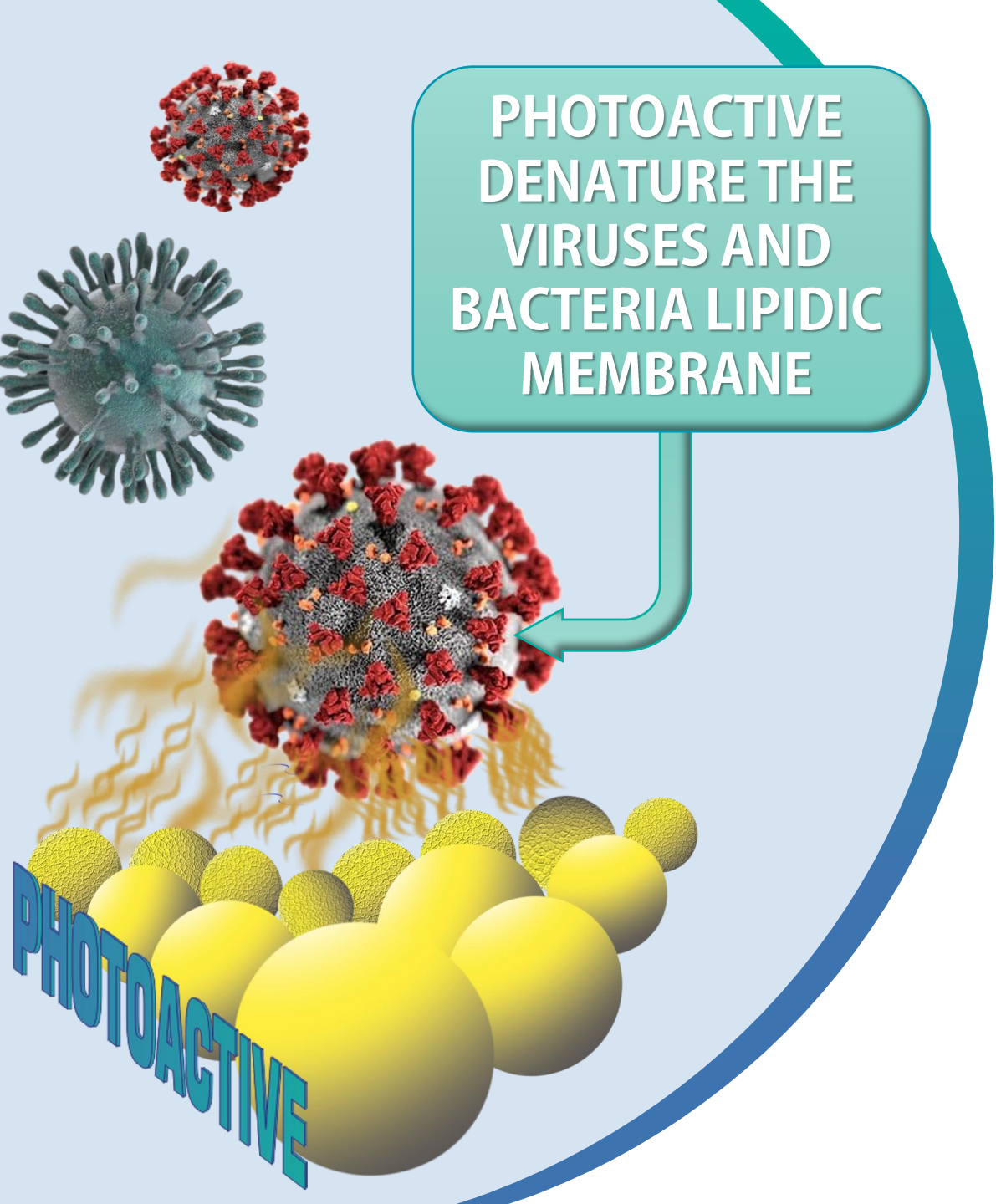


# HEALTHCARE

A Sustainable New Approach to  
Enhancing Healthcare Maintenance

L&G HOLDING SRL IS A FIRM OF PRODUCTION AND A CHEMICAL ENGINEERING PROVIDING INTEGRATED SOLUTIONS QUALIFIED AND COMPLETE TO COMPANIES. IT IS THE COMPANY THAT IS INTERESTED IN THE RESEARCH AND DEVELOPMENT OF MICRO AND NANOTECHNOLOGY APPLIED TO THE ENVIRONMENT, MATERIALS, PRODUCTS, BUT MOSTLY WE STUDY NEW MOLECULES SMART, FOR THE FOOD INDUSTRY, BUILDING, NAVAL, AGRICULTURE AND FOR MEDICAL AND PUBLIC HEALTH SECTOR. WE ARE THE LINK BETWEEN THE INDUSTRY AND THE TECHNOLOGY OF A MACRO OR MICRO STRUCTURE APPLIED TO A MATERIAL.





PHOTOACTIVE  
DENATURE THE  
VIRUSES AND  
BACTERIA LIPIDIC  
MEMBRANE

## HOW **PHOTOACTIVE** WORKS



### THE PHOTOCATALYSIS

PhotoACTIVE performs an anti-microbial, anti-bacterial and anti-mold action, very effective, since instead of other anti-bacterial agents it does not kill bacteria or molds, but through oxidation-reduction reactions it decomposes them into gaseous substances that are dispersed in the surrounding environment not accumulating on the catalyst.

The decomposition of the bacteria takes place by means of the hydroxide radicals ( $\text{OH}\cdot$ ) and the oxygen anions ( $\text{O}_2^-$ ) generated by the photocatalytic process which attack the lipid membrane of the bacteria decomposing it and preventing the aerobic respiration phase of the bacteria.

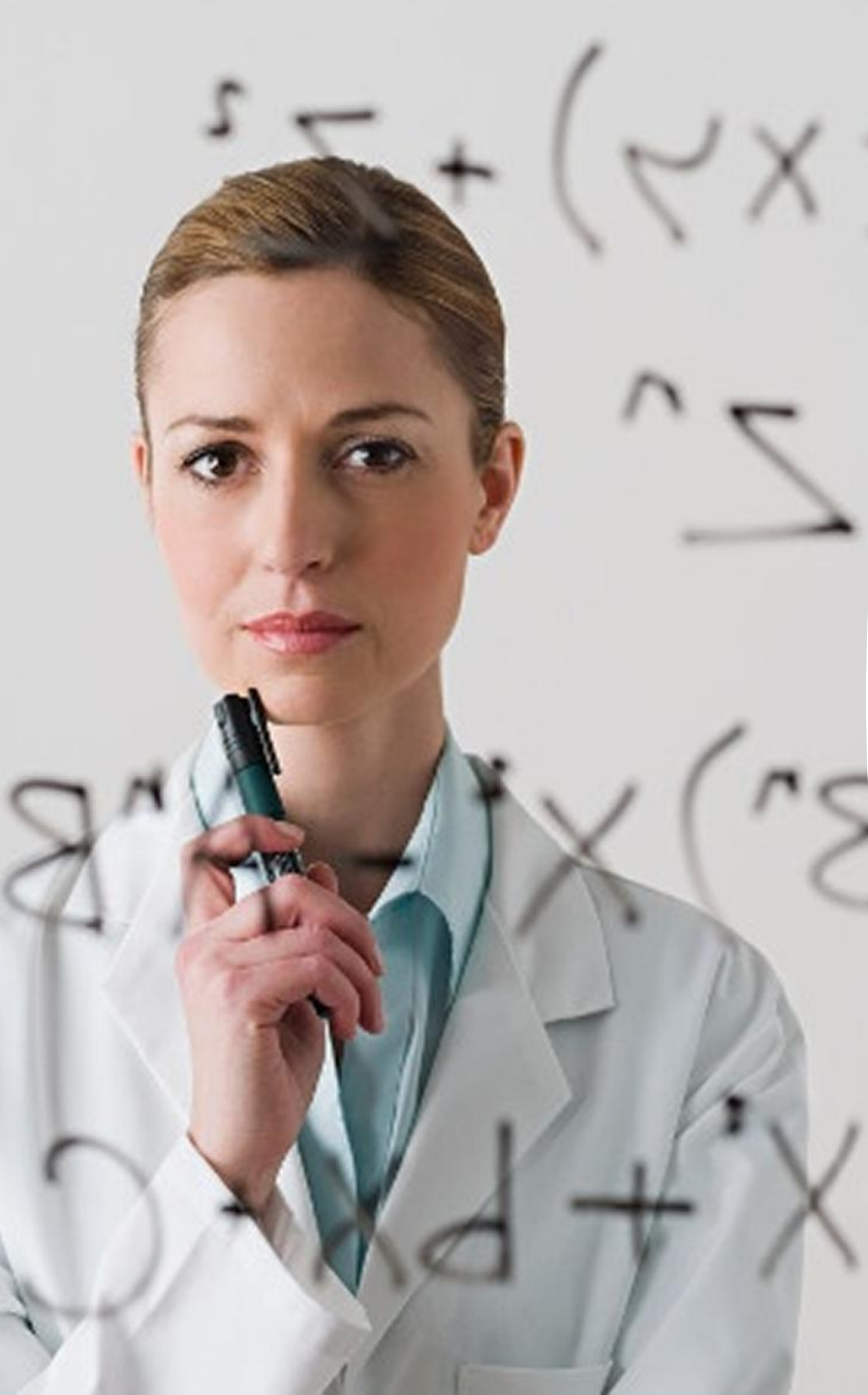
Therefore, the microorganisms die and are then gradually decomposed to obtain carbon dioxide and water which are released into the surrounding environment.

The destruction of molds, bacteria, viruses and other microorganisms allows the elimination of bad odors associated with their presence and allows the substrate to which the titanium dioxide is applied to be maintained at high hygienic conditions.

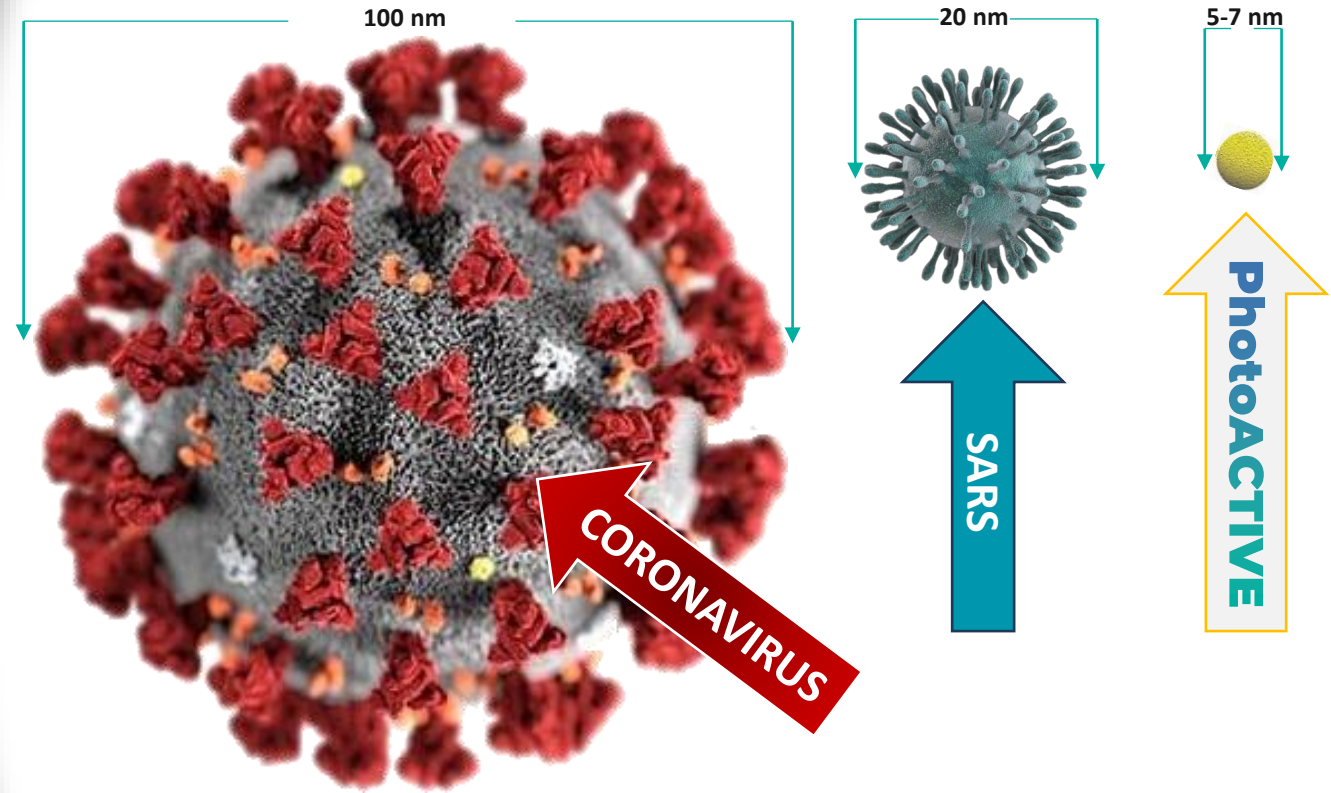
RELIABILITY

100%





## LET'S TALK OF: **DIMENSIONS**



PhotoACTIVE has an average particle size of 5-7 nanometers, much smaller than a virus or bacterium. The drawing shows the dimensions we are talking about on a proportional scale. This nanostructure, thanks to its strong adhesion power, is able to cling to any substrate and, thanks to the photochemical action of the product, it is able to decompose any chemical element carbon-based or biological that settles on its surface. The PhotoACTIVE coating, after drying, is not toxic or harmful.

# APPLICATIONS



## PhotoACTIVE

### HOSPITAL DISINFECTION CHALLENGE



Hospital Acquired Infections are a \$30 Billion annual problem in the US alone.  
Four areas that are not typically disinfected well:

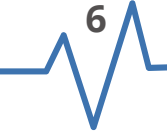
1. Windows
2. Ceilings
3. Beds
4. Light fixtures
5. Air Condition
6. Wall







## OTHER APPLICATIONS





# Our Certification

Made by accredited laboratories

## UNI-EN-ISO-11247

### Degradation of nitrogen oxides in air

Analysis of NOx, NO, NO2

Results: **97%** of NOx destroyed in 15 minutes. Good photocatalytic activity.

## UNI-EN-ISO-6330

### Antibacterial analysis on cloth

Staphylococcus aureus (ATCC 6538)  
Klebsiella pneumoniae (ATCC 4532)

Results: Good Effect (best result)

## UNI-EN-ISO-20645

### Antibacterial analysis on paints

Staphylococcus aureus (ATCC 25923)  
Escherichia coli (ATCC 25922)

Results: Good Effect (best result)

## UNI-EN-ISO 695

### Resistance to alkaline attack

From Class **A2** to Class **A1** until 75 mg/dm<sup>2</sup>

Results: **69.2** mg/dm<sup>2</sup>

## ANTI VIRUS

### Test Made in Japan\*

Influenza virus A

Results:

1°test: **99.987%** of virus destroyed  
2°test: **99.998%** of virus destroyed  
3°test: **99.985%** of virus destroyed

## UNI-EN-ISO-15457

### Anti mold analysis

Renicillium purpurogenum  
Rhodotorula mucilaginosa

Results: No mycelium on specimen after **21** days. (best result)

## UNI-EN-ISO-27447

### Antibacterial analysis on tile

Staphylococcus aureus (ATCC 6538)  
Pseudomonas a. (ATCC 15442)

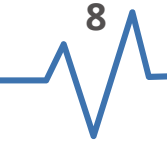
Results: Good Effect (best result)

- \* Unregulated test. (There is no UNI-ISO test available)
- All analysis files available on request



# Duration of the coating

APPLY PHOTOACTIVE FOR YOUR WELLNESS AND FOR YOUR HEALTH



The duration depends on the materials, the state of the substrate and the climatic conditions.





## WE RECCOMAND

HPLV SPRAY SYSTEM

NOZZLE: 0,3 mm  
AIR VOLUME: 2700 l/min.  
PRESSURE: 0,31 bar (max.)  
AIR: HOT



# Application Method

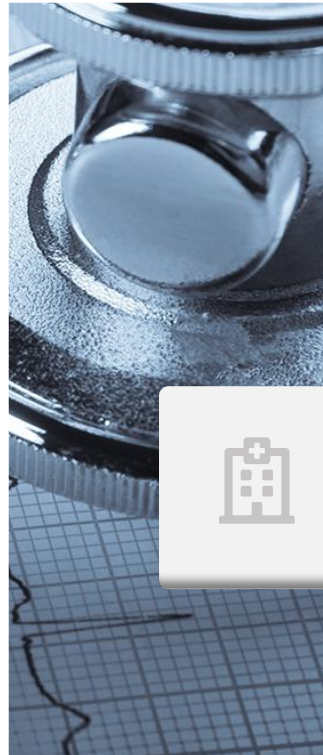
On the field PhotoACTIVE is usually applied in a 2 step process.

1. The surface is pre-cleaned
2. PhotoACTIVE is applied using HVLP spray guns, creating an incredibly thin layer only 40 nanometers thick.
3. Each liter of PhotoACTIVE covers up from 50 to 100 sqm.
4. Dries in seconds, cures in few minutes.

In Production PhotoACTIVE can be applied in a factory setting using a variety of spray techniques.

L&G provides all the information to apply the product.

2020 EQUIPMENT PRESENTATION



We help people to get more  
**Healthy Life**

Our service





**HOLDING SRL**

**THANKS** FOR YOUR ATTENTION

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