

Protection against bacteria, viruses, and fungi

Interior Paint

An **Activa** painted surface uses photocatalysis (* light energy) to continuously produce active radicals on the surfaces:

- **Hydroxyl Radical:** often referred to as the "detergent" of the atmosphere because it reacts with many pollutants, decomposing them through "cracking," often acting as the first step to their removal. It also has an important role in eliminating some greenhouse gases.
- **Peroxyl Radicals:** as active as the ozone, they are the precursors of hydrogen peroxide, one of the most important disinfectants, capable of destroying bacteria, viruses, and fungi.

Therefore, an **Activa** painted surface:

- Eliminates air pollution
- Keeps surfaces clean
- Prevents the development of bacteria, viruses, and fungi
- Eliminates odors
- Contributes to overall wellbeing

Activa can be used on indoor surfaces exposed to polluted environments, mainly in urban or industrial areas where traffic and chemical pollutants are concentrated. **Activa** reduces pollution, keeps surfaces clean, reduces odors, and prevents the growth of bacteria, viruses, and fungi.

PHOTOCATALYSIS

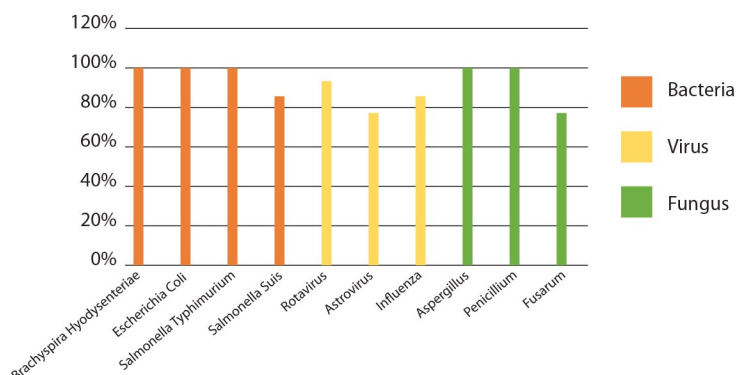
Photocatalysis is a technology that works under the same principles as photovoltaic panels (solar cells). It uses light energy (*), to destroy elements that affect human health and the environment.

- It is maintenance free and its effects are permanent
- It is a clean technology
- It is a surface cleaner and air depolluter
- It destroys dirt and prevents the growth of bacteria, viruses, and fungi
- It is natural (naturally reproduces the activity of the sun and plants)

RESULTS

Up to 100% reduction in ATP(1) measures can be obtained after 40–60 minutes in correctly illuminated surfaces.

The following results were reached after 24 hours:



(1) Adenosine triphosphate (ATP) is a complex organic chemical that provides energy, often referred to as the "molecular unit of currency" of intracellular energy transfer. It is also a precursor to DNA and RNA.

APPLICATION

Activa is applied in two coats (brush, roller, or spray gun) onto clean and dry ceiling or walls. The first coat can be diluted with 10% water if necessary but allow the first coat to dry completely before applying the second. If the surface is not 100% clean and ready, or in case of adhesion problems, it is recommended to apply one layer of PRIMER prior to applying **Activa**.

TECHNICAL DATA

Waterborne photocatalytic dispersion for the reduction of pollutants and protection of surfaces in highly contaminated areas.

- Non-flammable. Waterborne
- VOC content 0.2g/l max
- Touch dry at 74°F: 30–40 min
- Allow 3–4 hours between coats
- Product color can be modified using only inorganic pigments
- Density 1.54 Kg/l
- Yield: 10 m²/l. coat
- Application temperature: between 50°F and 90°F
- Protect from frost

Since the outbreak of severe acute respiratory syndrome (SARS) in southern China was recognized in late February 2003, a large number of chemical disinfectants have been used in the epidemic area which has caused public concern about human health and the environment.

The use of light–reinforced semiconductor minerals is an alternative to conventional chemical disinfectants (Hong He a, 2004).

The minerals selected by our company have been studied over the years for their antibacterial properties ((Wei C, 1994); (Watts RJ, 1995); (Kikuchi, 1997); (Cho M, 2005); (Benabbou, 2007); (Page, 2007)) and are attributed to ROS generation, especially hydroxyl (HO) and hydrogen peroxide (H₂O₂) free radicals (Kikuchi, 1997), as well as several study–focused experiments of the inactivation properties of viruses (Liga & Bryant, 2011).

A study to highlight apart from Hong He's performed with Coronavirus inactivation, is that of Mannekarn et al, in 2007, which showed that certain semiconductor minerals that had been radiated with visible light (VL) inactivate rotavirus, astrovirus, and feline calicivirus (FCV).

Viral concentrations were drastically reduced after exposure for 24 hours. This finding implied that the catalyst products might somehow initially interact with viral proteins in the virus inactivation process. In addition, he shows in his article a partial degradation of the rotaviral dsRNA genome. He also observed that as with bacteria, reactive oxygen species such as superoxide (O₂[–]) anions and hydroxyl radicals (· OH) were generated in a significant amount after stimulation for 8, 16, and 24 hrs. In conclusion, it states that inactivation of viruses, as well as microorganisms in general, could occur through O₂ and OH generation, followed by damage to the viral protein and genome (Niwart Maneekarn, 2007).

After a thorough search for minerals with these capabilities, optimum concentrations, and synergies, **Activa** is manufactured, a liquid treatment for all types of installations, based on non–degradable harmless semiconductor minerals, which in combination with a source light (natural or artificial) permanently eliminates any type of bacteria, virus, or fungus.

Activa also contains components to ensure the adhesion of these minerals and provide treatment durability of about three years.

Bibliography

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All data given in our technical information and recommendations are based on our experience, technical knowledge, and practice under established job and test conditions. Customer must check consumptions and suitability under their particular job conditions, by testing it. Activa can provide technical assessment if required.

We guarantee the quality of our products in case of production defects, excluding further claims. Our responsibility is limited to the value of the goods supplied.

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