



The new generation of Surface Technology

Healthy light
for increased safety
and hygienic rooms



The power of light and oxygen



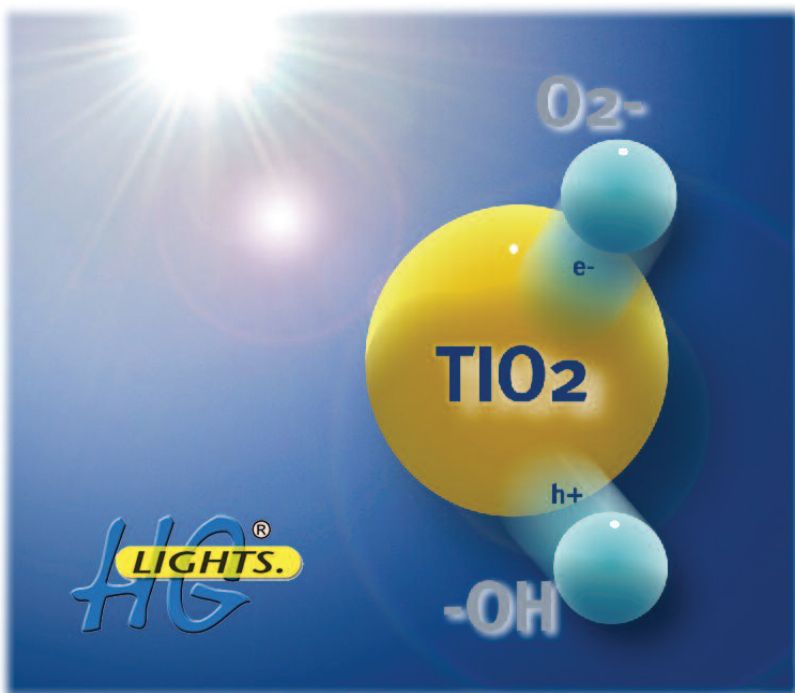
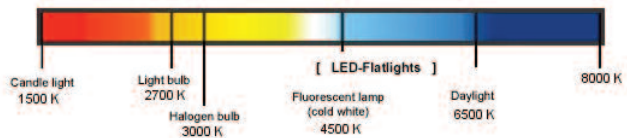
One light purifies the air - just by the power of light and oxygen. That sounds too good to be true, but it is no longer a utopia and has found its way in many areas of daily life. This fascinating new technology is as easy as reliable, because it is based on a natural principle which has been known for a long time - photocatalysis.

In order to provide the light with photocatalytic properties, we coat its surface with titanium dioxide.

The **HG-Lights**[®]-coating is transparent, absolutely non-toxic and harmless for humans and the environment. Certificates from independent institutes warrant the efficacy.

On a **HG-Lights**[®]-surface, oxygen is activated by photocatalysis and is thus able to decompose organic pollutants, bad odours, gases, but also viruses, germs and bacteria with lasting effect and with certainty. This process is also called "cold combustion".

In order to be effective, a light which is equipped with **HG-Lights**[®]-surface technology requires neither any complementary chemicals nor any additional electric energy. No more is required than the light emission of the lamp and the oxygen from the ambient air.



Titanium dioxide (TiO₂) is a semi-conductor; Light generates electron-hole pairs on its surface if the energy of the photons is bigger than the band gap (inner photoelectric effect).

Areas of Application

[...of HG-Lights®]



Clinics and Hospitals

Sanitation. Effective against the dissemination of pathogens through airborne transmission.
Elimination of bad odours.



Schools and Kindergartens

Sanitation. Effective against the dissemination of pathogens through airborne transmission.
Elimination of bad odours.



Business and Offices

Elimination of gaseous emissions from furnishings, construction materials and office equipment. Effective against the dissemination of pathogens through airborne transmission.



Food Industry

Sanitation. Reduction of airborne bacterial exposure.
Degradation of odours and harmful gases.

Retirement and Nursery Homes

Sanitation. Degradation of nicotine, kitchen fumes and unpleasant odours. Effective against the dissemination of pathogens through airborne transmission.



Hotels and Gastronomy

Sanitation. Degradation of nicotine, kitchen fumes and unpleasant odours. Effective against the dissemination of pathogens through airborne transmission.

Hygiene Lighting [...with HG-Lights®]



The simple prerequisite for good and sustainable photocatalysis is light. Perfect light conditions can today be generated by new LED lights and bulbs. Therefore, a very good and effective solution for the air cleaning and sanitizing of interior rooms is the photocatalytic coating of lamp covers of any kind.



Practise:

The exterior transparent cover of the lamp is coated on the side facing the room. Therefore, the active layer is always in direct contact to the ambient air. As the active high-tech coating layer is very thin, it is entirely transparent and does not harm light permeability.



Infections from the air...

The droplet infection and the passage of infection through the air are a part of the direct transmission path of pathogens of various kinds.

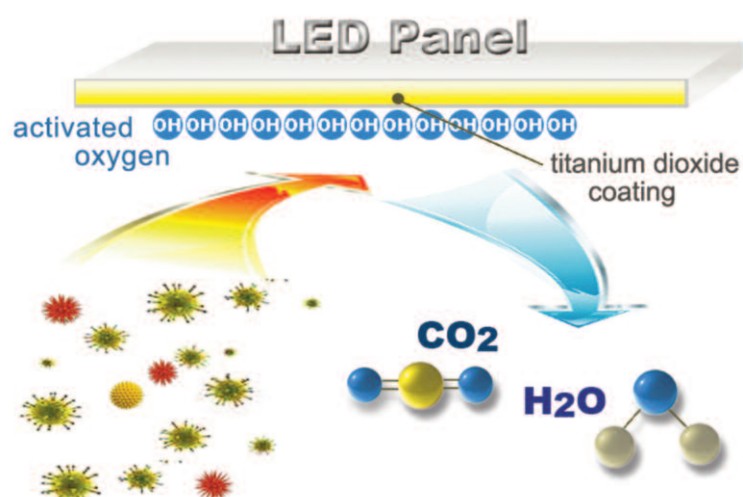
the cold season influenza infections are often transmitted in this way, too.

Lights which are coated with

HG-Lights® clean the air in the most effective manner and are able to prevent airborne transmissions of infections very efficiently.

Especially dangerous are so-called "droplet nuclei", which can often measure only 5 microns and cover long distances through the air (airborne spread). For example, the pathogens of the tuberculosis are primarily transferred in this way.

Pathogens that are transmitted through the air reach the mucous membranes of the upper respiratory tract and multiply there. Especially in



HG-Shields®

[...the inexpensive alternative]



For easy retrofitting of existing lighting systems (eg louvrelights) we supply coated shields for engaging in the ceiling grid or retrofitting into existing lights.

HG-Shields® are available in all standard sizes and on request also in individual formats.

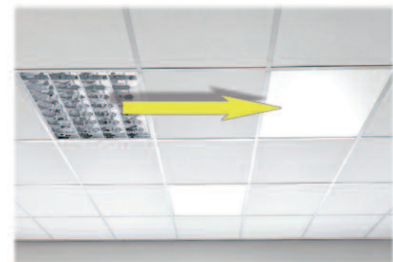


The efficiency:

Often the energy efficient replacement of existing lighting systems (eg T5 luminaires) is not economical. In this case the upgrade by **HG-Shields®** is a perfect solution.

The shields are simply inserted under the existing louvre luminaire into the ceiling **HG-Shields®**.

An attachment is not usually required because the overlying light fixes the **HG-Shields®** securely.



The coating of lights

The HG-coating of shields and light covers make high demands on the binding system and the correct processing of the coating products.

Surfaces such as PMMA and polycarbonate are very hydrophobic and must be appropriately prepared for a durable coating.

For networking, drying and curing of these special coating systems, different integral process steps with IR and UV radiation are required.

For quality assurance, the coating of lights and covers can only be assured in the modern NADICO manufacturing plant in Germany.

Certificates [Test reports]



HG-Lights®-products are safe, certified and entirely free from any risk to humans and the environment. For many years the base material Titanium Dioxide has been widely proven as a white pigment in the coatings and cosmetics industry. In Germany, Titanium Dioxide is approved as a food ingredient (approval no. "E171").

Recognized test laboratories and universities confirm the efficacy of our products and applications with regard to safety, antimicrobial and antibacterial properties as well as degradation of noxious gases and air pollutants.



Think Green

In Germany, we particularly need more enthusiastic support for the opportunities presented by new technologies. Here, the ethical aspects of the protection of human life must be mentioned at the same time as aspects of consumer safety and the protection of our natural environment."

Source: BMBF
(Federal Ministry of Education and Research)



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