AS-100
ANTI MICROB TAPE

Ensures effective and long-lasting protection against microbes present on everyday objects.

FAQ

APPLICATION AND STORING

1. What is the lifetime of the AS-100 tape?
The maximum lifetime of the full functionality of the AS-100 is 12 months. However, the lifetime of photosensitizers can be shortened by exposure to UV light: - in case of indoor use and artificial source of light, the AS-100 would be effective for a period of 12 months; - if the AS-100 is exposed to sunlight to a limited extent (e.g. window handles), we recommend replacing the tape every 6 months; - in case of outdoor use, the lifetime of the tape will be shortened to 3 months (in the Central European zone), or even up to 1 month (in climate with very high UV intensity, e.g. subequatorial climate zone).

2. What is the shelf life of AS-100?
Shelf life is undefined when stored in original box, in dark and in temperature range 15-25°C.

3. Which surfaces can be protected with AS-100?
There are no special guidelines as to the type of surface on which AS-100 can be used. The tape is equipped with a universal acrylic adhesive, which works well on most types of surfaces. In most cases, the adhesive does not leave residues when it is removed.

4. Is special surface preparation required before application of AS-100?
No special surface preparation is required before the application, except from standard cleaning and degreasing, if necessary. At the same time, anti-microbial effectiveness is not dependent on the surface on which the tape is applied.

5. Can once applied AS-100 be reused?
There are no contraindications for using the tape again on a new surface. However, the self-adhesive layer of a removed tape can be much weaker.

6. How to recognize that AS-100 should be replaced?
It is not possible to visually assess the degree of wear of the Tape. For this reason, we recommend marking the date of tape installation using stickers AS-100 / Marker, secured with a special laminate (link).

7. Can AS-100 damage the applied surface?
The AS-100 tape is equipped with a universal acrylic adhesive, which should not react in contact with most of the surfaces. But due to the wide range of potential applications, we suggest conducting an individual test by sticking the tape in a less visible place.

FUNCTIONALITY

1. How are pathogens destroyed on the surface of photodynamic coating?
The photodynamic coating contains photosensitizers, which absorb ambient light falling on AS-100 Tape. As a result, excited photosensitisers transfer energy from light to the oxygen present in the surrounding air. The activated oxygen, also known as singlet oxygen, is able to eliminate pathogens effectively and quickly. When singlet oxygen is in contact with live organisms, its energy destroys cellular structures such as proteins and DNA of microorganisms. The active oxygen layer is much higher than the size of the microbes and reaches standard up to 1 mm. Individual oxygen molecules are able to move away to a maximum of 1 mm and are then deactivated.

2. What is singlet oxygen?
Singlet oxygen is an energetically rich form of oxygen found in the atmosphere. In addition to other oxygen radicals, singlet oxygen is also produced naturally by the human immune system and many other living organisms to combat pathogens. Highly reactive singlet oxygen reacts with the proteins and lipids of the cell's microbial envelope, and the bacterial envelope is deactivated by, for example, lipid peroxidation. Singlet oxygen has been successfully used for many years in photodynamic medicine, which is used by dermatology, stomatology and ophthalmology. For example, it is approved as a treatment for retinal diseases. The safety of singlet oxygen has been documented in the treatment of numerous patients.

3. What are the proportions of microbial reduction to the light source (less light vs. more light)?
Destruction of pathogens requires a certain amount of singlet oxygen, which is generated as a result of the transfer of light energy to oxygen. Therefore, the more light is used, the more pathogens are destroyed and the faster the disinfection process takes place. The process always occurs when the light in the visible range for humans from 400 to 700 nm.

4. What happens in case of darkness and lack of light?
In the dark, the antibacterial effect of AS-100 Tape is temporarily deactivated. After the appearance of the first rays of light (LED light, candle, sun), the process is immediately restored.

5. How to check if AS-100 really works?
Due to the fact that we are not able to observe microbes with the naked eye, we cannot assess the effectiveness of the product ourselves. The effectiveness of photosensitizers has been tested by independent bacteriological and virologic laboratories and confirmed in relevant certificates.

6. How much light is needed to activate the photosensitizers?
The minimum light intensity is not specified, the candle light is enough to activate the photosensitizer. The higher the light intensity, the faster the pathogenic effect.

MAINTENANCE

1. Is the AS-100 water resistant?
Yes, the surface of the tape is not damaged when in contact with water.

2. How to clean AS-100?
We recommend cleaning the AS-100 surface only with a damp, soft cloth. The use of mild detergents is allowed. (!) The surface of the Tape must not be cleaned with agents based on high concentration of alcohol, agents with medium or strong acidic or alkaline reaction. These types of agents can damage the layer with photosensitizers.

3. Can AS-100 be damaged during use?
The AS-100 Tape coating has a high abrasion resistance in case of standard contact with hands. The surface may be damaged by scratching with sharp objects. However, in case of mechanical damage to a part of the tape, it does not disturb the functioning of the rest of the tape.

REGULATIONS

1. EU Regulations on biocides.
In principle, AS-100 Tape does not contain an active substance which itself would be a biocidal substance. In the construction of the tape we used photosensitizers, which as a result of the action of visible light, activate oxygen in the atmosphere, creating the so-called singlet oxygen. The barrier of active oxygen formed on the surface of AS-100 Tape has antimicrobial activity. In other words, the tape does not emit metal nanoparticles or biocides, and its working rule is based on oxygen contained in the atmosphere, which cannot be registered as a biocidal substance. Oxygen, air and a light source are the only components involved in the biocidal process. Products based on photosensitisers can now be distributed in the European Union as biocides. The transitional regulations of Article 93 for in situ biocides shall apply. Until the evaluation of the dossier of active substances is carried out, these products may be sold without authorization. A producer list in accordance with Article 95 is not required.