

INTERESTING FACTS ABOUT SENATOR® ANTIBAC®.

What do we use?

We use a masterbatch, which we add to our standard plastic. The dosage is comparatively low, yet the desired effect is achieved. The additive is based on an antimicrobial effect of silver which has been known for centuries. Silver itself is comparatively inert, the actual bacteria inhibitor here are the silver ions. These are highly reactive. They interrupt vital processes on and in bacterial cells and ultimately kill the bacteria. In contrast to many antibiotics, the ions do not only react with a specific cell area; rather, they attack different cell activities simultaneously. On the one hand, this explains why silver also fights bacteria that are already resistant to conventional antibiotics. On the other hand, it explains why silver ions disable not only bacteria, but also other microbes such as viruses and fungi. Silver therefore not only has an antibacterial effect, but is also generally antimicrobial.

We obtain our batch from a renowned German company and the active ingredient is registered with BAUA. Consequently, you can rely on the usual high standards of product safety at senator®.

Silver, copper, brass ... what works best?

Many metals have an antimicrobial effect. Silver offers the best properties and is therefore more effective than copper or alternative alloys.

<https://www.sanosil.com/de/faq-themenubersicht/wirksamkeit/was-ist-oligodynamie/>

How quickly does the effect set in and how long does it last?

In fact, it is an ongoing process. As soon as the surface comes into contact with bacteria, the silver ions start their „attack“ on them. The process to complete killing takes a few hours. After 24 hours almost all bacteria are no longer detectable. One measures in the laboratory in so-called log steps, i.e. a reduction by log 1 corresponds to 90%, log 2 = 99%, log 3 = 99.9% etc. Our active ingredient reaches Log 3 within 24 hours. The effect hardly diminishes here and will continue beyond the lifetime of the product itself.

Is the compound dangerous for humans?

There is no need to worry about senator® Antibac® products. Silver concentrations that are already antimicrobially effective are generally very well tolerated by humans. Furthermore,

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in most “superficial” applications - for example coated keyboards, textiles or creams - silver particles only reach the skin (dermal exposure). And this is considered a safe barrier - at least for micro silver particles. This barrier could be overcome by using nano-silver. That is why the European authorities are taking a closer look at the subject of nanoparticles and you should always ask for details yourself. senator® does not use nano-compounds.

How does senator® mark the goods?

The marking of “treated goods” is intended to ensure that the most important information is always passed on in the supply chain to the next user and later to the end user. We will comply with this by including a leaflet into each box of Antibac® products. This will contain the following text in 23 languages:

“Writing instrument with antibacterial surface to reduce bacterial growth. Product contains silver phosphate glass mixed in plastic. There are no relevant precautions required for normal use. After use, the product can be disposed of with household waste.”

We do not use any nano material, so there is no special marking in this direction. Our active ingredient has no specific hazard classification other than slight eye irritation. However, since in our case the active ingredient is bound in the plastic, this risk is eliminated. Therefore no special labelling is necessary. Theoretically, the dealer would have to pass on above information to the industrial customer and the industrial customer would also have to inform the end user at the time of delivery. Of course, in this case this can also be done orally. The ideal solution would be to use a case/wallet with the above information.

Does silver give rise to resistances?

Bacteria can develop resistance to silver, although hardly any resistant bacteria are known. This is due to the fact that it is difficult to develop resistance to the versatile type of effect. On the contrary, it is actually deliberately used where multi-resistant germs are encountered in order to kill them (e.g. in clinical areas/hospitals/care facilities).

Are viruses also killed?

Silver offers an antimicrobial effect, i.e. it is effective against bacteria, fungi, mould and also against viruses. Initial tests have shown its effectiveness against the corona virus, but these cannot yet be conclusively assessed.

<https://medizin-und-technik.industrie.de/markt/coronavirus/mit-mikrosilber-erfolgreich-gegen-das-coronavirus/>

<https://www.nanoinitiative-bayern.de/nanosilber/nanosilber/faq/>

We can clearly prove the effect against bacteria with tests of our active ingredient.

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Are the senator® Antibac® products medical products?

No. The senator® pens are not medical devices. Through the use of silver for the purpose of the antimicrobial effect, the products fall under the biocide regulation as so-called „treated goods“. To be able to offer treated goods, an effect needs to be demonstrated. This can be confirmed for our active ingredient by laboratory tests.

Can senator® produce every product with this effect?

We can equip any product that we produce ourselves in Groß-Bieberau with this effect. Colouring is also possible. For this, we need a minimum of 20,000 pieces. In fact, we could also combine it with recycled material.

Is the print also antibacterial?

We currently use normal inks, i. e. no special colours. It can be assumed that the silver ions show their effect across the colours. A full-surface HD printing including lacquer coating, however, would make no sense.

Does the active agent interfere with the advertising message?

We at senator® attach great importance to the durability of our prints. You can also rely on our Antibac® series for long-lasting prints.

How are the products disposed of?

The senator® Antibac® series can be disposed of as usual with household waste.