

SEFAR® **AntiBac** – Minimizes the colonization of micro-organisms / bacteria on filter fabrics in the areas of food, non-food and medicine

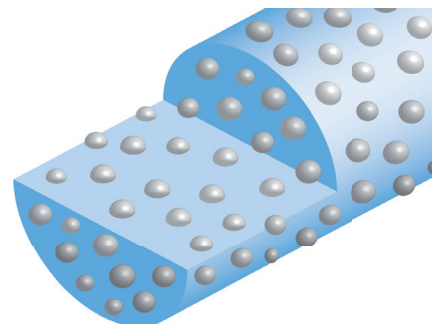
Equipping yarn / fabrics with silver

Sefar has developed a special anti-microbial fabric that does not need any coating and is nonetheless highly efficient.

This minimizes the breakdown of silver particles through thermal and mechanical stress.

The silver particles integrated in the polymer are a fixed component of the yarn.

It also achieves a good repository effect.



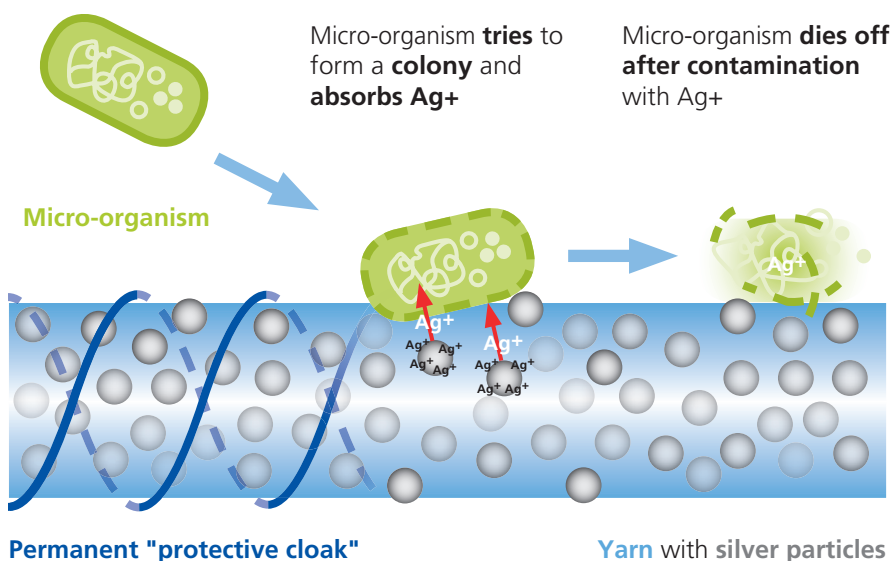
How silver ions (Ag⁺) in the yarn affect micro-organisms

Silver (Ag) + water (H₂O) = release of silver ions (Ag⁺)

- Silver ions (Ag⁺) are released on the surface of the silver.
- Silver ions are toxic for micro-organisms (e.g. algae, bacteria, protozoa, spores).
- Silver ions attack the cell membrane or penetrate the cell and destroy it.



- The yarn generates a permanent "protective cloak" and inhibits or prevents any microbial or bacterial regrowth.



Anti-microbial function of silver particles

How are silver ions created?

Silver particles oxidize on contact with moisture / water and release **silver ions Ag⁺**.

The positively charged, highly reactive silver ions are responsible for the anti-microbial effect.

Areas of use for SEFAR® AntiBac fabric

Due to the reciprocal action between silver and moisture, the main areas of use for this fabric lie in the segments **food**, **non-food** and **medicine**.



Positive aspects of silver additives in technical filter fabric

General

- Silver ions are universally effective against 650 types of bacteria
- Long-term release of positively charged silver ions
- Highly effective against various micro-organisms such as: algae, bacteria, protozoa, spores
- Bacteriostatic effect inhibits the multiplication and growth of micro-organisms
- Bactericidal effect blocks the metabolism and directly kills off micro-organisms
- General improvement of hygiene and prevention of odor formation
- Does not irritate skin or eyes, non-allergenic

Water (potable and process water)

- The use of additives such as chlorine, anti-algae and flocculants can be reduced or completely discontinued
- Reduces carbonate hardness (calcium and magnesium ions) and the amount of chlorine and lead in water
- Prevents the formation of a biofilm on water
- Minimizes or completely prevents odor formation
- Increases the shelf-life of water in closed circuits or storage systems

Healthcare

- Effective against micro-organisms resistant to antibiotics
- Prevents the formation of biofilm on wounds
- Accelerated healing process for skin diseases
- No skin reactions

Quality tested by the Hohenstein Institute

Anti-microbial test

Objective

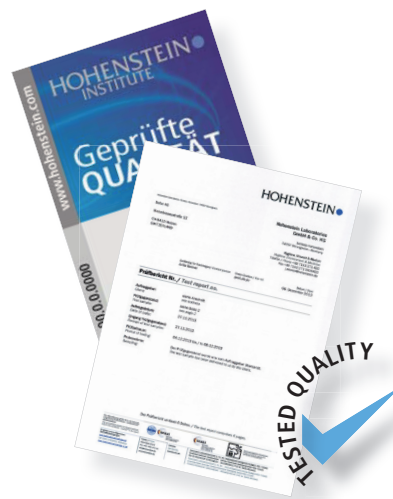
Effectiveness of a textile additive for product protection, odor reduction or infection control.

Test

Evaluation of the effectiveness of additives containing silver or other biocides on bacteria, mold, yeast and/or viruses.

Methods

International Standards (excerpt): ISO 20743, ISO 22196, EN 14119, ASTM E 2149 and application-related modifications.



Important Notice

The products (the «Products») manufactured and sold by any Sefar Group company («Sefar») are not specifically designed, tested or approved for the use in medical implants. Sefar does not make any representation regarding the fitness of the Products for the use in medical implants. If the Products shall be used in medical implants by a manufacturer of medical implants (the «Manufacturer»), it is the sole responsibility of the Manufacturer to ensure compliance with all regulatory requirements and the safety and suitability of the medical implants for which the Products are used. Any and all liability of Sefar and any of its subsidiaries and affiliates arising out of or in connection with the use of the Products in medical implants is expressly excluded. The sale of Products for use in medical implants by Sefar is subject to and conditional upon the execution of a specific undertaking by the Manufacturer confirming its responsibilities. Manufacturers who wish to use the Products in medical implants are kindly requested to contact Sefar.

Headquarters

Sefar AG
 Hinterbissaustrasse 12
 9410 Heiden
 Switzerland

Phone +41 71 898 57 00
 Fax +41 71 898 57 21
 filtration@sefar.com
 www.sefar.com