



Swiss antimicrobial expertise
since 1935

Sanitized® T 27-22 Silver
Sanitized® T 11-15

Best available
technology for more
freshness & comfort



The best choice for optimal hygiene function

- › Application without a binder on all types of fabric construction
- › Suitable for padding and exhaust processes
Can be combined with a broad range of other textile finishes.
- › Not nanotechnology
- › Excellent washing and dry-cleaning resistance as well as outstanding heat stability
- › Effective against a large number of bacteria (incl. MRSA)
Improves wearing comfort of clothing and does not alter the feel of delicate and soft-touch fabrics

Safe for man and environment. Based on Sanitized® Silver technology

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In food

Silver as food additive is given the E number E174 and classed as a food coloring (chocolate confectionary)

Established technology

- Comprehensive investigation about antimicrobial efficacy from silver
- Approved effectiveness on textiles



Sanitized® Silver

For more freshness and comfort

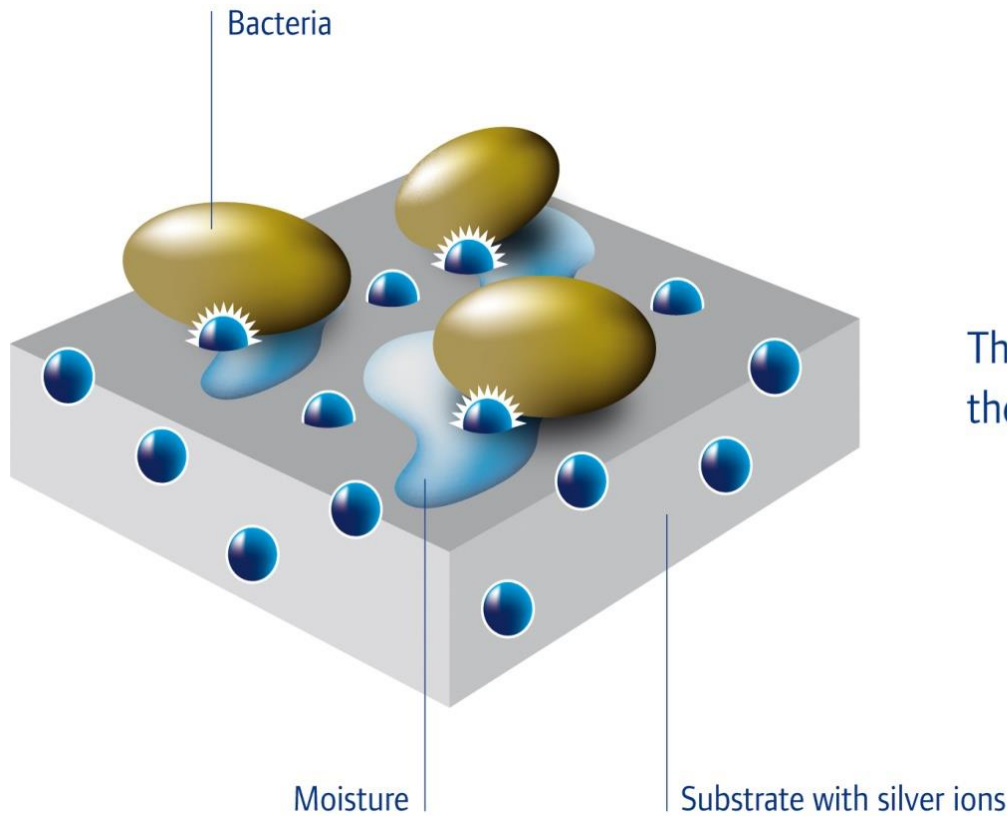
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- › Prevents development of unpleasant odors caused by bacteria
- › Works like a built-in deodorant
- › Durable hygiene function for more well-being
- › Keeps textiles fresh and comfortable
- › Dermatologically tested

Silver process

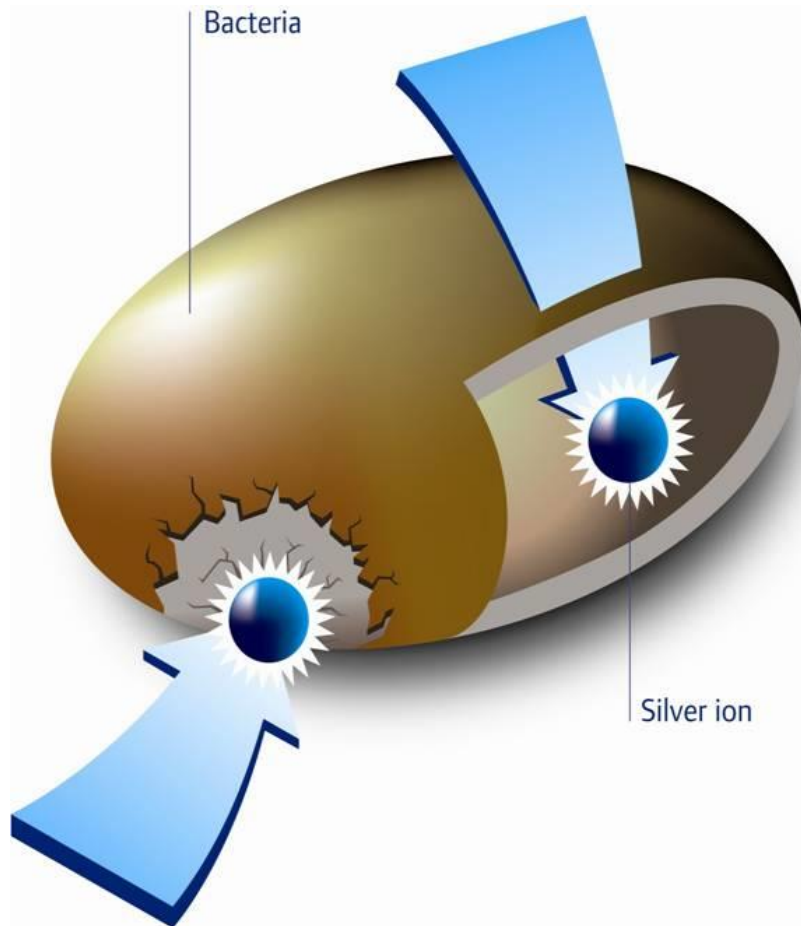
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The silver ion locates the bacteria via the moisture and deactivates it.

Silver mode of action

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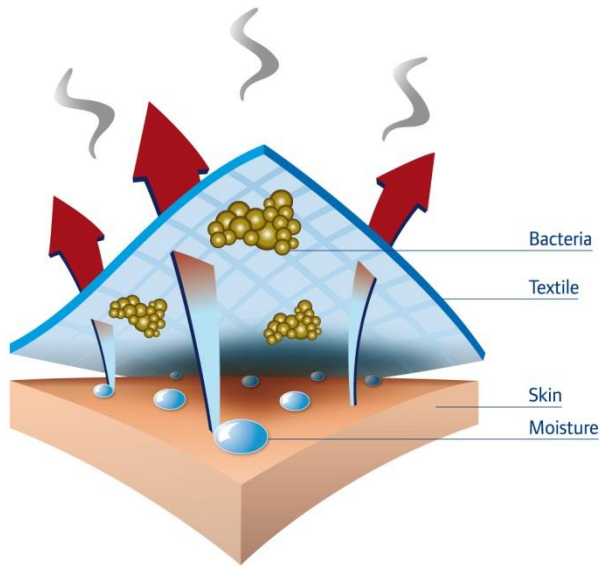


This is the effect silver has on bacteria:

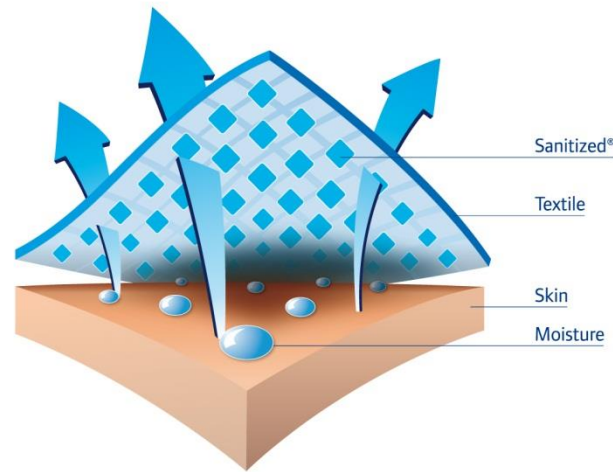
1. Cell membrane is destabilized
2. Respiration is prohibited
3. Food (nutrient) intake is impeded
4. Cell division is inhibited

Sanitized® hygiene function Freshness

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Untreated fibers



Textile with Sanitized® hygiene function
for long-lasting freshness.

Sanitized® T 27-22 Silver

Fields of application

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› **Apparel**

Undergarments, outerwear,
work, sport and outdoor
clothing

› **Home textiles**

Upholstery, curtains,
bathroom sets, towels,
kitchen towels, table cloths,
wipes

› **Bedding**

Mattresses, covers for
pillows and duvets, bed
sheets, fitted sheets, bed and
pillow cases, molleton

› **Medical**

Product overview application and registrations

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| | Sanitized® TH 22-27 | Sanitized® T 11-15 | Sanitized® T 99-19 | Sanitized® T 27-22 Silver |
|----------------------------|---------------------|--------------------|--------------------|---------------------------|
| Exhaust application | • • | • • | • • | • • |
| Padding Application | • • | • • | • • | • • |
| | | | | |
| Oekotex Standard 100 | ✓ | ✓ | ✓ | ✓ |
| US EPA Registration | ✓ | ✓ | ✓ | ✓ |
| BPR - confrom | ✓ | ✓ | ✓ | ✓ |
| SIAA* | | | | ✓ |
| SEK-Label** | | ✓ | ✓ | |
| bluesign® | ✓ | ✓ | ✓ | ✓ |
| | | | | |
| Cellulosics | • | • • • | • • • | • • • |
| Cellulosics pre-brightened | • | • • • | • • • | • • • |
| Wool/Silk | • • • | | • • • | |
| PES | • • • | • • | | • • |
| PA | • • • | • • | | • • |

* Society of Industrial Technology for Antimicrobial Articles

** SEK can be applied for treated articles



| Special properties | Recommended product |
|---|--|
| Highest washing resistance (EN ISO 6330) | Sanitized® T 11-15, Sanitized® T 27-22 Silver |
| Excellent exhaust ratio (>90 %)* | Sanitized® T 11-15 |
| Combination with other products | Sanitized® T 11-15, Sanitized® T 27-22 Silver |
| High degree of whiteness | Sanitized® T 11-15, Sanitized® T 27-22 Silver |

*After process, exhaust bath can be led directly to sewage plant without further treatment. Application quantity up to 1.0 %

Sanitized® T 27-22 Silver

Product advantages

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Excellent wash fastness, especially on synthetic fibres

20–50 washing cycles according to EN ISO 6330 (2A) 60° C

Suitable for padding and exhaust

Good compatibility with textile effects

Excellent heat stability - product itself does not need any curing

Free from AOX

Dry-cleaning resistance

Reliable and durable bacteriostatic effect against a broad range of bacteria including MRSA (Methicillin resistent Staphylococcus aureus)

Good effect against yeast and micro fungi

Sanitized® T 27-22 Silver

Product advantages

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Safe for man and environment

Accepted by OEKTO-TEX Standard 100 classes I-IV

SIAA approved (Society of Industrial Technology for Antimicrobial Articles)

bluesign® approved

EPA registered

Member of the Responsible Care Programm



Particle size of Sanitized® T 27-22 Silver

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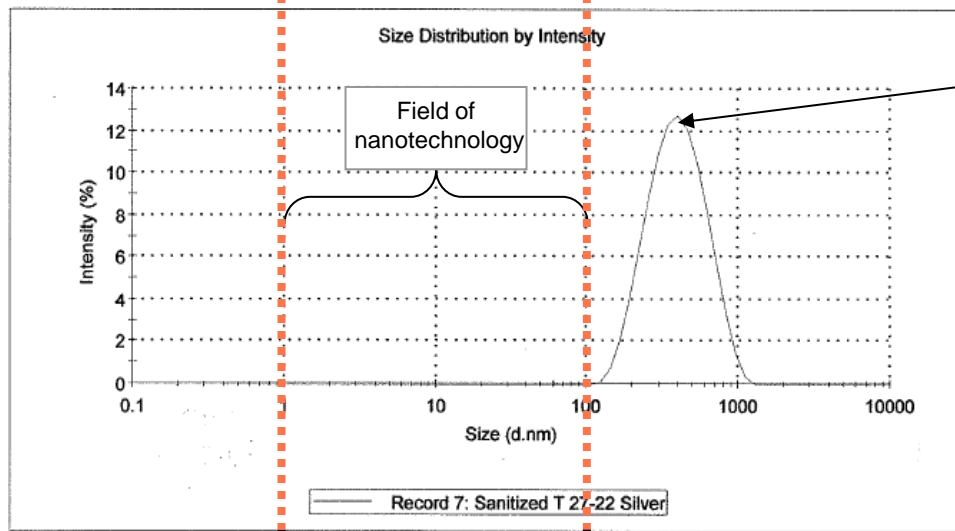


Product based on silver salt (not metallic silver), it is not nanotechnology
Method: Generic latex measurement. spo

Results

| | | Diam. (nm) | % Intensity | Width (nm) |
|-------------------|-------|------------|-------------|------------|
| Z-Average (d.nm): | 362.1 | Peak 1: | 421.6 | 100.0 |
| Pdl: | 0.153 | Peak 2: | 0.000 | 0.000 |
| Intercept: | 0.761 | Peak 3: | 0.000 | 0.000 |

Result quality Good



Sanitized® T 27-22
Peak

Source: Werry 2002

Nanotechnology

Not nanotechnology

Advantages of an antimicrobial effective substance based on Sanitized® Silver

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Highly efficient antimicrobial substance

MIC

| Exciter | Sanitized® TH 22-27 | Sanitized® T 11-15 | Sanitized® T 99-19 | Sanitized® T 27-22 |
|---------------------------------------|---------------------|--------------------|--------------------|--------------------|
| Staphylococcus aureus ATCC 6538 | • | • | • | • |
| Klebsiella pneumoniae ATCC 4352 | • | • | • | • |
| Escherichia coli ATCC 11229 | • | • | • | • |
| Pseudomonas aeruginosa ATCC 15442 | • | • | • | • |
| Candida albicans ATCC 10231 | • | • | • | • |
| Trychophyton mentagrophytes ATCC 9533 | • | • | • | — |
| Aspergillus repens | • | — | • | • |
| Aspergillus fumigatus | • | — | • | • |
| Aspergillus niger | • | • | • | • |

Sanitized® T 27-22 Silver. Certificate

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Results

Description of sample

| | | | |
|-------------------------|--|-----------|------------|
| Sample number: | 2007-2104-08 | Received: | 12.12.2007 |
| Business: | TEXTILE | Type: | Project |
| Identification: | F2-EVO 100 TS71 SO | | |
| Main Component: | PES 70% | | |
| Minor Component: | PA 30% | | |
| Appearance: | Blanc | | |
| Field of Application: | Antiallergic Bedding | | |
| Sanitized Products: | Sanitized® T 27-22 Silver | | |
| Declared quantity: | 0.8% | | |
| Finishing Process(es): | Foulard | | |
| Finishing Parameter(s): | Sechage: 120°C, 1 min. Fixation: 170°C, 30 sec. | | |

Pretreatment: 50 lavages selon EN ISO 6330 (3A) 60°C

Test results of the SANITIZED-laboratory

Quantitative analysis for determination of the bacteriostatic activity:

| Method | Test point | Activity | Reduction in % | Evaluation |
|----------------|------------------------------------|----------|----------------|-------------|
| ASTM E 2149-01 | Staphylococcus aureus ATCC 6538 | >3,90 | >99,99 | Good effect |

Sanitized® T 27-22 Silver.

Temperature stability

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Excellent temperature stability:

PA / Lycra

- › Stable up to 190 ° C

PES and CO

- › Stable up to 190 ° C

Excellent effect with less application quantity

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| Material | Sanitized® T 11-15 | Sanitized® T 27-22 |
|----------|--------------------|--------------------|
| PES | 2.0 – 3.0 % | 0.2 – 0.7 % |
| PA | 1.0 – 2.0 % | 0.2 – 0.7 % |
| CO | 1.0 -2.0 % | 0.2 – 0.7 % |

Sanitized® Silver.

Restrictions of combination

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When optical brighteners are applied on a textile with Sanitized® T 11-15 respectively Sanitized® T 27-22 Silver, the results should be controlled.

The OBA should be a stilbene-based product.

Safe for man and environment

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Extensive use since hundreds of years

- The Romans used silver for the disinfection of drinking water
- Dental medicine

Medical application

- Catheters are often coated with silver to reduce danger of infections
- Wound care
- Eye drops for newborns



SANITIZED

the strong partner at your side

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