



Catalytic antimicrobial and odor control with AGXX
One technology platform. Multiple integration possibilities.



INNOVATIVE WORKING MECHANISM

- › **Catalytic working principle**, creating ROS from ambient air
- › Active substance (BPR) is “free radicals”



SUPERIOR ODOR REDUCTION

- › Eliminating the root cause of many body odors: **bacteria**
- › Oxidizing residual **odor molecules**, including nonenal
- › Preventing the growth of **mold and mildew**



DERMATOLOGICALLY TESTED

- › Tested for skin compatibility through body compatibility tests
- › **Tested for cytotoxicity** (ISO 10993-5)



HIGH WASH DURABILITY

- › Wash durability **exceeding 100 cycles when incorporated***
- › Wash durability of **up to 50 cycles when applied on the surface***



COMPREHENSIVE PROTECTION

- › **Antibacterial** efficacy, e.g. ASTM-E2149 and ISO 20743
- › **Antifungal** efficacy, e.g. AATCC-30 III
- › **Odor-control**, e.g. field tests, ISO 17299



SUITABLE FOR ALL TEXTILE APPLICATIONS

- › Effortlessly functionalize all common textile products with AGXX via **integration** into the material as well as via textile **finishing** or textile **coating**
- › No impact on the physical properties of the treated materials
- › Smooth integration into the existing production chains

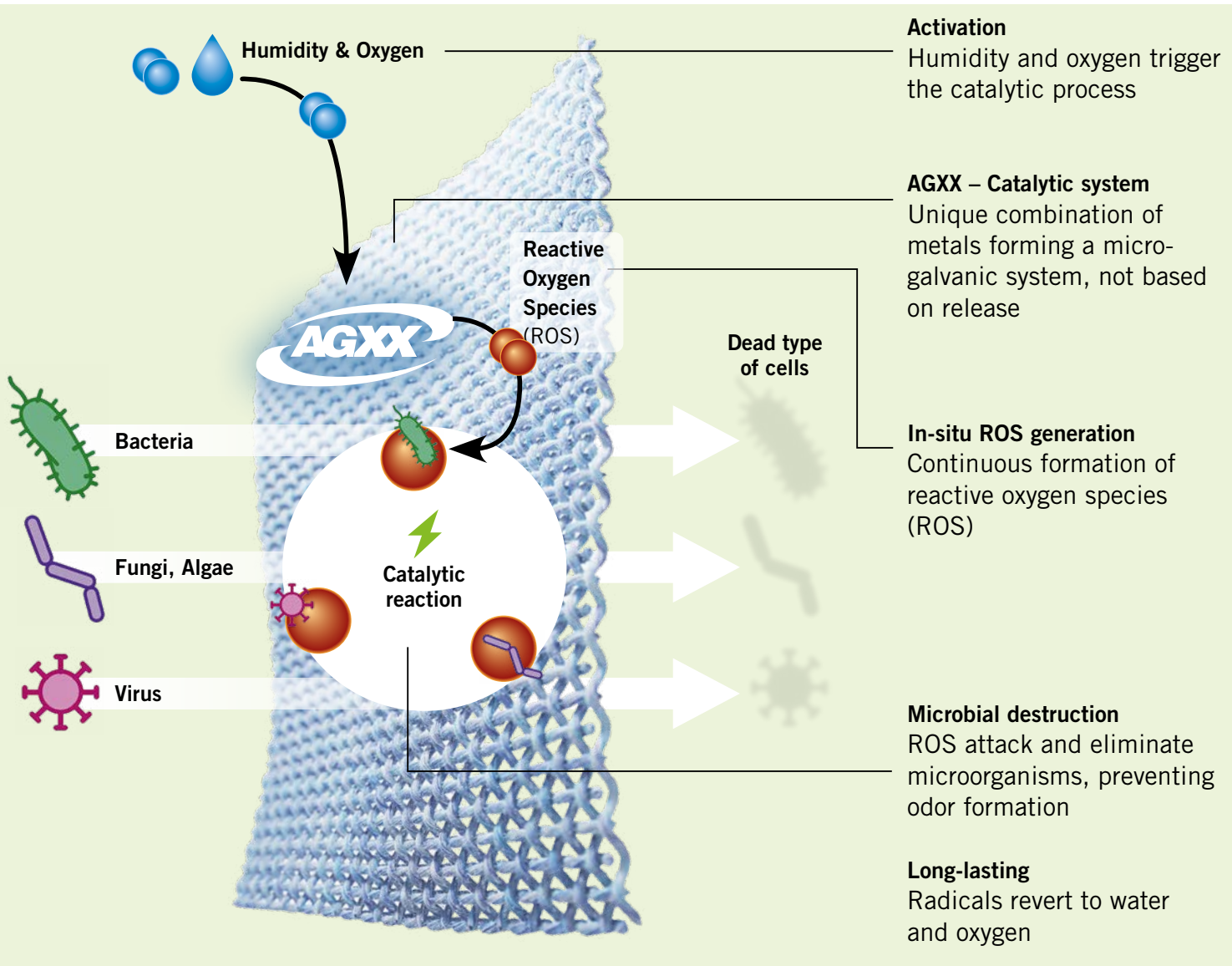


* Tested using washing procedures according to ISO 6330.

AGXX – THE INNOVATIVE SOLUTION AGAINST ODOR, MOLD AND BACTERIA

AGXX is an innovative antimicrobial technology that operates in a fundamentally different manner than conventional biocides. It functions through the catalytic conversion of humidity and oxygen into reactive oxygen species (ROS), which during their lifetime of microseconds, eliminate microorganisms and odors.

AGXX is applied in very low quantities which is bound to the carrier material. Even when the fibers decompose, the AGXX particles will remain unchanged. Its safety was verified in several tests conducted in alignment with the requirements of our biocidal registration and performed a life-cycle analysis.



Through collaboration with various textile institutes and industry partners, AGXX has been successfully integrated into nylon, in addition to the finishing of textiles. Furthermore, surface coating of textiles with AGXX has also been proven successful.

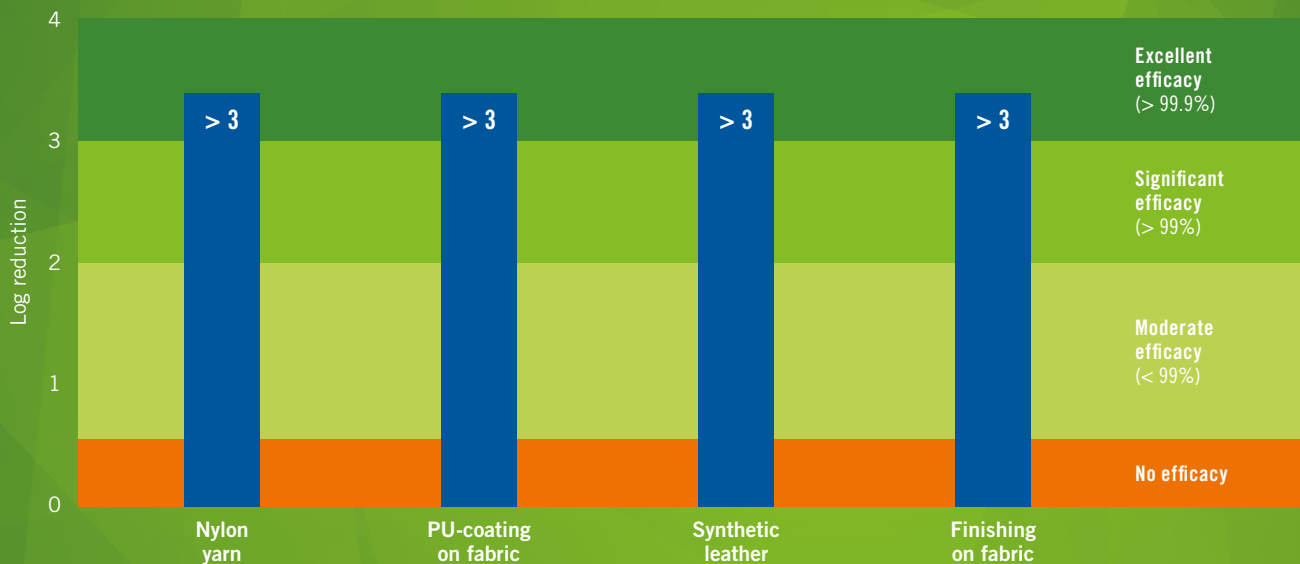
The effectiveness of AGXX has been demonstrated against over 130 microorganisms, including antibiotic-resistant germs such as MRSA. Additionally, AGXX exhibits excellent odor reduction efficacy and antimicrobial efficacy against bacteria that are resistant to conventional silver technologies, such as certain *E. coli* bacteria.



Innovative catalytic technology safeguarding textiles, garments and footwear from **odor, bacteria and viruses.**

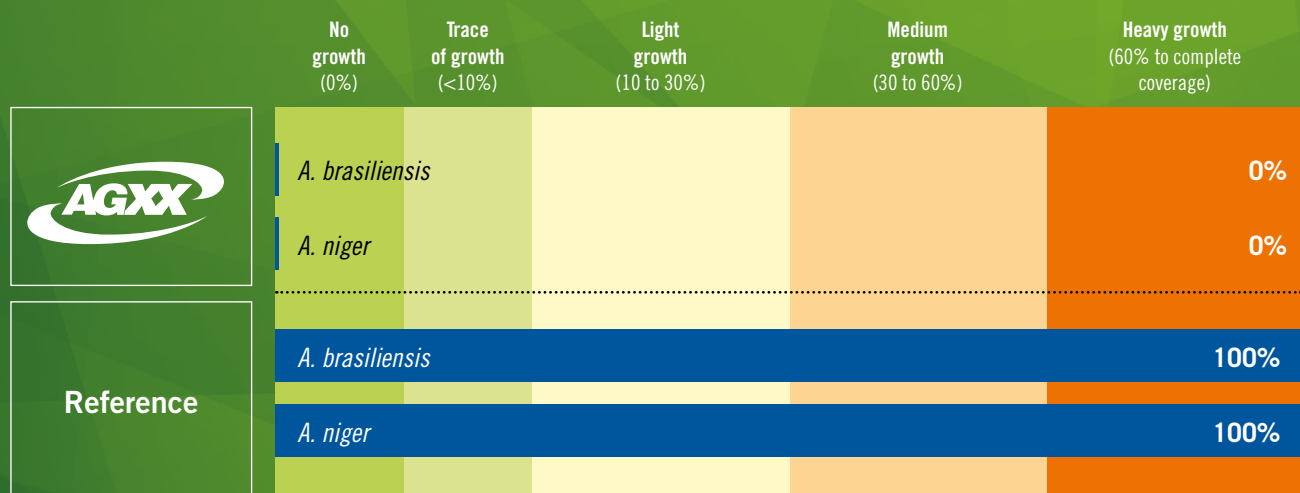


AGXX demonstrates exceptional antimicrobial efficacy according to ISO 22196 or ISO 20743 tests



Enhanced performance for outdoor, home, and furnishing applications. Supports protection against mold growth on surfaces.

AGXX reduces microbial growth by targeting mold spores, helping to limit mold development on treated surfaces. Validated using the AATCC TM30 test method, with demonstrated efficacy against *A. brasiliensis* and *A. niger*.



DIFFERENT FORMS AND CARRIERS

The AGXX technology is available in various types and forms, enabling the functionalization of a broad variety of materials and qualities.

AGXX-Hybrid Suspension

- › Carrier: inorganic, e.g. Al_2O_3
- › D_{50} : 0.3 – 10 μm (according to your needs)

AGXX-Hybrid Powder

- › Carrier: inorganic, e.g. Al_2O_3
- › D_{50} : 0.3 – 10 μm (according to your needs)

STRATEGIC PARTNERSHIPS FOR TEXTILE INNOVATIONS

The development of high-performance textiles requires strong partnerships along the entire value chain. Together with partners, who share the same vision, Heraeus Precious Metals is working specifically to integrate AGXX technology into textile applications.

Textile Finishing

RUDOLF and Heraeus Precious Metals have entered into a strategic partnership in textile finishing and care.



“RUDOLF remains true to its values of quality, innovation and sustainability and continues to develop game-changing technologies to transform the textile industry and meet the growing demands for environmental sustainability. With approx. 2,000 employees in 45 countries, RUDOLF provides logistical and technical support to its customers worldwide. The combination of scientific expertise and customer proximity makes RUDOLF an experienced and competent partner in the textile finishing industry. The company is proud to offer products that comply with OEKO-TEX® and GOTS standards, is committed to the ZDHC and is a partner of the bluesign system. RUDOLF is a founding member of the Transformer Foundation and lives the philosophy of the Responsible Care initiative, which stands for responsible behaviour in the areas of environment, safety and health.”

Textile Coating

Covestro and Heraeus Precious Metals have jointly developed a solution that imparts long-lasting antimicrobial properties to waterborne polyurethane (PU) textile coatings.



“Covestro is one of the world’s leading manufacturers of high-quality polymer materials and their components. With its innovative products, processes and methods, the company helps enhance sustainability and the quality of life in many areas. Covestro supplies customers around the world in key industries such as mobility, building and living, as well as the electrical and electronics sector. In addition, polymers from Covestro are also used in sectors such as sports and leisure, telecommunications and health, as well as in the chemical industry itself.”

Incorporation in Textiles

AGXX can also be incorporated into textile yarns, such as nylon fibers. Heraeus Precious Metals collaborates with strong partners in this area. Contact us to find the most suitable solution for your challenge.

Heraeus Precious Metals is part of the Heraeus group.

Reliability you can build on.

Heraeus - A global family-owned technology group with roots dating back to 1660.



1660

Roots dating back to 1660
Long-term thinking
for lasting partnerships



15,000+

Employees worldwide
Expertise and support
around the world



€ 43.2 bn

Total revenue (2025)
Financial strength
for the long term



~5.5%*

R & D Expenditures
Investing in innovation
for our customers

*based on revenues excl. precious metals

Global Reach Global Support

Close to our customers
in more than 40 countries.



100+ sites
worldwide



Application expertise
and customer support



Innovation and solutions
that make a difference



Contact

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Use biocidal products with care.
Always read label and product information before use.