



AGXX – Antimicrobial and Odor Reduction Technology for Textiles, Garments and Gear

Innovative catalytic technology ensuring long-lasting efficacy in accordance with future regulative requirements



COMPLIANCE WITHOUT COMPROMISE

- › AGXX can be used now and in the future in compliance with the BPR
- › OEKO-TEX® listing as Active Chemical Product (OEKO-TEX® ECO PASSPORT and bluesign® are next!)



ULTIMATE WASH CHAMPION

- › AGXX sets a new industry standard: wash durability exceeding 100 wash-cycles (verified by ISO 20743 & ISO 22196)



FITS FOR ALL

- › Effortlessly functionalize **all common textile products** (e.g. fibers, yarns, fabrics) with AGXX **via integration into the material as well as via textile finishing**. Not impacting the properties of the treated materials.



SAFE TO WEAR

- › AGXX is **proven skin-friendly** (proven by Body-Compatibility-Tests and ISO 10993-5) as the technology is **not based on release of toxic substances**



COMPREHENSIVE PROTECTION

- › AGXX functionalized textiles guarantee enduring **antimicrobial and odor control**, providing a competitive advantage in safety, freshness and longevity of the garments
- › **Deactivation of allergenic potential** (validated by LAH.000.819.A)



SUPERIOR ODOR REDUCTION EFFICACY

- › Proven efficacy against (amongst others) ammonia, isovaleric acid and acetic acid. Tested through gas chromatography and detector tube methods.



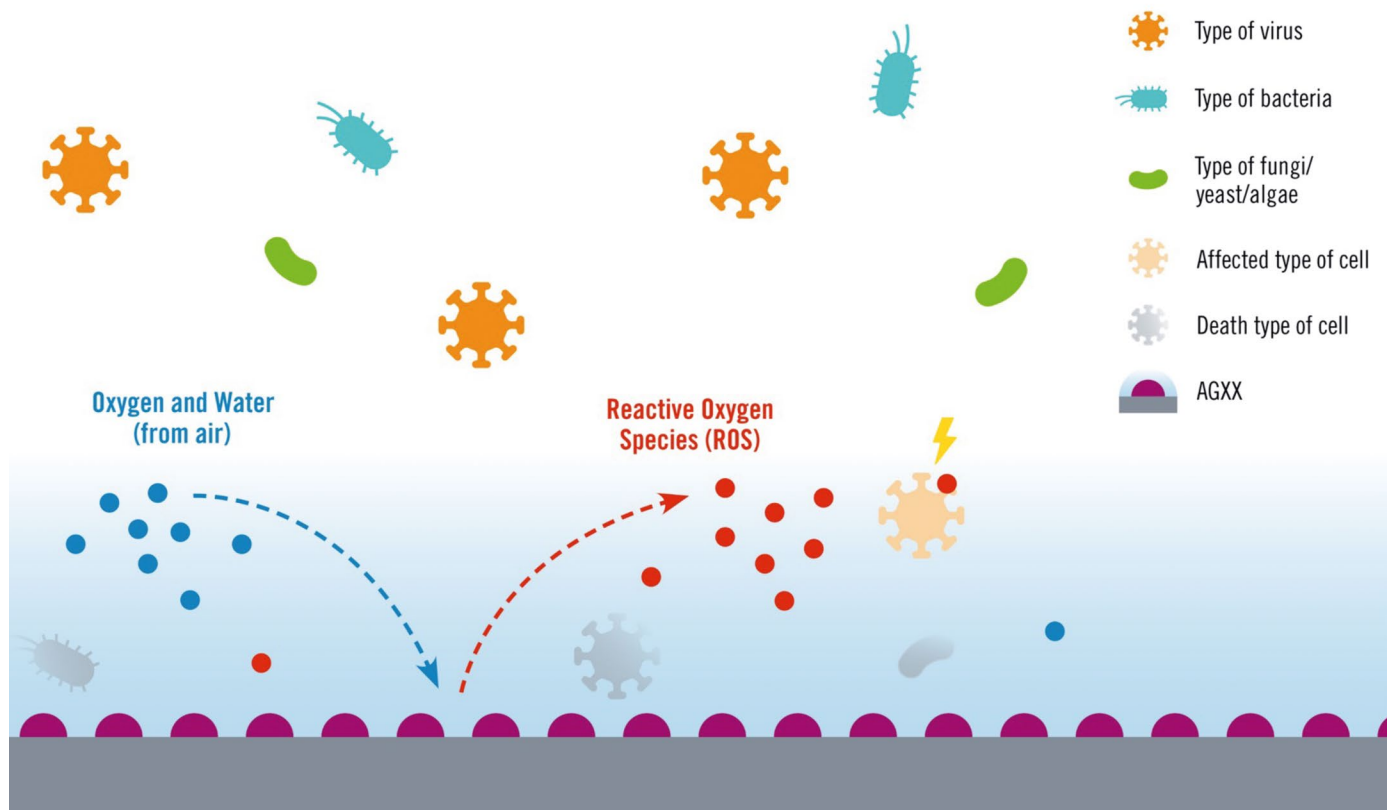
AGXX – SOLVING THE SILVER ISSUE

The regulatory compliant solution against bacteria, viruses and odor

AGXX is an innovative antimicrobial technology that operates in a fundamentally different manner than conventional biocides, particularly silver technologies. Unlike traditional antimicrobial technologies, AGXX does not rely on the release of silver ions or any other toxic or environmentally harmful substances. Instead, AGXX functions through the catalytic conversion of humidity and oxygen into reactive oxygen species (ROS), which ultimately eliminates microorganisms and odors.

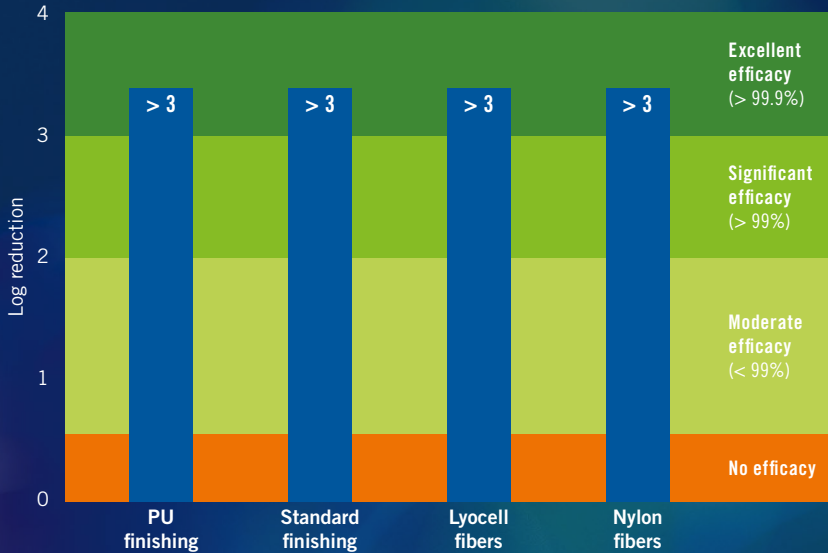
The effectiveness of AGXX has been demonstrated against over 130 microorganisms, including antibiotic-resistant germs such as MRSA. Additionally, AGXX exhibits excellent odor reduction efficacy and antimicrobial efficacy against bacteria that are resistant to conventional silver technologies, such as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

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





Innovative catalytic technology safeguarding textiles, garments and gear from **odor, microbes and viruses.**



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

- › PU finishing
- › Standard finishing
- › Lyocell fibers
- › Nylon fibers

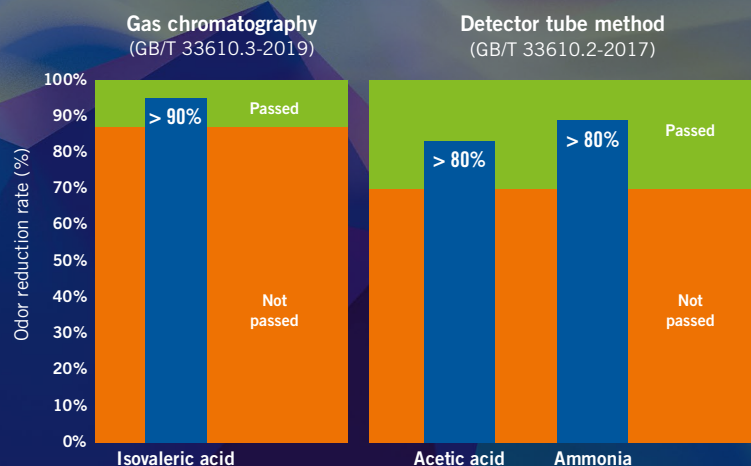


Enhanced performance for outdoor, sports and workwear. **Superlative odor reduction, even against ammonia.**



AGXX demonstrates exceptional efficacy in odor reduction according to GB/T 33610 standard

- › **Isovaleric Acid:** Commonly associated with the odor of sweaty feet, this compound is a frequent issue in synthetic socks.
- › **Acetic Acid:** Known for its sharp, vinegar-like smell, this acid is typically released by body oils and can be intensified by skin bacteria.
- › **Ammonia:** This pungent odor, often produced by body sweat, is commonly found in activewear and sportswear, especially during intense exercise.



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)

AGXX Cellulose

- › Carrier: cellulose
- › D_{50} : 50 μm

ABOUT HERAEUS

Heraeus is a family-owned global technology group headquartered in Hanau, Germany. The company's roots go back to a family pharmacy started in 1660. Today, the group bundles diverse activities in four Business Platforms: Metals and Recycling, Healthcare, Semiconductor and Electronics, as well as Industrials. In the 2023 financial year, the group generated revenues of € 25.6 billion with approximately 16,400 employees in 40 countries.

ABOUT HERAEUS PRECIOUS METALS

Heraeus Precious Metals is globally leading in the precious metals industry and covers the value chain from trading to precious metals products to refining and recycling. It has extensive expertise in all platinum group metals as well as gold and silver. With more than 3,000 employees at 17 sites worldwide, Heraeus Precious Metals offers a broad portfolio of products that are essential for many industries such as the automotive, chemicals, semiconductor, pharmaceutical, hydrogen and jewelry industry.



Sustainability at Heraeus Precious Metals

ESG Ratings and Validations

EcoVadis rates companies' performance in four categories: environment, labor and human rights, ethics, and sustainable procurement. Our operations at our German headquarters in Hanau received a Platinum Rating in 2024, ranking us among the top 1% of all companies evaluated.



CDP promotes standardized disclosures and rates companies' climate, water, and forest performance. In 2024 Heraeus Precious Metals submitted its climate disclosures and received a B rating.



We are committed to realize the potential of precious metals as responsibly as possible.

We underline this commitment with our pledge to responsibility: **precious to us.**



Contact

Heraeus Precious Metals GmbH & Co. KG

Heraeusstrasse 12–14

63450 Hanau, Germany

Phone +49 6181 35-3157

agxx@heraeus.com

www.herae.us/agxx

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