Heraeus

Precious Metals







AGXX – Antimicrobial Additive for Paints and Coatings

Innovative catalytic technology ensuring long-lasting efficacy

Innovative Working Mechanism

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

Continuous protection

- Ensure long-term antimicrobial efficacy with our innovative catalytically regenerated technology, securing a competitive advantage.

Broad-Spectrum Antimicrobial Efficacy

- Highly efficient against Pseudomonas species and other challenging microorganisms.

Dermatologically tested

- Tested for skin compatibility through body compatibility tests at DITF
- Tested for cytotoxicity (ISO 10993-5)

»Still fresh with AGXX«

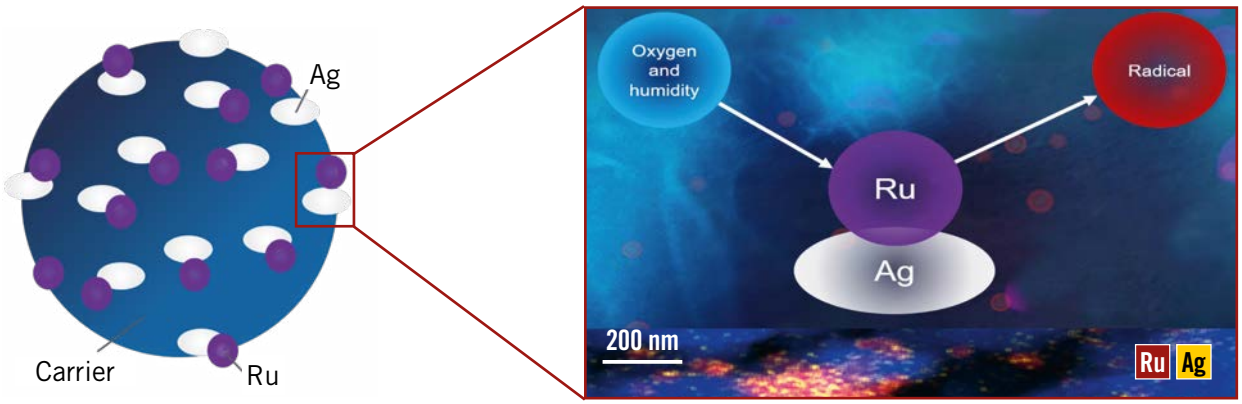


INNOVATIVE ANTIMICROBIAL SOLUTIONS FOR THE PRESERVATION OF PAINTS AND COATINGS

Ensuring adequate preservation is becoming increasingly difficult due to stricter regulations. Many of the traditional active ingredients will be subject to even stricter regulations in the medium term or will disappear from the market entirely. Innovations in the field of biocidal active ingredients are rare and difficult to implement due to high hurdles in the approval process. Developing new active ingredients requires not only substantial financial investments but also extensive testing and approvals, which slow down the process. This poses significant challenges for the industry. An innovative approach to expanding an existing portfolio of active ingredients is the new active substance of in situ generated free radicals. This active substance offers a promising way to increase the efficiency of preservatives while meeting stringent regulatory requirements.

A DISTINCT CATALYTIC MODE OF ACTION

AGXX is an innovative antimicrobial technology based on a catalytic mode of action. Unlike antimicrobial technologies whose mode of action relies on the release of metal ions, AGXX uses a catalytic redox mechanism. In the presence of humidity and oxygen, reactive oxygen species (ROS) are generated at the active surface, contributing to the antimicrobial effect against tested microorganisms.



The effectiveness of AGXX has been demonstrated against over 130 microorganisms, including antibiotic-resistant bacteria such as MRSA, but also fungi, viruses, or algae. Additionally, AGXX exhibits excellent efficacy in eliminating odors and allergens.



Help surfaces look better for longer

- Antimicrobial additives resist mold and mildew, making them perfect for paints used in moist environments like bathrooms.
- AGXX can be used in PT7 as a film preservative and in PT12 as a slimicide.



Effects on the expected lifetime of paint products

- Antimicrobial additives can prolong the shelf-life of paints by preventing microbial contamination, ensuring paints remain usable for longer.
- AGXX is currently undergoing the PT6 approval process for use as an in-can preservative.

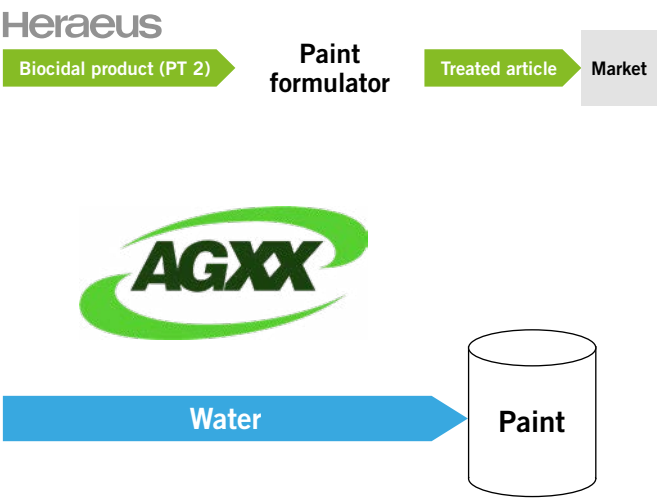


AGXX demonstrates excellent effectiveness as a disinfectant

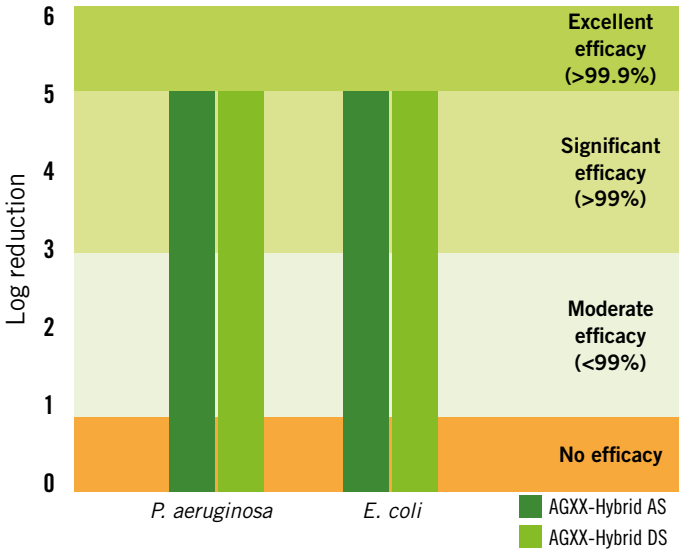
- In tests according to ISO EN 1276, AGXX achieves a reduction of more than six log stages, equivalent to a reduction of more than 99.9999%, against all tested bacteria.
- Results demonstrate disinfection performance of AGXX.
- AGXX can be used in PT2 as disinfectant.

DISINFECTANT

AGXX disinfects process water



Disinfection tests were conducted in alignment with ISO 1276



IN-CAN PRESERVATION

R&D data indicates AGXX is antimicrobially effective as in-can preservative according to *IBRG P16 mod./Wet State Paint Method;* PT6 approval currently in progress

Active Substance	No preservation		AGXX 50 ppm		AGXX 100 ppm	
Type of microbes	B	F/Y	B	F/Y	B	F/Y
Week 1	0	0	0	0	0	0
Week 2	3	3	0	0	0	0
Week 3	3	3	0	1	0	0
Week 4	3	3	0	1	0	0

Contamination in an acrylate-based wall paint with and without preservative.
B Bacteria: *E. coli* DSM 682, *P. aeruginosa* DSM 939, *S. aureus* DSM 799; 10^5 CFU/ml
F/Y Fungi/Yeast: *C. albicans* DSM 1386, *A. brasiliensis* DSM 1988; 10^5 CFU/ml
Evaluation: 0 = no contamination (germ reduction >99.9 %) ... 3 = high contamination >10^5 CFU/ml

FILM PRESERVATION

AGXX prevents from microbial growth

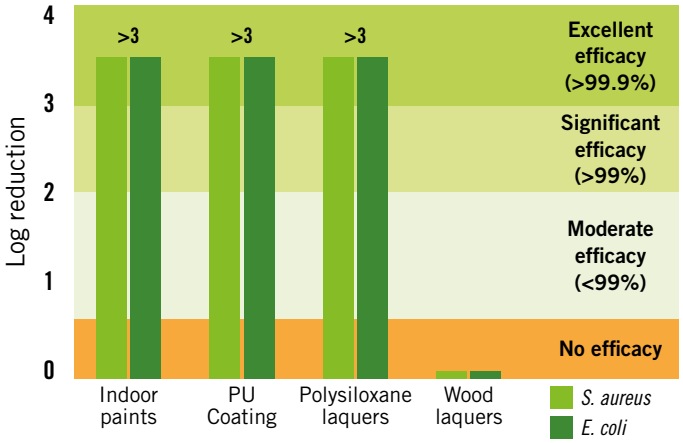


w/o AGXX | AGXX

Antifungal testing in accordance with BS 3900

ANTIMICROBIAL SURFACES

AGXX is effective in water-absorbing matrixes



Antimicrobial testing in accordance with ISO 22196 in various paint matrixes

DIFFERENT FORMS AND CARRIERS

AGXX particles are available in a variety of types and sizes, as well as different carrier materials. The material can be applied either directly as a powder during the dispersion process or subsequently as a drop-in additive in the form of a suspension.

AGXX-Hybrid-A Suspension

- Carrier: AlO(OH)
- D_{50}: 0.3 µm

AGXX-Hybrid-A Powder

- Carrier: AlO(OH)
- D_{50}: 0.3 µm

BENEFIT FROM A STRONG NETWORK OF DISTRIBUTION PARTNERS



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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



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