



LAPISSHIELD TECHNOLOGY

A novel antimicrobial for water-based coatings

Who is Microban International?

Founded in 1984 by three biomedical engineers, Microban International, Ltd. is the global leader in built-in antimicrobial solutions.



Utilized by
300+
companies worldwide

Proudly displayed
on more than
1,000 products

Globally acknowledged as a consumer Trustmark, the Microban® brand is utilized by 1,000+ companies worldwide and is proudly displayed on thousands of products in over 30 countries.

What is antimicrobial technology?

Antimicrobial technology is a solution that inhibits the growth of microorganisms such as bacteria, mold, and mildew on treated products.

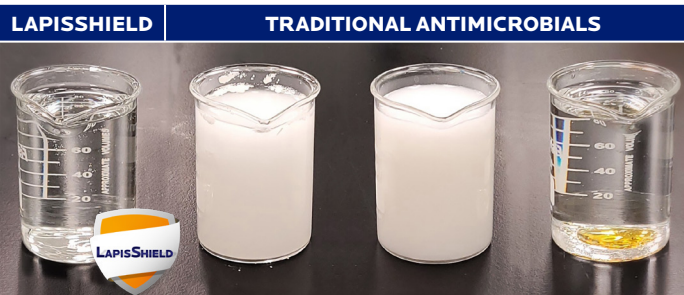
Microban has a portfolio of over 25 approved organic and inorganic antimicrobial technologies that can be engineered into products and surfaces. These technologies work to deliver 24/7 product protection against microbial growth, without impacting product performance or aesthetics.

How can we help?

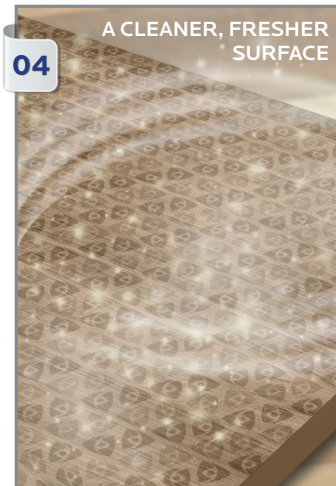
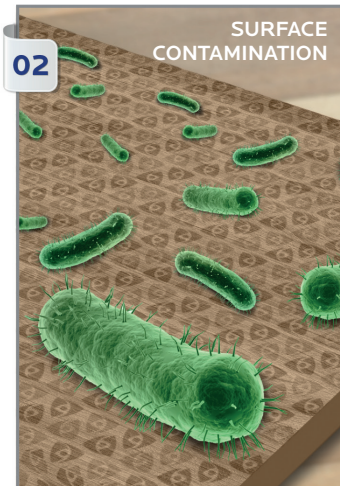
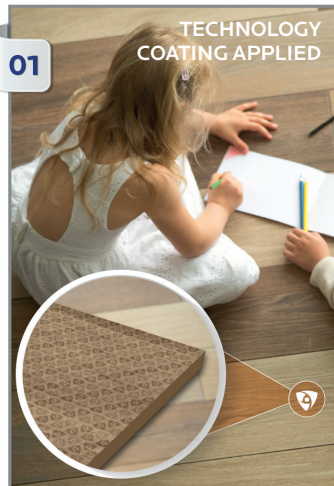
Once you've made the decision to implement antimicrobial protection into your product line, Microban's product development team will provide custom engineering services and work with you to formulate each aspect of the project. From initial concept and additive integration to official product launch, your dedicated account team will be by your side to deliver a suite of turnkey support services.

LapisShield™: novel water-based coating technology

LapisShield is a new line of Microban antimicrobials designed specifically for water-based coating applications. This technology is free of heavy metals and designed to seamlessly integrate antimicrobial functionality into any water-based coating formulation. It eliminates the common struggles associated with aggregation and sedimentation during the mixing and dispersing process which reduces waste while maintaining efficiency and productivity. Coatings with LapisShield are UV stable and remain clear, showing minimal optical impact in comparison to traditional antimicrobial additives. LapisShield's broad-spectrum antimicrobial properties make products more appealing to cleanliness-conscious consumers and business buyers, particularly those likely to be used in moist, humid environments. LapisShield is a step forward in providing robust, turnkey antimicrobial solutions to water-based coatings manufacturers.



MICROBAN LAPISSHIELD	TRADITIONAL ANTIMICROBIALS
Clear and UV stable	May cause yellowing or other negative visual defects
Easy to incorporate, mix, and disperse	Difficult to incorporate, mix and disperse
Stability after incorporation	May phase separate or settle due to gravity



How does LapisShield work?

LapisShield utilizes sodium-pyrrhione antimicrobials to help inhibit bacterial growth on the treated surfaces by up to 99.99% and prevent mold and mildew growth on the treated surfaces. Standard coating processes (i.e. spraying, roll-to-roll, dip, etc.) can be used to apply the technology. LapisShield remains constantly active on surfaces, disrupting internal enzymes, blocking metabolic pathways and creating an inhospitable environment where bacteria, mold and mildew cannot proliferate.

Technical data – at a glance

Antimicrobial efficacy	Antibacterial, antifungal
Active	Sodium pyrrhione
Appearance	Amber liquid
Test methods	ISO 22196 (AB) TM30(III) (AF) ASTM G21 (AF)

Examples of LapisShield coating applications - water-based coatings and paints for application on:



Polymers



Wood



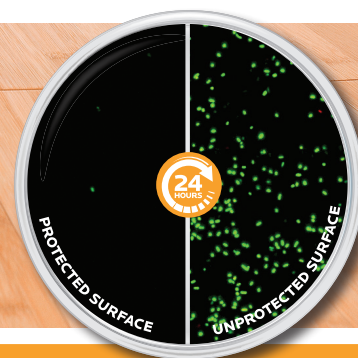
Metal



Glass ...and more

24-hour time lapse: untreated surface vs. LapisShield treated surface

Using confocal imaging, Microban has captured the differences in bacterial growth on an unprotected surface versus a LapisShield protected surface. On an untreated surface, the bacteria thrive and reproduce rapidly. On a LapisShield treated surface, the bacteria struggle to survive and their numbers are reduced considerably.



The benefits



Easy to use - Optimized processing and manufacturing requirements allow for easy incorporation to water-based coating systems



Broad-spectrum antimicrobial - Effective against not just bacteria but also the growth of fungi including mold and mildew



UV stable - Ideal solution for use in outdoor water-based coating applications



24/7 protection - Effective against microbial growth on the surface of treated products 24/7 and for the expected life of coating products



Heavy-metal-free solution - The technology does not contain heavy-metal-based chemistries and is an effective alternative to metal-based antimicrobial additives



Improved quality - Improved stability with minimal impact on optical properties of water-based coatings, making it ideal for transparent and thin coatings



Multiple applications - Can be integrated into a wide range of water-based coating applications



Global registration - The technology is registered with U.S. Environmental Protection Agency (EPA) and EU Biocidal Products Regulation (BPR)

Get in touch - For more information on our turnkey solutions for coatings, contact a member of the Microban team today.