



ACTIVE MICRO
TECHNOLOGIES

Natural
ANTIMICROBIALS

Sustainable Active Solutions
For Global Personal Care



Active Micro Technologies

NATURAL ANTIMICROBIALS

ABOUT

THE PERSONAL CARE INDUSTRY HAS SEEN AN INCREASED DEMAND FOR ENVIRONMENTALLY CONSCIOUS AND ETHICALLY SOUND COSMETIC PRODUCTS.

Manufacturers add preservatives to formulations to control microbial growth, extending the shelf life of these products. A number of synthetic preservatives have fallen from favour with regulators and consumers, due to issues like sensitisation, and other health related concerns. The result has been a growing demand for proactive, innovative and alternative solutions to synthetic preservatives.

Active Micro Technologies (AMT) has focused its efforts on the power of natural compounds, combining cosmetic functionality with antimicrobial activity, to develop a range of multifunctional ingredients that can reduce or eliminate the use of conventional preservatives. AMT strives to continuously improve and add to its sustainable, nature-based product line while also welcoming the opportunity to custom develop alternative antimicrobial solutions.



PhytoCide Lichen

ANTIMICROBIAL
&
ANTIOXIDANT

USNIC ACID TECHNOLOGY

Lichens are able to create more than one thousand of secondary metabolites, usnic acid being one of the most abundant. Uniquely found in lichens, usnic acid is especially abundant in genera such as *Cladonia Rangiferina*, also called and known as "reindeer lichen", a fruticose that is growing in the boreal forests. The lichen metabolite usnic acid exhibits various types of biological activity, most notably antimicrobial activity against plant and human pathogens.

- Multifunctional active
- Proved antioxidant activity
- Formulation friendly
- COSMOS compliant
- Vegan compliant

INCI: 2,3-Butanediol & Cladonia Rangiferina Extract

Code: M16008

Use Level: 1 - 2%

Standardised Content: 0.15 - 0.30% Usnic Acid

Water soluble

pH stable 3 - 8

Temperature: < 25°C

Charge: Non-ionic



TECH

Portfolio

MULTIFUNCTIONAL / ANTIMICROBIAL

LEUCIDAL® LIQUID

Code: M15008**Use Level:** 2 - 4%**Patent:** US 10,159,708**Benefits:** Antimicrobial /
Moisturizing / Anti-Acne**INCI: Aqua & Leuconostoc/Radish Root Ferment Filtrate**

Derived from *Leuconostoc kimchii*, a bacterium inoculated from Kimchi. Cultured in a defined growth medium containing radish root with cell lysis catalysed by a willow bark extract. This specific manufacturing process yields unique peptides with broad spectrum antimicrobial and conditioning properties.

Standardised Content: 18 - 22% Natural Salicylates & 0.1 - 0.5% Bacteriocins



LEUCIDAL® SF MAX

Code: M15019MAX**Use Level:** 2 - 4%**Patent:** US 10,232,197**Benefits:** Antimicrobial /
Moisturizing / Postbiotic**INCI: Lactobacillus Ferment**

Derived from *Lactobacillus acidophilus*, a probiotic bacterium. Cultured in a defined growth medium with cell lysis catalysed by an enzyme. This specific manufacturing process yields unique peptides with broad spectrum, antimicrobial and conditioning properties. This ferment is salicylate free.

Standardised Content: 5 - 10% Bacteriocins



LEUCIDAL® SF MAX POWDER

Code: M15031**Use Level:** 0,5 - 1%**Benefits:** Antimicrobial /
Moisturizing / Postbiotic**INCI: Lactobacillus Ferment**

This powdered version of Leucidal® SF Max is a more effective, more concentration version. With five times the potency of the original, it allows for formulators to save time while simultaneously delivering efficacy with an increased degree of confidence.

Standardised Content: 20 - 25% Bacteriocins



AMTICIDE® COCONUT

Code: M14003**Use Level:** 2 - 4%**Benefits:** Anti-fungal /
Moisturizing / Postbiotic**INCI: Lactobacillus & Cocos Nucifera (Coconut) Fruit Extract**

Intended to be coupled with one of our broad-spectrum antimicrobials, such as Leucidal® SF Max, or any preservative package that is lacking in protection against yeasts and moulds. Created by fermenting *Cocos nucifera* (coconut) fruit with *Lactobacillus* to deliver a non-irritating, anti-fungal and effective multifunctional product.

Standardised Content: 0.5% minimum Lipopeptides



PROBIOCIN V™

Code: M14005

Use Level: 2 - 4%

Benefits: Antimicrobial /
Moisturizing / Scalp Care

INCI: Lactobacillus Ferment Lysate

With novel focus on the expression of postbiotics, ProBiocin V™ captures an optimized production method to isolate bacteriocin peptides from the probiotic bacterium *Lactobacillus acidophilus*. This active system provides gentle benefits to the skin and scalp, helping to reduce redness and flaking, and offers a global approach to alternative preservative technologies for use in personal care.

Standardised Content: 5 - 10% Bacteriocins



LEUCIDAL® LIQUID COMPLETE

Code: M15024

Use Level: 2 - 4%

Benefits: Antimicrobial /
Moisturizing / Anti-Acne

INCI: Aqua & Leuconostoc/Radish Root Ferment Filtrate & Lactobacillus & Cocos Nucifera (Coconut) Fruit Extract

A 75/25 blend of Leucidal® Liquid with AMTicide® Coconut to offer a broad-spectrum antimicrobial in one product. This complex offers moisturising and conditioning benefits in skin and hair care applications as well as protection to any formulation.

Standardised Content: 14 - 17% Natural Salicylates & 0.1 - 0.5% Bacteriocins



LEUCIDAL® SF COMPLETE

Code: M15025

Use Level: 2 - 4%

Benefits: Antimicrobial /
Moisturizing / Postbiotic

INCI: Lactobacillus Ferment & Lactobacillus & Cocos Nucifera (Coconut) Fruit Extract

A 75/25 blend of Leucidal® Liquid SF with AMTicide® Coconut to offer a broad-spectrum antimicrobial in one product. This complex offers moisturising and conditioning benefits in skin and hair care applications as well as protection to any formulation.

Standardised Content: 1 - 10% Bacteriocins



LEUCIDAL® LIQUID PT

Code: M15021

Use Level: 2%

Benefits: Antimicrobial /
Moisturizing

INCI: Lactobacillus Ferment

A fermentation product of *Lactobacillus acidophilus* in the presence of sustainable castor oil. The biotransformation of castor oil generates water soluble undecylenates, enhancing anti-fungal activity.

Designed for use in pressed powder applications



ARBORCIDE® OC

Code: M15010

Use Level: 2 - 4%

Benefits: Antimicrobial /
Moisturizing

USDA NOP Organic

INCI: Leuconostoc Ferment Filtrate

Derived from *Leuconostoc kimchii*, a bacterium inoculated from Kimchi. Cultured in a defined growth medium with cell lysis catalysed by a willow bark extract. This specific manufacturing process yields unique peptides with broad spectrum antimicrobial and conditioning properties.

Standardised Content: 18 - 22% Natural Salicylates



PHYTOCID E ELDERBERRY OS

Code: M16003

Use Level: 1 - 5%

Benefits: Antimicrobial /
Antioxidant / Conditioning

INCI: Sambucus Nigra Fruit Extract

Elderberries are known to be rich in undecylenic acid and flavonoids. These phytochemicals can provide effective antimicrobial and antioxidant benefits. This natural oil-soluble extract can be used to enhance both antimicrobial and conditioning properties in oil based formulations, such as lip sticks, which may be at risk of microbial contamination during their life in use.



PHYTOCID E BLACK CURRANT POWDER

Code: M16001

Use Level: 1 - 3%

Benefits: Antimicrobial /
Conditioning

INCI: Ribes Nigrum (Black Currant) Fruit Extract

Black currants are known to be rich in ellagitannins and anthocyanins. These phytochemicals can provide effective antimicrobial, antioxidant and anti-inflammatory benefits. This natural, multifunctional, spray dried powder can be used to enhance both antimicrobial and conditioning properties within a formulation.

Standardised Content: 1.5 - 4% Citric Acid



PHYTOCID E ASPEN BARK EXTRACT POWDER

Code: M15008

Use Level: 0.2 - 3%

Benefits: Antimicrobial /
Moisturizing / Anti-Acne

INCI: Populus Tremuloides Bark Extract

Aspen Bark is known to be rich in natural salicylates. These can provide effective antimicrobial activity as well as improving cellular renewal for a smooth and even skin texture. This natural, multifunctional, spray dried powder can be used to enhance both antimicrobial and conditioning properties within a formulation.

Standardised Content: 54 - 60% Natural Salicylates



SYNERCIDE ASIAN FUSION

Code: M17001

Use Level: 1 - 2%

Benefits: Antimicrobial/
Moisturizing

INCI: Hexylene Glycol & Caprylyl Glycol & Wasabia Japonica Root Extract & Zingiber Officinale (Ginger) Root Extract & Allium Sativum (Garlic) Bulb Extract & Aqua

A synergistic blend of wasabi, ginger and garlic. These traditional Asian botanicals can provide potent anti-ageing, conditioning and antimicrobial benefits.



AMTICIDE® VAF

Code: M14004

Use Level: 1% Maximum

Benefits: Anti-fungal /
Moisturizing / Volatile

INCI: Bacillus Ferment & Saccharomyces Ferment Filtrate

A natural, volatile anti-fungal solution to prevent microbial growth associated with packaging. Developed by co-fermenting bacteria and yeast in a defined growth media to deliver a non-irritating multifunctional product capable of inhibiting the growth of fungus in packaging head-space.



How to Formulate with Natural Antimicrobials

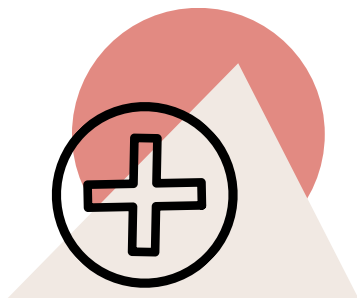
Optimize alternative preservative systems



Use Level

Start testing at the maximum use level if no other antimicrobial material is used.

It may be optimal to blend actives to combine different mechanisms of action.

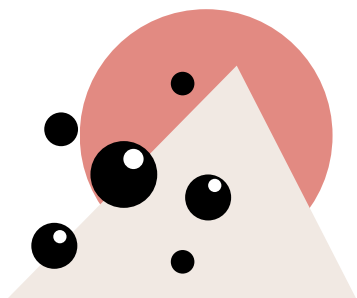


Charge

Some antimicrobial actives are cationic. They can interact with highly anionic ingredients such as xanthan gum and hyaluronic acid.

pH

A neutral pH provides an ideal environment for microbial growth. By lowering the formulation pH the acidic environment can help to restrict contamination.



Stability

Verify that the finished formula passes stability. An unstable product cannot be effectively preserved.

Preservation is not sterilisation



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A speciality ingredients company able to conceptualise, manufacture and locally supply raw materials. With commitment to assessing, sourcing and creating innovative products, we harness the latest technology to deliver value added benefits. Our key technologies include Bio-fermentation, Complex Actives, Extracts, Proteins, Delivery Systems, and Functional actives.

www.activeconceptsllc.com



An online supplier of specialty ingredients for personal care. Offering extracts and actives to meet the needs of both formulators and manufacturers. Unlike most suppliers, who have MOQs, we offer the flexibility to purchase the exact amount of product needed. The perfect supply partner for indie brands, start-ups and cosmetic formulating enthusiasts!

www.formulatorsampleshop.com



Arbor Organic Technologies

USDA-NOP certified organic cosmetic ingredient company, providing the first true cosmetic-grade, Phytogenetix™ verified organic ingredients for the cosmetic industry. Successfully merging the desire for organics with the utility of actives to surpass the demands and constraints faced by today's formulators.

www.arbor-organics.com