

# MicroSilver BG™

The pure & natural antimicrobial



*Pure elemental silver powder consisting of highly porous micro-sized silver particles*

# MicroSilver BG™ – 1 Page Summary



## WHAT IS IT

*MicroSilver BG™ is a pure silver powder consisting of highly porous and micro-sized (NOT nano!) particles of medical grade silver.*

*INCI: Silver. Produced in Germany under ISO 13485, ISO 9001. Patented.*



## WHY DO YOU NEED IT

*Problem: The vast majority (≈ 90%) of skin problems and odor are due to bacteria.*

*MicroSilver provides lasting broad-spectrum antimicrobial action on top of the skin, helps to maintain a healthy skin flora, and boosts the skin's natural defenses.*

*The particles physically cling very well to skin & hair follicles and provide a depot of pure silver that continuously generates silver ions resulting in long-lasting action.*

*MicroSilver also provides skin-friendly and natural product preservation.*

## MARKET EXPERIENCE

**Skincare:** *Well established in Europe (major brands); Only smaller brands in USA/Canada*

- ▶ *200+ customers: skincare, personal care, oral care*
- ▶ *40+ customers with natural skincare products*
- ▶ *25+ customers in animal care (9 in horse care)*
- ▶ *Products sold in 35+ countries.*

**Medical:** *Wound care: sprays, ointments, gels, creams, bandages.*

*Devices: bone cement, root canal filling material, medical polymers.*

# MicroSilver BG™ – multi-functional Ingredient

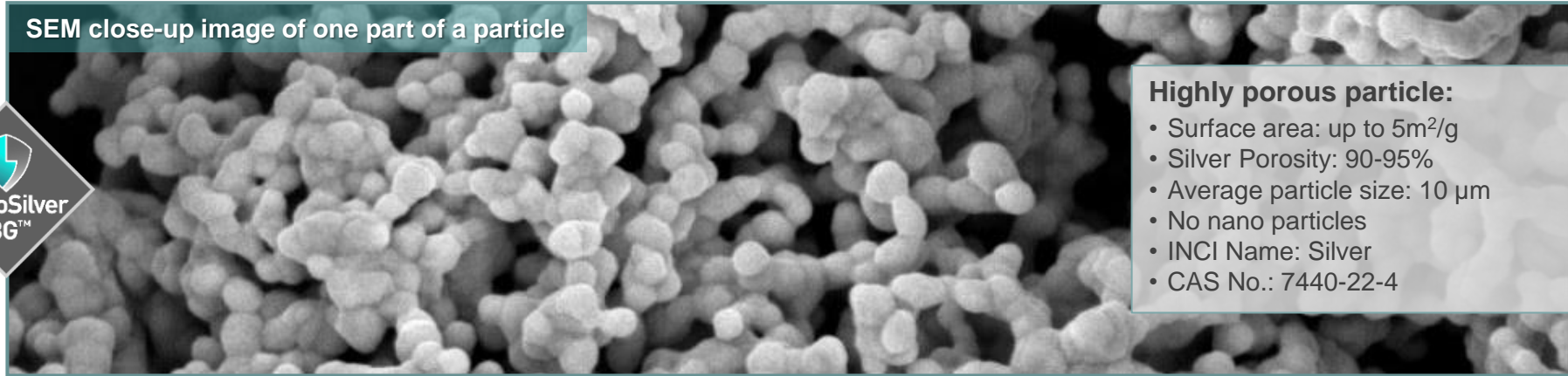
**For Beauty, Personal Care, Oral Care, and Dermatological skincare:**

- **Natural, Microbiome supportive skincare**
- **Antiviral, Antimicrobial, Anti-inflammatory**
- **Depot-effect that allows for long-term release of silver ions**
- **Clings to the skin, hair, textiles and creates a long-term effect**
- **Synergistic properties with other ingredients**

**Approvals / Certifications:**

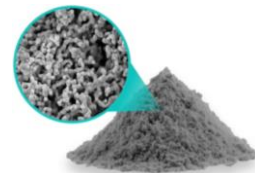
- Biocidal Product Directive (EU)
- REACH pre-registered
- FDA Masterfile
- EPA (USA)
- NPA
- ECOCERT / COSMOS
- Natural Cosmetics Standard
- Vegan
- Patented

SEM close-up image of one part of a particle



**Highly porous particle:**

- Surface area: up to 5m<sup>2</sup>/g
- Silver Porosity: 90-95%
- Average particle size: 10 µm
- No nano particles
- INCI Name: Silver
- CAS No.: 7440-22-4



# Euro Cosmetics Magazine – History/Background



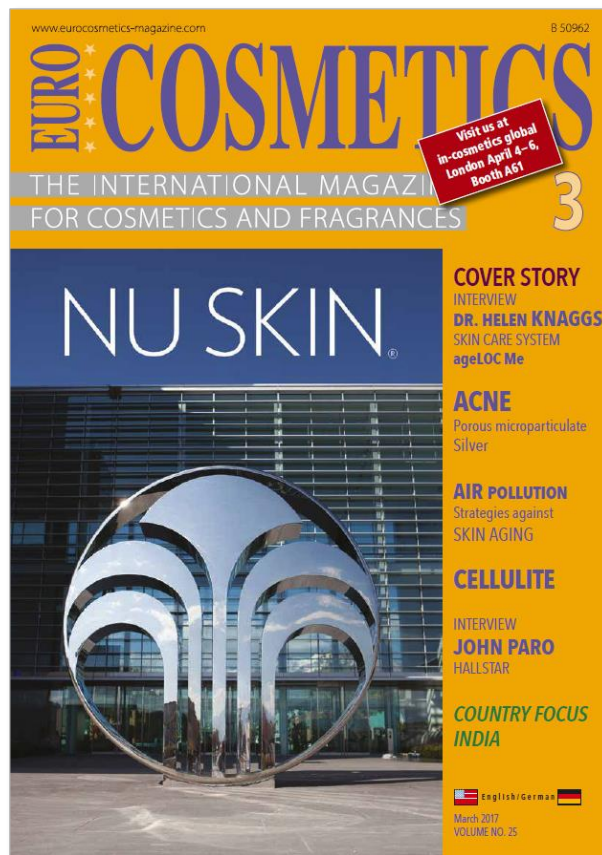
EURO COSMETICS is an independent global trade journal for the cosmetics and fragrance industry.

- Founded in 1990 it focuses on:
  - Development of new active ingredients
  - Production and scientific testing
  - Process-technical aspects of manufacturing cosmetic products
- Covers the global cosmetics market, highlighting trends and innovations.
- Informs about marketing and business in the cosmetics industry.
- Provides access to decision-makers across the worldwide cosmetics sector.



# MicroSilver BG™ – Acne Article in Euro Cosmetics

**Skin flora discussion: MicroSilver is effective yet gentle with less influence on resident skin flora**



## Discussion on:

- ❑ MicroSilver is a unique, highly biocompatible and sustainable ingredient for improving acne-affected skin
- ❑ MicroSilver is gentle on the skin with less influence on the resident skin flora in comparison to other antimicrobials

## TECHNOLOGY R&D Skin Care

### Porous Microparticulate Silver: "Non-Penetrating, Agglomerated Topical, Antibacterial & Anti-Inflammatory Active for Acne Skin Care"

By Dr. Peter Steinrück\*

#### Summary

According to the American Academy of Dermatology, 50 million US citizens suffer from acne. This makes this long-term skin disease the 8th most common disease worldwide. About 85% of all people experience acne at least once in their life. While 40% of the individuals do nothing, 30% use OTC products, 20% visit a skin care center and 10% seek a physician. The annual costs for treating acne in the USA have been estimated to be 3 billion US\$. A common approach to deal with this situation is to clean the skin's affected areas with antibacterial agents and fighting local inflammation.

This article introduces a porous and non-skin-penetrating conditioner ingredient which is a unique cosmetic ingredient for dealing with acne because it combines antimicrobial efficacy with properties that also help to reduce inflammation of the skin. This article provides an overview of porous microparticulate metallic silver and what makes it a unique, highly biocompatible and sustainable ingredient for improving acne-affected skin.

#### Resident and transient skin flora

There is a natural human skin flora. It is comprised of microbial origin and is a normal part of the human body. The skin's microflora can be considered the result of an ongoing evolutionary adaptation between the human host and the entity of what today is called the human microbiome – a collection of all microbial life forms on the human body. Often germs of the resident flora resist to antiseptic treatments because the flora is kept rejuvenated by bacteria originating from deeper skin layers. This also explains why the antiseptic hand disinfection of surgeons only works temporarily, and the germ counts get back to normal within a few hours after hand disinfection. In the case of acne, an increased population of Propionibacteria in the resident skin flora is a major target for acne treatment.

#### Acne and Propionibacterium

Acne develops when the human hair follicles become blocked by skin exudates and skin degradation products. This leads to the formation of visible comedones (pimples and pustules) which block the hair follicle and can lead to further complications such as the formation of local inflammation. Acne is a multi-causal skin disease, the details of which is not yet fully understood.

There are several known factors which govern the development and severity of acne. These include: the patient's genetic background, the age and sex of the individual, the individual stressors and dietary impacts. Beyond these, however there also is the presence of Propionibacterium acne strains which play a crucial role. P. acne can elicit an inflammatory response and it also aggravates the formation of comedones by microbial degradation of fats from the human sebaceous glands. P. acne lives without oxygen, that is under anaerobic conditions. Its main location is the human hair follicle. Here the bacterium resides in the funnel-like entrance (infundibulum, see Fig. 1) of the human hair follicle.

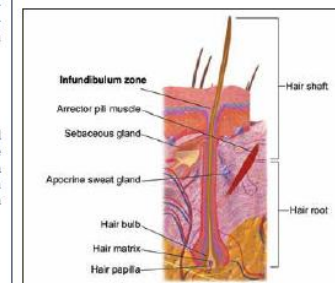
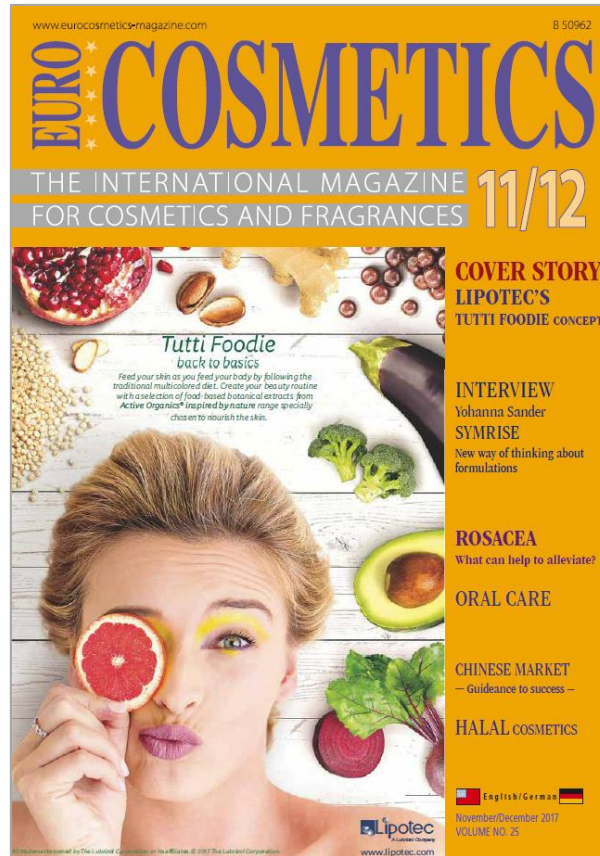


Figure 1: Infundibulum.

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# MicroSilver BG™ – Rosacea Article in Euro Cosmetics

**Designing a modern skincare product to address Rosacea by combining MicroSilver with extracts from ancient herbs**



## Discussion:

- ❑ Update on Rosacea, its causes and how to define a modern skincare product for improving this condition
- ❑ Improvements in skin condition by combining MicroSilver with extracts from ancient herbs.

## Rosacea: The curse of the celts

A porous silver lining for an efficient rosacea skincare

By Dr. Peter Steinrück \*

### Summary

There is an unsightly red face condition, which is also known as the "Curse of the Celts", because light skinned North Europeans are more affected. Today it is better known as "rosacea" and still is not fully understood in its details. Dermatology was established in the early 19th century. Not surprisingly rosacea together with acne were among the first skin disorders described in its medical texts.<sup>1</sup> There is a consensus that rosacea is a chronic skin condition that cannot be cured. However, and this is the salutation message, with porous silver as an ingredient in modern skincare products it can be far better controlled. The quality of life of rosacea victims can be improved by combining MicroSilver BG together with extracts from ancient herbs, like silver, have a history dating back over thousands of years. It is the goal of this article to give an update about rosacea, its causes and how to define a modern skincare for improving this unsightly skin condition.

### The Curse of the Celts

For ancient Egyptians, Greeks and Romans using a red-colored blush cosmetic was a makeup necessity. In contrast people in northern countries with a far fairer skin type were suffering from face redness. Also today their typical reaction is a face flush after a sudden change of temperature (from a heated home into a cold winter day) or a flush in response to spicy food or to large hot meals. Especially drinking alcoholic beverages or exposure to stronger sunlight or to chilly wind comes with a price. Once the symptoms become chronic, tiny blood vessels appear and bumps and pimples cause an unsightly redness of the face. Since especially people of Irish descent are suffering, these face redness problems became known as the "Curse of the Celts"<sup>2</sup>. However also people of British and German or Scandinavian descent are often affected. Sometimes a red nose becomes enlarged by tissue overgrowth and develops into what is called a rhinophyma. Prominent victims of rosacea are the comedian W.C. Fields (Fig. 1), the actress Renee Zellweger and the former US president Bill Clinton.



Fig. 1: W.C. Fields

### Rosacea – A Source of Enormous Psychological Strain

Few people have been more associated with strong drink than W.C. Fields. Also a commonly held view of the Celtic culture is its ongoing flirt with drinking festivities. Rosacea, on the other hand, is known to become worse with alcohol. So no wonder that even family members or friends believe that people with unsightly rosacea are abusing alcohol. This misconception has led to a considerable additional strain and stigmatization for rosacea sufferers.

And it creates a lower self-confidence: Approximately 41% of the US sufferers of rosacea stated that they are avoiding the public. Thus this undeserved self-isolation may well turn out to be the worse burden for those haunted by it.

### Rosacea – What We Know

#### Rosacea Subtypes

There are 4 subtypes of rosacea<sup>3</sup>. (1) In one aspect the face shows a tendency towards permanent face redness and small blood vessels appear on the facial skin. This rosacea type is also known as couperose. (2) Another subtype, the papulopustular rosacea, often is confused with acne. It is characterized by bumps and pimples but in contrast to acne doesn't show comedones. (3) In the case of the rare phymatose rosacea swellings like that of a bulbous red nose (rhinophyma) are observed. Similar tissue enlargements, can also affect the cheeks, the chin, the forehead or the ears. (4) The rare ocular rosacea is observed as a conjunctivitis of the eye lid. All subtypes are characterized by erythema and show concomitant inflammatory skin conditions.

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# MicroSilver BG™ – Cover feature

*Euro Cosmetics April 2024*



## Front cover shout out

- Top story
- Feature and article
- Published Studies

# MicroSilver BG™ – Feature Article in Euro Cosmetics

April 2024



Bio-Gate has introduced MicroSilver BG™ as a natural, powerful skin conditioner with antimicrobial properties to protect the human skin against unwanted ("dysbiosis") skin conditions where the healthy microbiome is known to get into a disarray. Here we prove

***"The compelling observation is that MicroSilver BG™ is a "microbiome-friendly" skin conditioner with antimicrobial properties that helps stressed skin to rebalance and stabilize itself"***

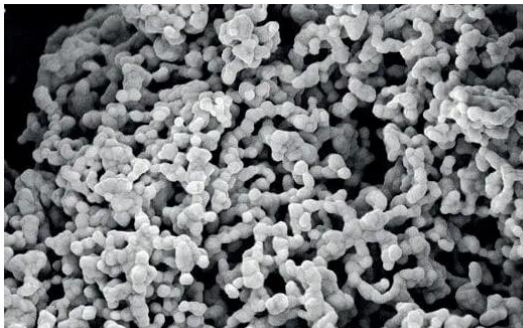


Fig. 1 MicroSilver BG™ – highly porous particle structure.



# Microbiome Research by Bio-Gate

## 3 key studies



Bio-Gate has performed various microbiome studies dating back to 2008. The final concluding findings are listed below.

- Confirmed that skincare with **MicroSilver BG™** products do not change the composition of the natural healthy microbiome.
- Unfavorable transient germs are reduced in the relative abundance.
- Data analysis confirmed that upon skincare with MicroSilver BG™ the **natural resident skin flora looks more homogenous and in good balance.**
- MicroSilver BG™ leaves **the natural resident skin flora** intact, resides on top of the skin and attacks transient germs on the skin surface. The natural skin flora, which also maintains the natural acid mantle, is also left intact and **is supported by MicroSilver BG™.**

**MicroSilver BG™** is an excellent **microbiome-friendly skin conditioner** that helps stressed skin to rebalance and stabilize and it promotes a healthy skin barrier.

# MicroSilver and Beauty...

## ...what customers are saying

### **Uses and customer statements include:**

- ✓ Natural, Vegan
- ✓ Microbiome supportive skincare
- ✓ Promotes healthier skin
- ✓ Calming / soothing
- ✓ Clarifying / Purifying
- ✓ Restorative / Regeneration
- ✓ Beauty Care, Personal & Oral Care
- ✓ Dermatological skincare
  - Blemish skin / acne, rosacea, dermatitis, etc.
  - Antibacterial, anti-inflammatory, antipruritic
- ✓ Synergistic effects with other actives

### **What motivates consumers:**

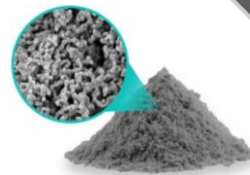
#### **1) MicroSilver products are effective and proven**

- Market acceptance / strong customer re-orders
- Unique ingredient that has been on the market and "Stood the test of time"
- Numerous studies. (>40)

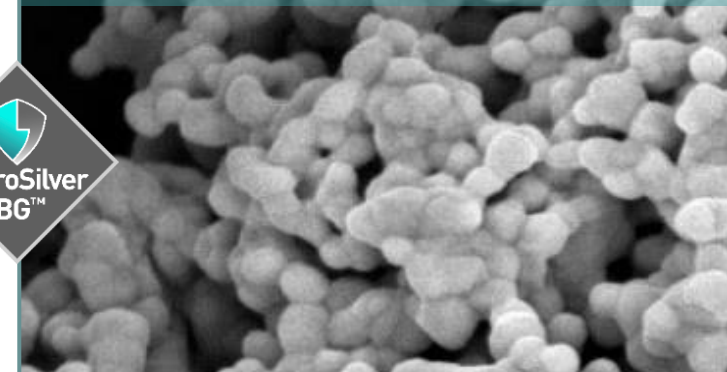
#### **2) MicroSilver products fulfill market trends**

- Clean Beauty, Natural, Vegan, Skin-friendly, Eco-Friendly, Ideal for all skin types, hygiene

### **Pure Silver**



SEM close-up image of one part of a particle



# The Silver lining for your cosmetic needs

**Bring our rare and unique MicroSilver ingredient into your world of luxury skincare**



**Increase revenue**  
- *Strong customer re-orders*



**Reinvent yourself with Silver**  
- *Unique ingredient / Niche market*



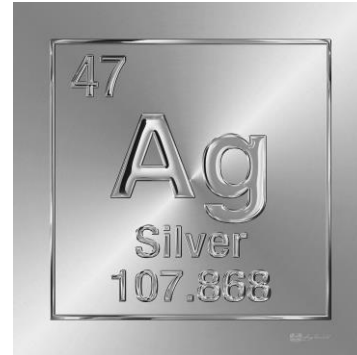
**Set yourself apart from the competition**



**Stay cutting edge**



**Exceed your expectations**





*Thank you for your time!*

[www.Bio-Gate.de](http://www.Bio-Gate.de) | [www.QualityLabs-bt.de](http://www.QualityLabs-bt.de)



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