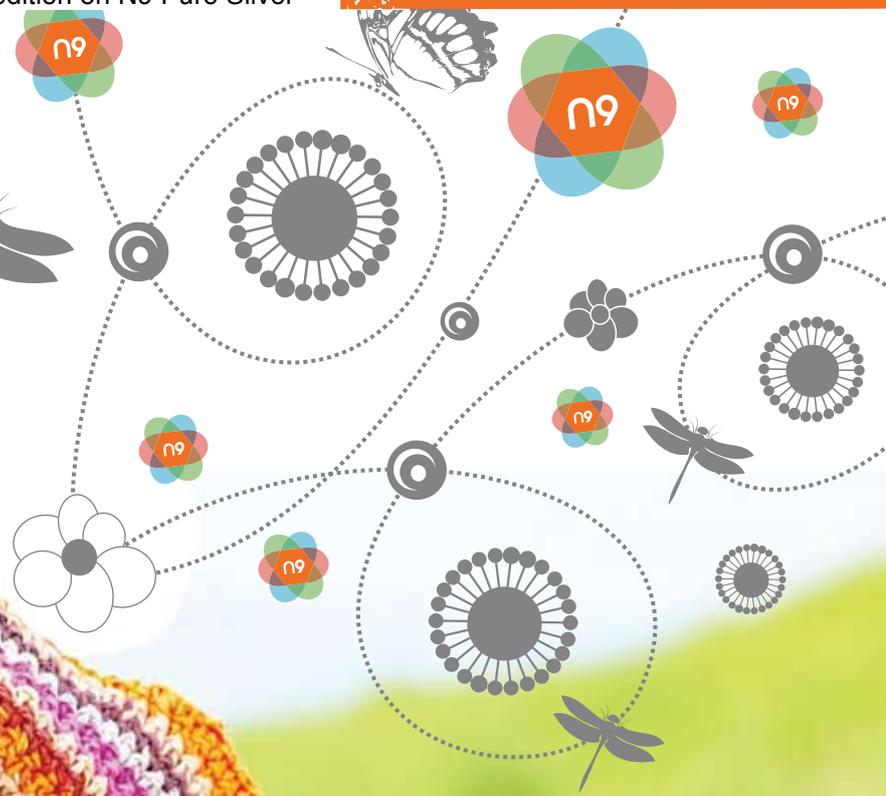


RESILUTIONS

A special edition on N9 Pure Silver™



Freedom through
freshness



Pure silver. Pure protection.

Freshness. Hygiene. Comfort. Wellbeing. All-day, long-lasting freshness now has a new name: N9 Pure Silver™

N9 Pure Silver™ is an effective antimicrobial that curbs the growth of microbes and counters the ill-effects of microbial

development. In short, it's your ticket to freedom from constant cleaning, maintenance and preservation – giving you a better, safer and more carefree life, today and tomorrow.

Scope of antimicrobials

The consciousness on personal hygiene has grown and the need for cleanliness and freshness

microbial activity that affect health and hygiene by causing diseases and odours.

- **The consumer market.** The healthcare and hospitality industry is fast-growing. As is the consumer awareness and spending power in developing countries like India – leading to market expansion.
- **Global usage.** Consumers today are highly aware and desire non-leaching safe antimicrobials that offer high performance and safety.

Microbial menace

While there are good microbes, most microbial activity is known to cause adverse effects – from simple infections to serious illnesses and reduction of immunity. Warm temperature, nutrients and a high-moisture environment promote microbial genesis. Microbes also lead to odour and staining in fabrics, discolouration in objects, biofilm formation on items such as lens and cross-contamination.

has increased over the years. As a result, the demand for an antimicrobial, such as N9 Pure Silver™, has increased manifold in areas such as:

- **Textiles.** An emerging industry, textiles seek solutions that not just protect the fabric, but also the user from microbial infestation.
- **Personal hygiene and wellness.** Antimicrobials are proven antidotes that improve quality of life by countering

Antimicrobials such as N9 Pure Silver™ work as an effective antidote.

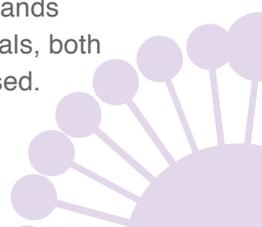
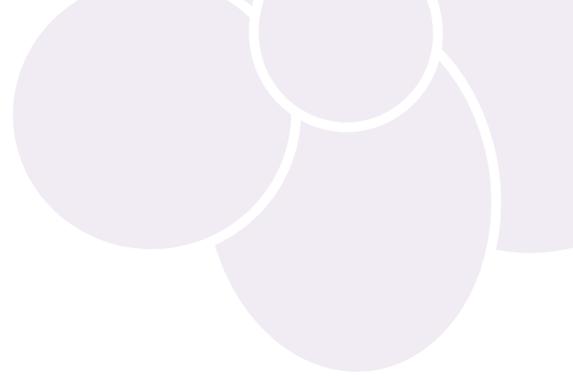


N9 Pure Silver™: a world class antimicrobial

N9 Pure Silver™ touches every aspect on the consumer claims and value pyramid: sanitisation, safety, cleanliness, freshness, long-lasting, hygiene and purity – emerging with the promise of wellness. N9 Pure Silver™:

- Acts as a **broad spectrum antimicrobial**, including bacteria, fungi and other allergens. Prevents cross-contamination of MRSA and E.Coli.
- **Arrests malodour** by curbing the growth of *brevibacterium*.
- **Promotes cleanliness and prevents stains** by fighting molds, dust mites and other microbes.
- **Outperforms other antimicrobials** when microbiologically tested by internationally recognised test protocols (JISL 1902 absorption method).
- Is **compatible** with most fabrics.
- Is **natural and durable**. Proven to last 30 washes.
- Is **safe**. Has no adverse effects on the fabric, user, or the environment.

N9 Pure Silver™ is cost-efficient, easy-to-use, and truly stands out amongst antimicrobials, both silver and non-silver based.



How N9 Pure Silver™ works

N9 Pure Silver™ works in 3 different ways:

- Immobilising the bacteria by depleting oxygen
- Rupturing the bacterial cell membrane
- Destroying the reproductive receptor



N9 Pure Silver™ leverages the age-old medicinal properties of noble and natural silver to:



Make round-the-clock freshness a possibility



Help you smell and feel good



Work hard while you live your life



Suit your hectic life



Allow you to stay fresh naturally

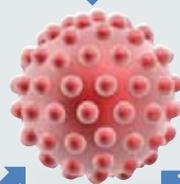


Bacteria moves to fabric surface

N9 Pure Silver™ particles are on fabric surface and are ready to act



Ruptures the bacteria cell membrane

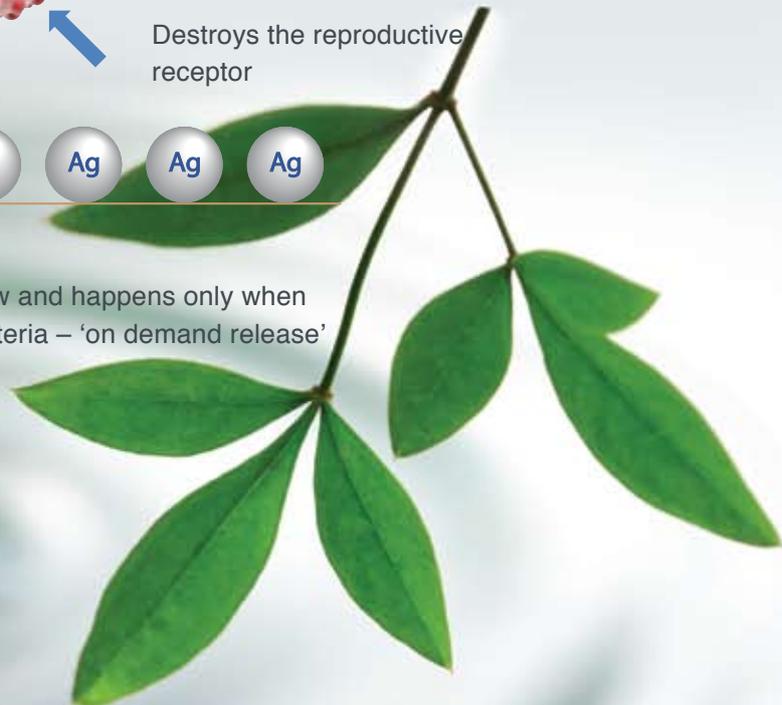


Immobilises the bacteria by depleting oxygen

Destroys the reproductive receptor



Silver ion generation is very low and happens only when the silver is in contact with bacteria – ‘on demand release’



Sustainability and the environment

N9 Pure Silver™ is sustainable and protects the environment during the design, manufacture, application and usage stages.

N9 Pure Silver™:

- Is natural and sustainable. N9 Pure Silver™ is pure metallic silver in ultra-pure de-ionised water (not solvent based).
- Has a low MIC (Minimum Inhibition Concentration); the level at which a material becomes effective against microbes.
- Is non-leaching. N9 Pure Silver™ remains in the treated area and doesn't spread into the surrounding environment.
- Is gently bacteriostatic, defensive, protecting textiles against bacteria without affecting the natural skin balance.
- Is dermatologically tested; resistant to the development of complex bacterial strains, unlike certain non-silver materials (eg. Triclosan).

- Is non-interfering with other finishing or washing chemicals that adversely affect the performance.
- Is non-toxic as N9 Pure Silver™ releases an extremely low level of silver ions <50ppb.
- Is significantly below the level which could cause any potential aquatic toxicity.

- **Durability.** N9 Pure Silver™ survives multiple washes and dry clean cycles. It retains its performance even after 30 washes!
- **Bactericidal effect.** N9 Pure Silver™ has a bactericidal effect, which helps it protect textiles against bacteria rather than seeking out and killing them.

Loves textiles. Hates bacteria.

Textile-friendly N9 Pure Silver™

N9 Pure Silver™ is preferred over other antimicrobials owing to:

- **Respect for colour.** The colour of both white and coloured fabric remains intact even after being treated with N9 Pure Silver™.
- **Non-leaching.** Strongly binding, N9 Pure Silver™ remains intact on treated items and works where needed to protect textiles.



Applications of N9 Pure Silver™

N9 Pure Silver™ is easy to use since it requires no special equipment during application.

N9 Pure Silver™ is compatible with textile processes such as

garment washing, fabric padding, fabric spray, knit exhaust, moulding and coating.

N9 Pure Silver™ can also be used in combination with other

textile finishes to create novel concepts.

The range of N9 Pure Silver™ application includes:

Functional finishing

Antimicrobial hydrophilic finishes
Antimicrobial hydrophobic finishes
Antimicrobial wrinkle-free finish
Antimicrobial soft finish
Antimicrobial moisture management
Antimicrobial wicking finish
Antimicrobial fragrance finish
Wash fresh
Antibacterial finish
Ever fresh denim finish
Antifungal socks finish

Textiles

Apparel
Bedding
Canvas
Carpets and rugs
Coated fabrics

Fleece fabrics
Hosiery
Mattress ticking
Medical textiles
Mops
Non-wovens
Pillows with fibrefill
Shower curtains
Sportswear
Tenting
Underwear
Uniforms
Upholstery
Towels
Chinos trousers, jackets
Trousers
Knits, single jersey, pique
Shirts and T-shirts
Socks
Shape ware
Seat covers
Greenhouse tents
Handbags
Denim trousers

Compatible chemicals

Hydrophilic silicones
Fluorocarbons
DMDHEU resins
Cationic softeners
Hydrophilic polymers
Wicking agents
Encapsulated fragrance
Flame retardants
UV stabilisers
Sizing agents
Enzymes

Substrates

Cotton
Cotton, polyester
Cotton, acrylic, nylon
Polyester, nylon, cotton
Nylon, lycra
Lycra, wool
Polyester
Nylon, polyester
Jute
Cotton (indigo)
Coir, polypropylene

N9 Pure Silver™ compliance

N9 Pure Silver™ Micro, a natural and safe antimicrobial is now accepted and listed under Oeko-Tex 'Accepted Active Chemical Products'.

Toxicology test to prove safety:

Human Repeat Insult Patch Test (HRIPT)
Acute oral toxicity > 5000mg/Kgbw
Skin irritation: Non Irritant

Mucous membrane irritation tests
Skin sensitisation tests
28-day repeat toxicity test with toxicokinetics
Bacterial Mutation tests
Chromosomal aberration tests

 This leaflet is protected from microbes as it has been treated with a special N9 Pure Silver™ finish for Paper and Print. This leaflet can be shared in the safe knowledge that it will not pass on any microbes from one person to another.

RESIL®

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