NewPro – NewPro - New products & innovative ideas for surfaces
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NewPro Permanent
Antimicrobial Protective Coating

WHY NewPro Permanent Antimicrobial Protective Coating (Wet Wipes or as a Liquid)?

Conventional products are absorbed by living cells and kill by way of poisoning the organism or disrupting a vital life process. They are designed to move from the surface and dissipate quickly. Most commercial anti-microbial products used for treating surfaces do an adequate job of killing bacteria and fungi, although most have a limited range of effectiveness. **NewPro Permanent Antimicrobial Protective Coating** technology takes a totally unique approach. It provides an effective initial microbial kill when applied, but unlike the conventional methods, it also provides long-term control of growth on treated surfaces, often for the life of that surface.

The following are eliminated:

- Bacteria
- Yeasts
- Fungi
- Algae

Laboratory and Field Studies showed a reduction of the CFU's by up to 99.9%.

DESCRIPTION:

After application with Wet-Wipes, **NewPro Permanent Antimicrobial Protective Coating** preserves the value of the treated object and in addition the invisible coating of amorphous glass protects your most valuable assets: Your Health and your Well-Being.

The Most Important Properties at a Glance:

- Safe anti-bacterial functionality – presence can be verified using a marker
- Prevents microbial odours
- Permanent fungicidal action
- Deprives house dust mites of food
- Prevents mould growth on smooth and textured surfaces
- Prevents micro-scratches and reduces damage caused by abrasion by improving the friction coefficients
- Facilitates cleaning and removal of lime-scale, soot, grease dust and biofilm deposits
- Promotes comfort, well-being, and safety
- Free from halogens (especially fluorine, PBT/vPvB- and SVHC-substances)

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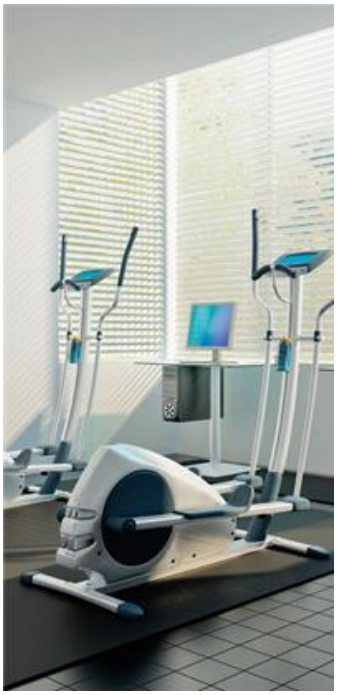
Function & Effects



- **NewPro Permanent Antimicrobial Protective Coating** reduces the surface energy. Special technologies ease the removal of dirt and biological residues, as well as soap deposits and inorganic contaminants.
- **NewPro Permanent Antimicrobial Protective Coating** provides amongst others, an **antibacterial protection** from micro-scratches by the formation of an ultrathin coat of glass. In the case of mechanical abrasion, the protective coating is first attacked before the substrate can be damaged. The unique GLIDE-function allows mechanical stresses to glide over the surface and leave fewer abrasive traces. Protected surfaces have a measurably higher degree of hardness of up to 3 grades of pencil hardness.
- First of all the surface is cleaned and polymerised. (Step 1).
- Subsequently a modified silicon dioxide enfolds a safe and permanent antimicrobial function (Step 2).
- To obtain a certification for use with food contact? please observe local resp. national laws.
- **NewPro Permanent Antimicrobial Protective Coating** is suitable for all water resistant surfaces (The product should not be used in the case of uncertain water resistance).
- For the highest demands of the supply chain, the product is also available with a test marker which shows the coloured visible presence of an antimicrobial agent.

Applications

A few examples of various application areas.

- Invisible hygiene and abrasion protection against micro- scratches on glass or plastic displays, LED, LCD or AMOLED. No impairment whatsoever of the Touch-Function or operability, and also not to housings or covers of mobile telephones (cell-phones).
- Easy-to-clean and Hygienic Finish for bath ceramics, toilet lids, sanitary surfaces, and bathroom items (such as: water taps, shower heads and shower hoses)
- Protection against infection from plastics, stainless steel or painted surfaces in public toilets, hotels, fitness studios, public transport or the gastronomy.
- Permanent surface disinfection in hospitals, old-age and care homes, in particular for surfaces in intensive care and quarantine areas or for surfaces with a high infection risk (e.g. door grips), inclusive shelving, and surfaces and floors (Observe national regulations!).
- Permanent hygiene for telephones, keyboards and other operating units which are regularly touched by hand.
- Stainless steel railings and lifts (inclusive operating switches).

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- Wearable parts and hygienic equipment for vending machines, water dispensers, slot machines, parking ticket machines, or other units which are used publicly.
- Easy-to-clean apparatus for decalcified shower units made of glass, PMMA or with curtains.
- Odour-free hygienic equipment for waste containers.
- Hygiene in ventilation systems.
- Permanent hygiene for floor coverings and other surfaces.
- Mould reduction on agricultural tarpaulins.

Compatible Surfaces

Our Product can be used on the following surfaces:

- Glass
- Ceramics
- Noble Metals (Aluminum, Stainless Steel, Brass, Gold etc.)
- Plastics e.g. PMMA, ABS, ECTFE, HDPE, LDPE, PA, PC, PMP, PP, PS, PVC, SAN or SI
- Paint finishes
- Printed boxes and cardboard packing material

Incompatible Surfaces

Our Product CANNOT be used on the following surfaces:

- Water-sensitive surfaces e.g. paper
- Surfaces which have food contact. In the case of uncertainty about the resistance the product should not be used.

CERTIFIED Microbiological Performance

Certified by accredited Laboratories:

- Staphylococcus aureus (MRSA = methicillin-resistant Staphylococcus)
- Escherichia coli (Intestinal Bacteria)
- Klebsiella pneumoniae (Odour-forming Bacteria)
- Listeria monocytogenes (Foodstuffs)
- Salmonella choleraesuis (Foodstuffs)
- Aspergillus niger (lightly sporicidal)

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VERIFIED Efficiency of the Substance

In scientific studies and publications the efficiency of the silicon-functionalised ammonium compounds have been verified as efficient against the following micro-organisms:

Viruses

• Adenovirus Type II & IV, • Bovine Adenovirus Type I & IV, • Feline pneumonitis, • Herpes Simplex Type I , • Herpes Simplex Type II, • HIV-1 (AIDS), • Influenza A2 (Aichi),
• Influenza A2 (Asian), • Influenza B, • Mumps, • Parainfluenza (Sendai), • Rous Sarcoma,
• Reovirus Type I, • Simian Virus, • Vaccinia , • MS2 9, • PRD1

Gram-positive Micro-organism

• Bacillus sp. (vegetative cell), • Corynebacterium diphtheriae, • Micrococcus lutea,
• Micrococcus sp., • Mycobacterium tuberculosis, • Mycobacterium smegmatis,
• Propionibacterium acnes, • Staphylococcus aureus, • Staphylococcus epidermidis,
• Streptococcus faecalis, • Streptococcus mutans, • Streptococcus pneumonia, • Streptococcus pyogenes

Gram-negative Micro-organism Fungi, Algae, Mould.

• Acinetobacter calcoaceticus, • Aeromonas hydrophilia, • Citrobacter deversus, • Citrobacter freundi, • Enterobacter aerogenes, • Enterobacter aglomerans, • Enterobacter cloacae,
• Enterococcus, • Escherichia coli, • Klebsiella oxytoca, • Klebsiella pneumoniae, • Klebsiella terriena, • Legionella pneumophila, • Morganella morganii, • Proteus mirabilis, • Proteus vulgaris,
• Pseudomonas aeruginosa, • Pseudomonas fluorscens, • Salmonella cholera suis,
• Salmonella typhi, • Salmonella typhimurium, • Serratia liquifaciens, • Alterania alternate,
• Aphanizomenon sp., • Aspergillus flavus, • Aspergillus niger, • Aspergillus sydowi,
• Aspergillus terreus, • Aspergillus versicolor, • Aspergillus verrucaria, • Aureobasidium pullans,
• Candida albicans, • Candida pseudotropocalis, • Chaetomium globsum,
• Cladosporium cladosporioides, • Chlorella vulgaris, • Dreschslera australiensis,
• Epidermophyton sp., • Gliomastix cerealis, • Gloeophyllum trabeum, • Microsporum sp.,
• Microsporum audouinii, • Monilia grisea, • Oscillatoria, • Penicillium chrysogenum,
• Pencillium commune, • Penicillium funiculosum, • Penicillium pinophilium, • Penicillium variable,
• Phoma fimeti, • Pithomyces chartarum, • Poria placenta, • Scenedesmus,
• Saccharonyces cerevisiae, • Scolecobasidium humicola, • Selenastrum sp., • Trichoderma viride,
• Trichophyton interdigitale, • Trichophyton maidson, • Trichophyton mentogrophytes,
• Trichophyton sp.

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Specifications

NewPro Permanent Antimicrobial Protective Coating, consisting of 2 Wet-Wipes, is a two-step-system to enable consumers to apply a permanent antimicrobial coating to surfaces.

Chemical Basis: modified silicon dioxide

Layer Thickness: about 150-300 µm

Water Repellence: lightly hydrophobic

Temperature Stability: 150 Degrees Centigrade

Chemical Resistance: Solvent Resistant

Weather Resistance: 2000 h according to ISO 11507 A (corresponds to about 3-4 years weathering)

Mechanical Durability:

- Glass, ceramics > 40.000 Cycles according to ISO 11998 (Cleaning with water)
- Nobel Metals > 20.000 Cycles according to ISO 11998 (Cleaning with water)
- Plastics > 5.000 Cycles according to ISO 11998 (Cleaning with water)

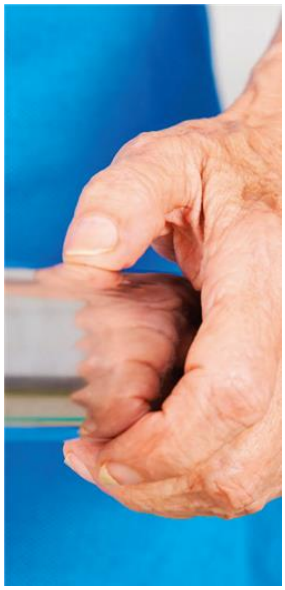
Salt Water Resistance: yes

Transparency: 100%

Storage Stability: 2 Years

Temperature Sensitivity: 3 to 40°C

Contents: 1 x Cleaning Wipe and 1 x Polymerisation Wipe + 1 x Activation Wipe for up to 3m²;



Application:
The User thoroughly degreases and cleans the surface to be treated using the Cleaning and Polymerisation Wipe (Cloth 1) (Step 1). Only in the case of heavy contamination (or lime scale deposits) is the use of a pre-cleaning product designed for the removal of the type of contamination in question recommended. A polymer film forms after the evaporation of the initial liquid (about 5 minutes). This is then activated by wiping with the Activation Cloth (Cloth 2) which initiates the antimicrobial properties. After a further 2 minutes the surface is then polished dry using the microfiber cloth until all visible streaks and smears are removed. A more thorough polishing is necessary in the case of transparent or gloss surfaces. The coating is hardened and resilient after 6 hours.

The antimicrobial protection comes into effect 1 hour after application. Up to 3 m² of the surface can be coated with Unit 1 and 2 of **NewPro Permanent Antimicrobial Protective Coating**

Durability of the Wet-Wipes: 12 Months

Durability of the applied coating: 3-4 Years

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Storage Life of the coating in canisters: 2 Years

Solvent Resistant / Temperature Resistant 150°C

Processing Temperature between 3 – 40°C

NewPro Permanent Antimicrobial Protective Coating is not classified as hazardous goods according to ADR and IATA.

For the safe handling of **NewPro Permanent Antimicrobial Protective Coating** please observe the appropriate Data Safety Sheets of the components and the applicable Information Leaflets.

Safety

Additional Legal Obligations and Safety Instructions for the Anti-Microbial Components:

Type of Coating: Ready-for-Use Sealant Coating in Wet-Wipes

Instructions for Use: See Application

Recommended Renewal Date:
When the colour of the Marker no longer adheres to the treated surface.

Possible Side Effects and First Aid Instructions:
According to regulations the preparation is not classed as dangerous. There are no known Side Effects.

Mass Production:
Restriction and Observation of exposure at the workplace (Safety Data Sheet)
Personal Protective Clothing: Not necessary during normal usage. In the case of mass production please observe Point 8.2.2. of the Safety Data Sheet.

Disposal Instructions:
P501: Disposal of contents and packing in accordance with local regulations. For disposal (see Safety Data Sheet).

Shelf Life: 12 Months and longer

Hardening Time: The Anti-microbial effectiveness of the product comes into effect 1 hour after application.

Waiting Time:
The Safety Interval after application and the next usage of the product treated, resp. the admission of humans or animals to the treated area is 6 hours.