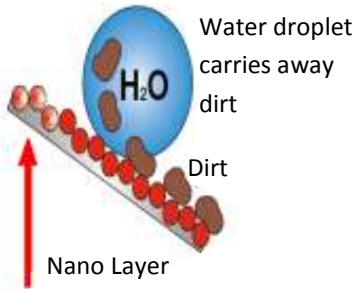
What is Nanotechnology

Nanotechnology is a manufacturing technology that creates 'Smart' liquids filtered to tiny tolerances, on the Nano scale. 1 Nanometer (1nm) = 0.000001 milimeter. At this scale, liquids gain new properties not seen in course materials.



This is why the discovery of Nanotechnology is so exicting!

Attributes

Water repellent
Grease and oil repellent
Anti finger prints
Improved visual appearance
UV stable
Food safe
Temperature resistant
Acid / Alkali repellent
Ecologically friendly
Reduced fuel consumption

Easy to clean
Bionic dirt repellent
Scratch resistant
Detergent proof
Weather resistant
MRSA safe
Stain repellent
Salt water resistant
Reduced engine wear

Smart liquids are custom designed to yield the properties that the customer chooses. A hospital may want a MRSA resistant wall coating; a car manufacturer may want a low friction coating for their engines. Nanoland Global can provide the product that meets your needs by selecting from a range of manufacturers that we have tested and validated.

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Email : info@nanolandglobal.com
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Nano Terminology

Cleaning functions

Note the three types of cleaning functions:
1. Hydrophobic (water repelling…drops form beads….using Sio2 etc (so easy cleaning, less detergents, labour….

2. Hydrophilic (water attracting : drops flatten out) Tio2… the functions are opposite! (the force of the water to the surface on impact removed dirt which then falls with gravity and rain)

3. Photocatalytic (UV-induced reactions that cause decomposition of dirt molecules….great for outside glass & concrete)

The amazing property of the Photocatalytic effect is that two dynamics work together: UV causes a catalyst reaction that destroys bacteria immediately and the force of the hydrophilic (pull of the water to the surface) causes the dead bacteria and crud to fall with gravity once it rains. It also keeps pollutants in the air around the treated property free of negatives. So great for both surface and air self-cleaning where traffic congestion is high in cities.

Anti-Bacteria

In regard to anti-bacteria function there are two key effects:
Bacteria Static means that bacteria cannot feed on the surface over 24 hours and therefore dies. All basic coatings offer this attribute.
Bacteria Active Coatings that are mated with silver ions have added killer ability, to break the wall of bacterial cells almost in seconds, therefore creating a much greater defence against disease and infection.

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Antibacterial Glass & Ceramic Protection

Nanoland Global's Antibacterial Glass & Ceramic Protection is an alcohol based system, which generates an antibacterial easy-to-clean effect on glass and ceramic surfaces.

On the surface, a thin hydro and oleophobic film is created, which prevents the sticking of dirt, lime scale and impurities and increases the rolling off effect of water.

It is specifically aimed at sealing surfaces in the hospitals and commercial kitchens creating an antibacterial resistant surface. For example: work surfaces, bathroom fittings, mirrors, glass plates, etc.

The protection can be applied by spraying (wet varnish method or airless-spraying system) or be rubbed on with a lint-free cloth.

The figure shows three different bacteria on nutrient media. It is clearly visible, that the amount of bacteria is heavily reduced within 12 hours.

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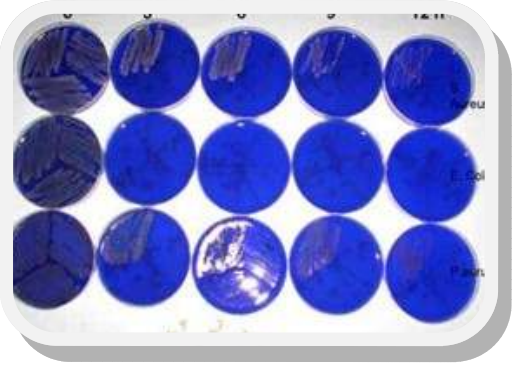
Antibacterial Plastic Protect

Nanoland Global's Antibacterial Plastic Protect is an alcohol based sealing material, which forms an ultra-thin layer on plastics. The surface thus gains water and dirt repellent attributes. An easy cleaning surface is created and in addition the coating has an antimicrobial effect (see figure).

- it is especially suitable for polymeric substrates.
- it is highly efficient (ca. 15-25 mL/m2, the exact usage depends on the kind of application).
- it can be applied either by spraying (thin film) or be reamed on by using a lint-free cloth. After drying, surplus material residuals are removed by polishing.
- The coating has to dry at room temperature for at least 30 minutes. The complete curing is finished after roughly 2 days.



The figure shows three different bacteria on nutrient media. To be seen is the time dependence on the change in the number of bacteria. It is clearly visible, that the amount of bacteria is heavily reduced within 12 hours.

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Antibacterial Resistant Paint for Walls, Ceilings and Floors

HYGEN is a range of coating solutions which were designed as a secondary defence against commonly occurring bacteria such as the hospital Superbug MRSA and E-Coli.

Areas of Use

- Hospital patient areas.
- Food service, manufacturing and packaging areas.
- Pharmaceutical laboratories.
- Childcare facilities.
- Assisted care facilities.
- Gymnasiums.
- Water treatment plants.
- Any area which requires additional defence against bacterial growth

The **HYGEN** range offers the complete hygienic solution to the end user. The range of products can be used on a number of different substrates in a large variety of areas where hygiene is a necessity. The **HYGEN** range is available in a large range of colours and finishes.

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Chrome and Stainless Steel Protect

Nanoland Global's Chrome and Stainless Steel Protect is an alcohol based sealing material, which forms an ultra-thin layer on all metals. The surface thus gains water and dirt repellent attributes. An easy cleaning surface is created and in addition the coating has an antimicrobial effect (see figure).

It is specifically aimed at sealing surfaces in the hospitals and commercial kitchens creating an antibacterial resistant surface. For example: work surfaces, bathroom fittings, mirrors, glass plates, etc.

- it is especially suitable for metal substrates.
- it is highly efficient (ca. 15-25 mL/m2, the exact usage depends on the kind of application).
- it can be applied either by spraying (thin film) or be reamed on by using a lint-free cloth. After drying, surplus material residuals are removed by polishing.
- The coating has to dry at room temperature for at least 30 minutes. The complete curing is finished after roughly 2 days.

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