

## TRANSPORT



### The New and Advanced Way of infection control to answer the new challenges of the industry

The world economy was growing. Transportation needs by air, sea and land expanded in number, speed of travel and the volume of passengers. This allowed pathogens to move further, faster and in larger numbers. As we are learning, infectious diseases can be transported across the globe with greater ease than ever.

We knew, someday, we would be faced with a terrible pathogen; we are facing **Covid19**. Our way of life: hyper capitalism, deforestation to support Corporate growth appetite and overpopulation, the perfect storm for this new virus. Covid 19 may affect our way of life and transportation hygiene needs forever.

World population has reached 7,8 billion, living in ever-growing cities in which more than 700,000 people commute daily. Public transport, as we have been shown, is confronted with significant cross-contamination allowing for proliferation of bacteria, fungi and viruses. New protocols are being established with new ways of cleaning and disinfection. One such way, everyday disinfection has been supplemented with “**fogging machine**”. Have they been tested? Do they fill the gap? ***Under normal operating conditions, most disinfectants quickly dissipate***, allowing pathogens, bacteria, fungi and viruses to pass across every surface on to human.

**Bacoban**, The New Dimension in Infection Control provides a new one step cleaning and disinfection for public transport surfaces where significant cross-contamination occurs. **Certified long lasting up to 10-day protection.**

The Bacoban Advantage is the “new way” for better cleaning and disinfection needs in high-risk areas of cross-contamination. Suitable for surface cleaning and disinfection in airports, trains, trams, buses.

#### Bacoban’s Nano based formulations

- offers new Professional surface disinfection, hygiene sanitation and infection control
- High speed and high-volume environment mean we are faced with time restrictions. Bacoban’s is effective in reducing the cleaning time necessary by 50%. Most conventional disinfectant effectiveness is limited to the active time: until the solution dries up and evaporates. New contamination will then take occur a few minutes afterwards. **Bacoban’s cleaner/disinfectant once dried, forms an ultra-thin film that contains biocides to actively kill re-emerging germs for up to 10 days.** Bacoban will also establish a protective layer loosening the hold of dust, protein and liquids, allowing for complete and effortless removal. This makes Bacoban an ideal infection control partner for organizations needing to maintain regular cleaning processes.
- Bacoban extensively tested internationally, certified and recognized by industry experts to be effective against a wide range of pathogens including
  - Viruses: Coronavirus (incl. COVID 19, SARS- and MERS-CoV) Ebola, Hepatitis B and C, HIV, Influenza, Herpes and BVDV
  - Bacteria: Staphylococcus aureus, Methicillin-resistant Staphylococcus aureus (MRSA), Pseudomonas aeruginosa and Escherichia coli
  - Fungal infections: Aspergillus niger and Candida albicans

"Nanotechnologies" is an umbrella term that describes applications based on principles and properties existing at the nanoscale, that is, at the level of atoms and molecules. Nano: comes from “dwarf” in Greek, means one billionth in science. One (1) nanometre = one billionth of a meter or 1: 1,000,000,000 meters (10<sup>-9</sup> m). It’s the size of a small molecule; a hair is 50,000 times bigger.

AFSSET [1] distinguishes four major groups of manufactured products classified according to the form in which they are used:

- Nanopowders and ultra-fine powders are exploited because of their properties very different from those of the material on a macroscopic scale. Researchers, for example, recently discovered that gold nanoparticles are (unlike the same solid-state element) very powerful catalysts. Likewise, for several years now, they have been interested in fullerenes, the family of carbon molecules discovered in 1985, the best known of which is C60. In another sector, the development of hollow nanocapsules, capable of

enclosing substances in their internal compartment, would pave the way for all kinds of applications in the fields of drug administration, agrochemicals, cosmetics, cleaning products, textiles (aromatic additives), or wastewater treatment.

- Nanowires are structures whose width does not exceed a few tens of nanometers, but whose length varies from 500 to 10,000 nanometers. They are used for the transmission of electrical, optical and chemical signals or as reinforcing fibers for shock shields. Some laboratories also use it to make "bio-inspired" objects: adhesives imitating the legs of the gecko or, when they are in the form of nano-roughness, coatings reproducing the hydrophobic surface of lotus leaves. The best-known member of this family is the "carbon nanotube", a flexible molecule, a hundred times more resistant and six times lighter than steel, whose production there is still embryonic, would have reached 99 tons per year in 2004.
- Some coatings can be made by stacking one or more layers of nano-thick material. The deposition of nanolayers makes it possible to change the properties of a surface by making it harder, hydrophobic, hydrophilic, generating less friction, etc. Industrialists thus market self-cleaning, non-stick paints, or ) not scratching.
- Finally, nanoparticles have already been incorporated into composites or formulations for many years. This is the case with carbon black (6 million tonnes per year worldwide) which is used in the manufacture of printer inks and tires. Silica fumes (300,000 tonnes per year) for concrete and tire reinforcement. Ultra-fine alumina which is used for polishing "wafers" used by the microelectronics industry. And finally titanium dioxide (TiO<sub>2</sub>) and zinc oxide (ZnO) (1000 to 2000 tonnes per year) used as ingredients in sunscreens by the cosmetics industry.

### **Contact us for more information**

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