bioscience fresche®

Microbial Surface Control & Protection in Healthcare

World Health Organization

Global Healthcare Concern

Extracts from UN Speech by Dr Margaret Chan, Director - General of the World Health Organization
Keynote address at the conference on Combating antimicrobial resistance: Denmark, 14 March 2012

“The antimicrobial threat is easy to describe. It has an irrefutable logic.”

“Antimicrobial resistance is on the rise in Europe, and elsewhere in the world. We are losing our first-line antimicrobials. Replacement treatments are more costly, more toxic, need much longer durations of treatment, and may require treatment in intensive care units.”

“For patients infected with some drug-resistant pathogens, mortality has been shown to increase by around 50%. Let me give an example of what this means for a disease of global significance. If current trends continue unabated, the future is easy to predict.”

“Things as common as strep throat or a child’s scratched knee could once again kill. Some more sophisticated interventions, like hip replacements, organ transplants, cancer chemotherapy, and care of pre term infants, would become far more difficult, or even too dangerous to undertake.”

“Hospitals have become hotbeds for highly-resistant pathogens, like MRSA, ESBL, and CPE, increasing the risk that hospitalization kills instead of cures. These are end-of-the-road pathogens that are resistant to last-line antimicrobials.”

Global Healthcare Concern

The World Health Organization ranks nosocomial or hospital acquired infections [HAI's] as the third most significant threat to the human race.

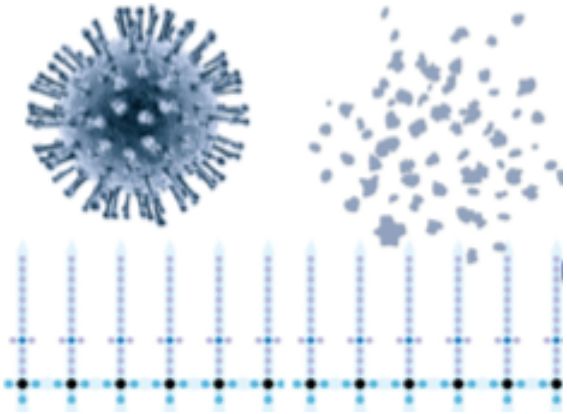
The USA Center for Disease Control Research have identified that 1,700,000 people contracted hospital acquired (HIA) infections annually in the USA.

This results in 145,000 recorded deaths annually, 97,000 of these being healthy people, who entered hospital for a relatively minor surgical procedure.

Margaret Chan (WHO Director) recently stated "This is a global threat situation which no medical system can sustain, humanely or financially. We must explore new approaches."

The cost of HAI interventions in the US now exceeds USD 34 billion annually, and growing.

What is Fresche?



Most biocides deactivate bacteria, mould and fungi by a complex process of chemical interaction. This mode of action is frequently inefficient and allows microbes to build resistance.

Fresche SiQac, bonded antimicrobials, destroy bacteria, mould and fungi “mechanically”, by setting a series of molecular “road spikes” on a treated surface.

The “spikes” hold a positively charged nitrogen ion which attracts and terminally destroys pathogens through a process known as lysis.

Unlike chemical disinfectants, the “spikes” are not consumed during this process, therefore they remain continually on guard to attract and destroy new bacteria and fungi as they approach the protected surface.

Delivering Powerful Outcomes

Fresche is the worlds first surface bonding, aqueous based, broad spectrum antimicrobial which delivers high level, persistent, continuing, antimicrobial control and protection of surfaces and substrates in healthcare environments. Fresche delivers a terminal kill of bacteria, and because it is not ingested into the bacteria it does not permit the building of microbial resistance.

Fresche contains no heavy metals, no toxic chemicals, no poisons. It is green, clean and safe for patients, patient families, hospital employees, and the environment.

Unlike conventional biocides, Fresche SiQac compounds do not leach, and they do not deplete as a bound antimicrobial, and inhibitory performance does not diminish on account of the disinfection process. Because of this, Fresche stands continually on guard to protect surfaces from microbial attack and colonisation.

We believe it is a powerful advance in the management and control of healthcare acquired infections [HAI's], and offers health providers significant potential to improve patient health outcomes together with lowering of patient risks, and facilitating release of hospital assets tied to re admissions on account of increasingly aggressive patient HAI's.

Protecting Hospital Employees

Safe, Durable, Microbial Protection

- **Hospital employee uniforms**
- **Patient privacy curtains**
- **Bathroom towels and mats**
- **Casualty cubicle curtains**
- **Linen on patient trolleys**
- **Clean up towels**

All hospitals have infection control procedures and policies, and staff take every precaution to avoid infections. However the risk of employee infection can never be eliminated and some employees have a higher risk of acquiring an infection than others.

A key issue, is the fact that pathogens are transmitted around hospital environments either as airborne pathogens, or as passengers on textiles and equipment moving in and around the hospital environment.

Fresche is highly efficient when applied/ infused into all forms of textiles. As a bound antimicrobial, it delivers a 99.9% terminal knock down of bacteria, followed by persistent microbial protection for the life of the textile.

Its “lock and bond” is durable for minimum 50 washes.

While infusion of Fresche to textiles is best at the production stage, hospital textiles can be retro-treated with great results.

Protecting Hospital Laundry

Practical Applications

- **Hospital bed linen**
- **Hospital blankets**
- **Hospital uniforms**
- **Hospital bath towels**
- **Drapes and draw sheets**

The best approach is for Fresche microbial protection to be applied to hospital textiles at the manufacturing stage. Fresche technical managers work with hospital suppliers to implement this powerful microbial control technology.

Traditional methods of sanitizing hospital laundry is by application of either steam [or heat] to the face of the textile or by chemical sanitization. This frequently degrades the life of the textile, and is not always efficient.

Fresche can be applied to hospital linen in a protocol where Fresche microbial protection compounds are applied to the textile during the final stage laundering process. Following this application, most treated hospital textiles can be washed in cold water and still meet healthcare standards. This represents a significant saving in energy costs and carbon footprint

Fresche Bioscience can engage with hospital laundry staff to conduct application and bacterial challenge validation trials.

Protecting Hospital Environments

Persistent Microbial Protection

- **Casualty waiting areas**
- **Casualty cubicles**
- **Food vending machines**
- **Front desk and lift buttons**
- **Handrails and washroom doors**

Modern day hospitals are large scale communities in themselves, embracing surgeons, administrators, casualty staff, paramedics, nursing teams, contractors, patients, families, patient doctors, visitors and hospital ancillaries. The hospital environment is both complex and intense.

Hospitals world wide are severely compromised by the presence of pathogens which impact sick or unwell patients, whose recovery depends on being cared for in a safe, secure and hygienically clean environment.

Fresche SiQac technology stands alone in its capacity to deliver a safer more protected environment for patients and healthcare employees.

Its non-leaching, non-depleting, non-chemical mode of action is a quantum opportunity for infection control managers and hospital administrators to gain significant traction in the war on superbugs and pathogens.

Safe For the Environment

In a highly competitive global market, Fresche surface bonded Si-QAC antimicrobials are challenging the dominance of chemical and heavy metals based sanitizing products by delivering a clear point of difference. It is the safest, cleanest and greenest eco-friendly surface bonded antimicrobial known to be currently available.

Most conventional biocides rely on toxic chemicals, poisons or heavy metals including silver, nano-silver, zinc omadine and copper to interact with and destroy pathogen cells.

These are leaching and depleting technologies which do not readily break down and are known to accumulate in our environment. Some traverse the dermal barrier and enter the human body, plus bio accumulate in the organs of fish and animals.

In final life, Fresche is biodegradable and breaks down to form nitrogen, oxygen and common sand. A true friend of our delicate global environment.

Certifications

Fresche microbial surface protection and control treatments have the following accreditations :

EPA

The active ingredient in Fresche EF 3851 is EPA registered, and Fresche EF 3851 fully complies with the Treated Articles Exemption ruling.

OEKOTEX

Fresche EF 3851 is registered on the OEKO-TEX® list of accepted chemical products, and is deemed by OEKO-TEX® to be harmless to human health.

NZ Food Safety Authority

This certification, confirming that Fresche is safe to use on food processing and preparation surfaces is expected shortly

The Fresche Point Of Difference

Fresche Microbial Control & Protection

- Contains no heavy metals or ethanol
- Kills by mechanical interaction
- Forms covalent bond with most surfaces
- Stabilised in a food grade aqueous solution
- Completely non toxic when applied
- Contains no carcinogenic compounds
- Terminal destruction of pathogen cells
- Will not encourage building of resistance
- Will not pass through skin, bio accumulate
- Delivers continuing persistent protection
- Safe, bio based, renewable and sustainable

Chemical and Metals Based Biocides

- Contain toxins and heavy metals
- Kills by chemical interaction
- Do not lock and bond with any surface
- Stabilised in methanol and chemicals
- Remains toxic when applied
- May contain carcinogenic compounds
- Selective destruction or partial kill
- Allow microbes to build resistance
- Bio accumulates in the body and environment
- Leaches and depletes in efficacy
- Harmful, poisonous, non renewable