

BioProtect

Antimicrobial

Biostatic Surface

Protection

Super-bugs are on the rise

- Infection is the #1 cause of death worldwide and #3 cause of death in USA
- 25 years ago 80% of infection controlled by antibiotics
- Today, less than 50% of infections are controllable
 - “Super bug” mutations caused by sterilants, chemicals
- Absenteeism due to sickness in USA costs \$50bn per year
- Mold is more lethal than asbestos and more prevalent
- 80% of infections spread by human touch

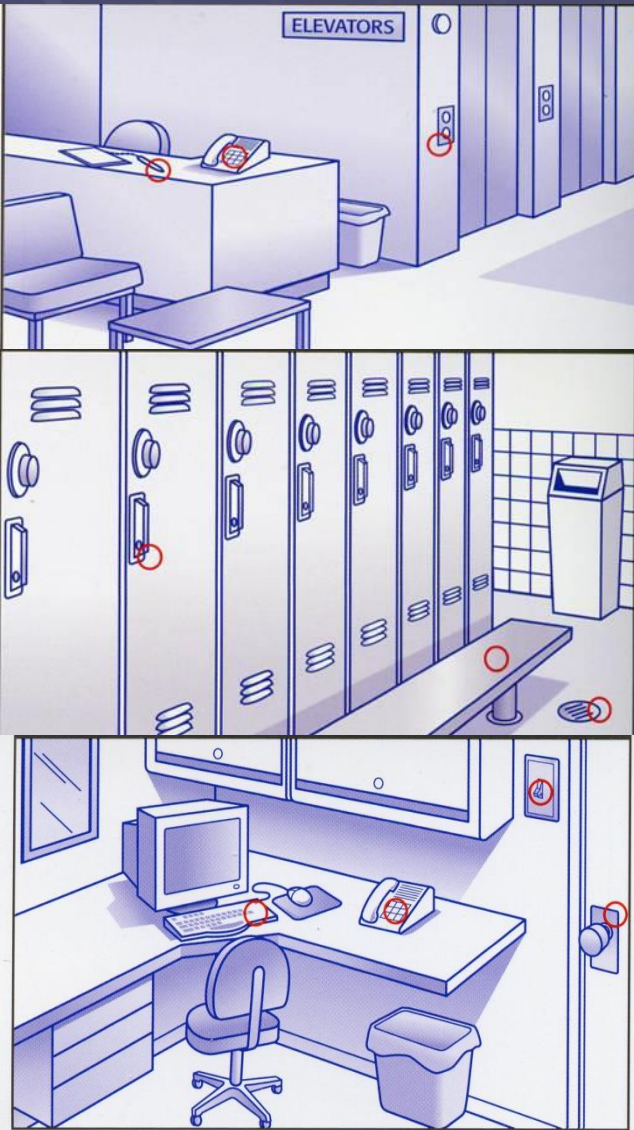
Problem Areas

- Hi-Touch points: touched by many people, multiple times per day
- Door handles, doors, desks, cleaning equipment, toilets, medical equipment, walls, beds, bed linen, uniforms, towels, gym equipment, AC ducting, ceilings.....the list is endless
- 80% of infection spreads through touch-points
- Touch points, floors, ceilings, AC ducting which are not cleaned regularly are reservoirs for health-damaging bacteria

Microbial Attack

- Microbial growth is activated by high temperature and moisture
- Standard cleaning chemicals and protocols are often ineffective and short-lived
- Microbes rapidly adapt, mutate and multiply
- Chemical residues and dead microbes become food source for mutated, more resistant microbes
- The more you clean with conventional chemicals, the greater the risk of microbe mutation!

What is BioProtect antimicrobial product protection?



- BioProtect is a patented, EPA registered, innovative new product.
- BioProtect technology is a spray-on antimicrobial protection for porous and non-porous surfaces.
- BioProtect antimicrobial protection gives substrates an added level of protection against damaging microbes such as bacteria, mold and mildew that can cause stains, odors and product deterioration.

How Does BioProtect protection work?

- The active ingredient in BioProtect polymerizes to all surfaces and is both colorless and odorless.
- Think of BioProtect as a layer of electrically charged swords. When a microorganism comes in contact with the treated surface, the quaternary amine sword punctures the cell membrane and the remnants are then electrocuted.
- Since nothing is transferred to the now dead cell, the antimicrobial does not lose its strength and the sword is now ready for the next cell to contact it. (NOTE: Normal cleaning of the treated surfaces is necessary in order for the BioProtect antimicrobials to continue their effectiveness. Dirt buildup, paint, dead microbes, etc. will cover the treatment prohibiting it from killing microorganisms.)

Silane Technology

Si (Silicon) molecule plus
O (Oxygen) molecules

Nitrogen Technology

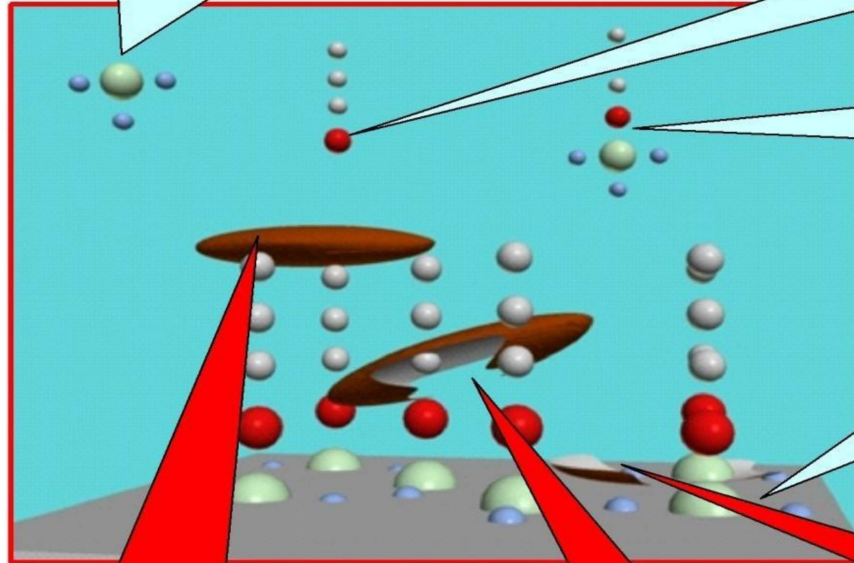
N⁺ (Nitrogen +) molecule &
C (Carbon) long chain molecules

Organo Silane Technology

Silane plus Nitrogen Technology
N⁺ & Long chain molecules

Polymerization Technology

Organo Silane makes a durable
& long lasting bond to most
surfaces, porous & non-porous



Microbial Attraction

Microbes are attracted to
the surface and the
“positively” charged
Nitrogen

**Microbial
Penetration**

Microbes are
pierced by the
“long chain” of
molecules.

Microbial Destruction

Microbes are destroyed by the
combination of breaking the cell
wall and the N⁺ charge



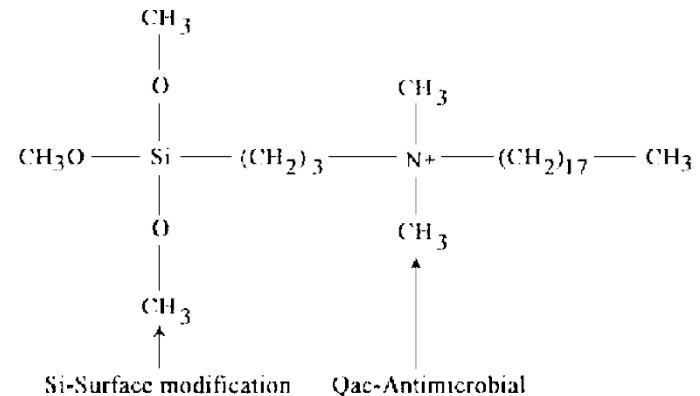
Qualities of BioProtect

- Effectiveness - The molecule never depletes itself as all other antimicrobials do.
- Durability – The product's stable molecular structure results in a protectant that is permanent for the life of the product in some cases due to its tenacious bonding property to most substrates.

POWERFUL COMBINATION (SiQac)

Organosilane quaternary amine

Molecular Structure:



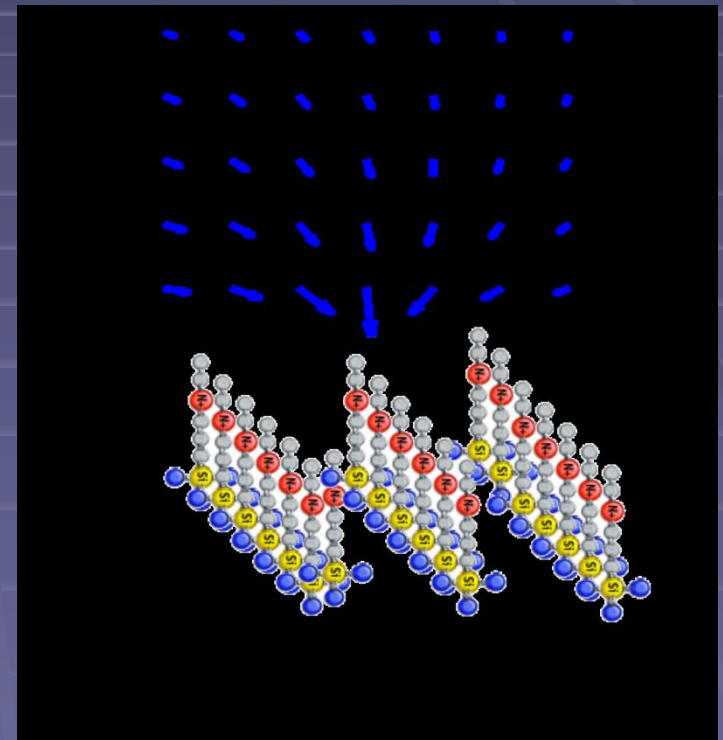
Why is BioProtect different?

- BioProtect is a biostatic surface protectant. It is not:
 - Leaching Poisons
 - Heavy Metals
 - Triclosans
- All of the products listed above can create superbugs and do not have a residual effect.
- BioProtect protects surfaces and textiles in between cleanings.

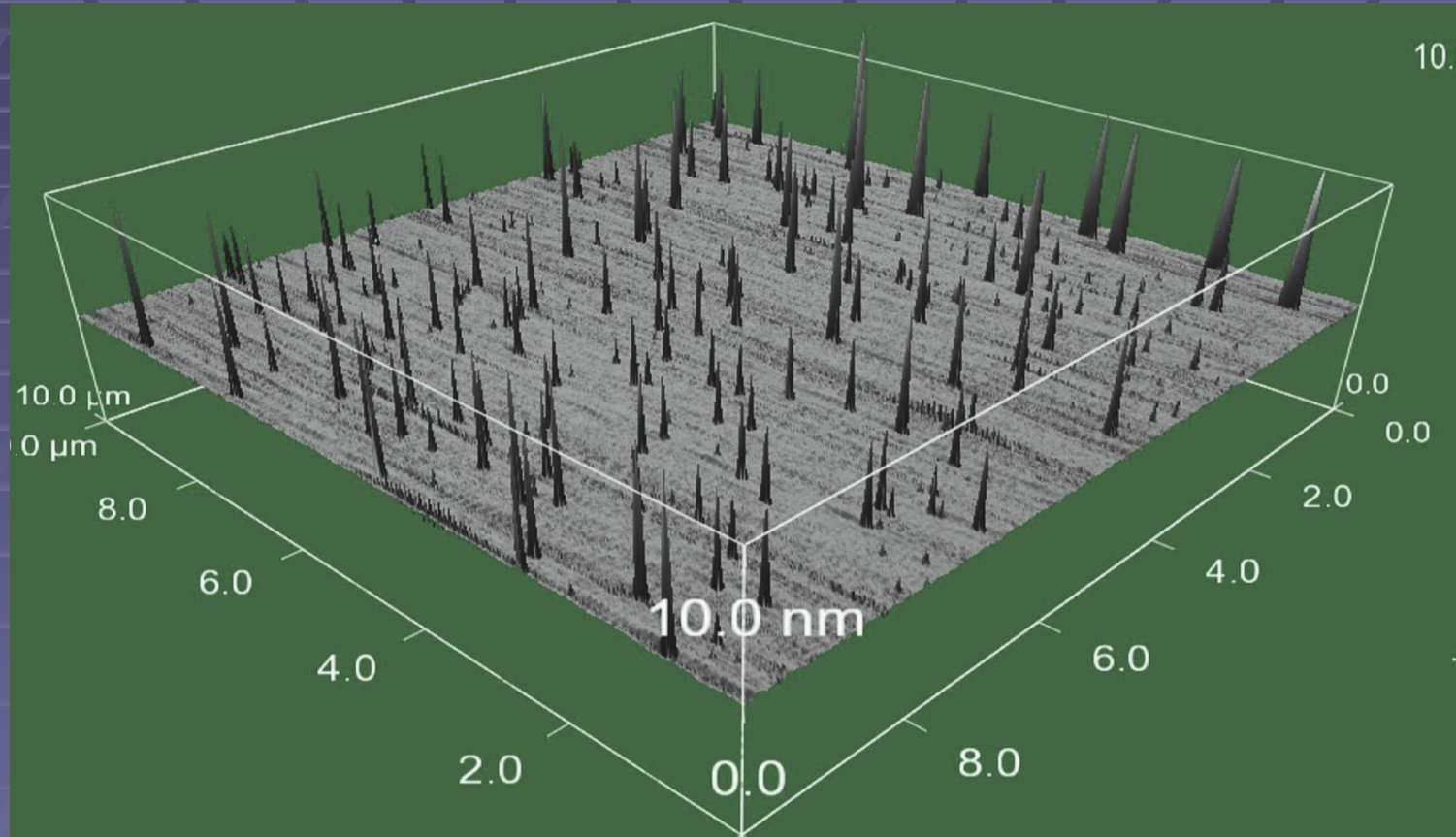
How It Works



- **BioProtect** forms an almost permanent bond with the surface substrate.
- A ‘wheat field’ of carbon shafts protects the surface from microbes.
- Microbes are drawn to the ‘wheat field’ of shafts by the positively charged nitrogen atom.
- The microbe’s cell wall is ruptured by the shafts.
- A positive charge from the nitrogen atom delivers a fatal electrical charge to the cell wall of the microbe



Actual BioProtect Molecule on a Surface



What benefit do I get from products that are treated with BioProtect?

- BioProtect continuously fights the growth of microbes that can cause stains, odors and product degradation.
- BioProtect protection makes all surfaces that are treated easier to clean and keeps them cleaner and fresher between cleanings.

Does BioProtect begin working immediately?

- BioProtect starts to work as soon as the microorganism comes into contact with the treated surface.
- It then works continuously to maintain a consistently lower bio-burden than would be expected on a surface without BioProtect protection.

How do I know that BioProtect is safe?

- BioProtect technology has undergone extensive independent laboratory testing and has a long history of safe use.
- It is registered with the EPA for all applications in which it used.