

# Disinfecting Surfaces to Create Safer Spaces



## Regular cleaning and disinfection – is it truly enough?

The importance of regular cleaning and disinfection of frequently touched surfaces cannot be understated, especially in today's times.

Yet, traditional cleaning methods, though important, have only a momentary effect; germs, bacteria, and viruses can adhere to cleaned surfaces almost instantly after the cleaning treatment, resulting in the spread of diseases via frequently touched surfaces, especially with seafarers working in enclosed spaces on board.

It is also not possible to always clean, disinfect or use strong chemicals on surfaces daily to prevent the growth of germs, as this adds on to financial burden and the labour that would have been required for the upkeep.

Therefore, what the crew need is a long-lasting protection against such viruses which gives them an assurance of safety. In such cases, the use of anti-microbial coating is a right add-on protection option.

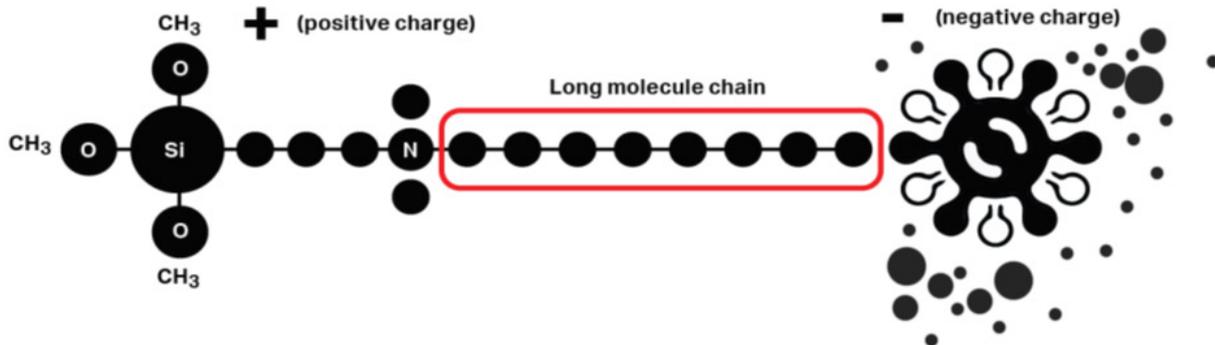
## Wilhelmsen's Anti Microbial Active Coating

Our Anti Microbial Active Coating can be applied onto many frequently touched surfaces on board and is sturdy enough to withstand over 1000 touches and multiple cleaning cycles. For surfaces that are seldom used, the coating can last for a longer time.

Specific efficacy of Anti Microbial Active Coating against the SARS-CoV-2/COVID-19 virus and other claimed microbes have also been proven effective and confirmed by worldwide accepted tests executed by a certified lab.

Anti Microbial Active Coating is non-corrosive and contains no heavy metal nanoparticles or silver salts, making it a safe choice for all vessels. It also has a unique feature – a UV-triggered spot check capability, allowing crew members to verify if the coating is still active with the use of a handheld UV torch.

## So, how does the Anti Microbial Active Coating work?



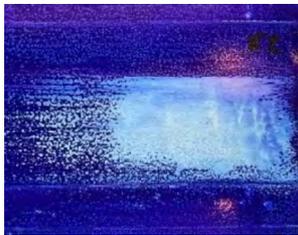
The active ingredient of this anti-microbial active coating consists of a conventional quaternary ammonium salt bonded to a silane molecule and linked into a long molecule chain. After merging, a highly active silane molecule chain is formed. This molecule chain has both firm bonding capabilities as well as excellent antimicrobial properties.

There is a special “binder” in the formulation that locks the active ingredient (Quaternary ammonium) in place, providing it the structure that increases the effectiveness and keeping it in formation, forming a well distributed long molecular chain that creates a thin film when applied on surfaces. This binding technology helps keep the coating to stay active for longer period on almost any surfaces.

During the application process, of course under the naked eyes it can't be seen, the coating binds onto any surface, creating a transparent coating with anti-microbial properties. The active coating positively charged nitrogen atom gets attracted to the negatively charged microbes membranes. The long molecular chain (which consist of both carbon and nitrogen atoms) acts like a sword and punctures the microbe membranes. This exposes the genetic material of the microbes (RNA/DNA) which effectively kills or deactivates it. The product is proven effective against several types of microbes, such as bacteria, fungi and viruses, including SARS-CoV-2.

# Over 1,000 touches - Anti Microbial Active Coating's Efficacy on Surfaces

The test below demonstrates the effects of routine chemical cleaning on surfaces that are applied with Anti Microbial Active Coating. This test involved using a cloth with cleaning chemicals and the action of wiping was simulated by using a crock meter to exert a constant force of 9 Newtons moving back and forth on the coated surface (much heavier force than a human hand would apply, estimated at 4 Newtons of force).

Cleaning Product	Melamine Surface		Explanation
	3X Cleaning	10X Cleaning	
Non-Ionic			<p><b>After 3:</b> Still Effective</p> <p><b>After 10:</b> Still Effective</p>
Isopropyl Alcohol (70%)			<p><b>After 3:</b> Still Effective</p> <p><b>After 10:</b> Partially Effective</p>
Water			<p><b>After 3:</b> Still Effective</p> <p><b>After 10:</b> Partially Effective</p>

## Benefits of Anti Microbial Active Coating



### Protection

Provides crew members protection from germs, bacteria and viruses in between cleaning and disinfecting of surfaces.



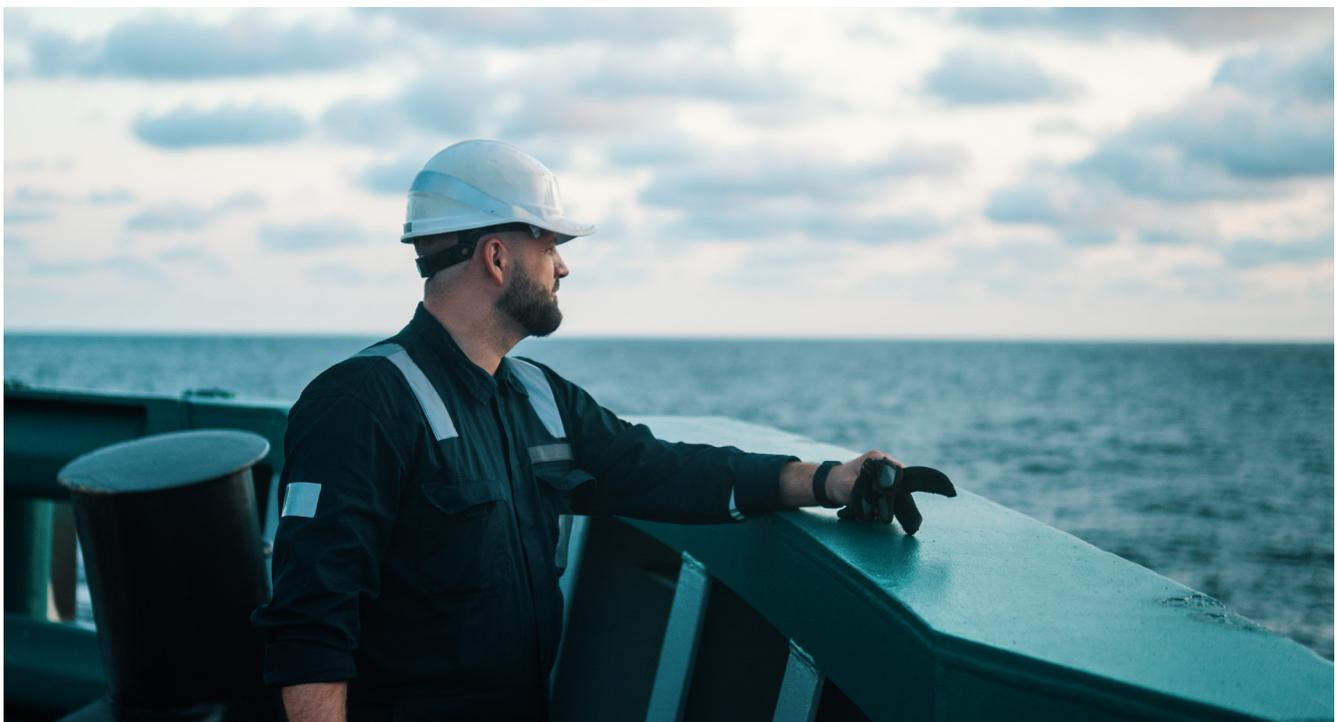
### Long-Lasting

Coating effects are long-lasting, giving added protection to the crew.



### Versatile and Easy-to-Use

The coating can be easily applied to many surfaces including metal, tile, stone, plastic, wood, leather and textiles.



The rapid growth of the antimicrobial coating market is paving a new path for cleaning on board, and with Wilhelmsen's Anti Microbial Active Coating, ship owners and operators can adopt this practice today.

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