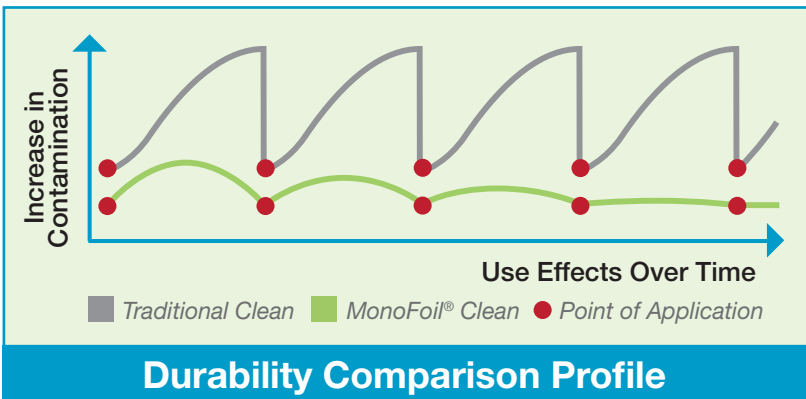




MonoFoil[®] Antimicrobial

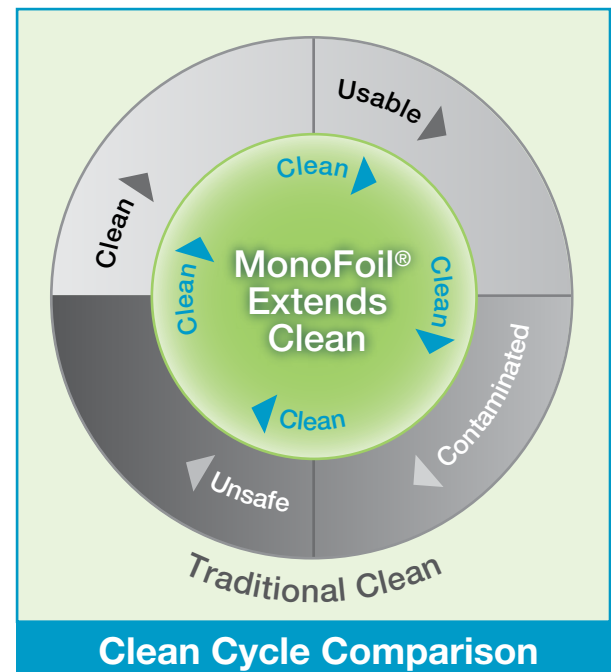
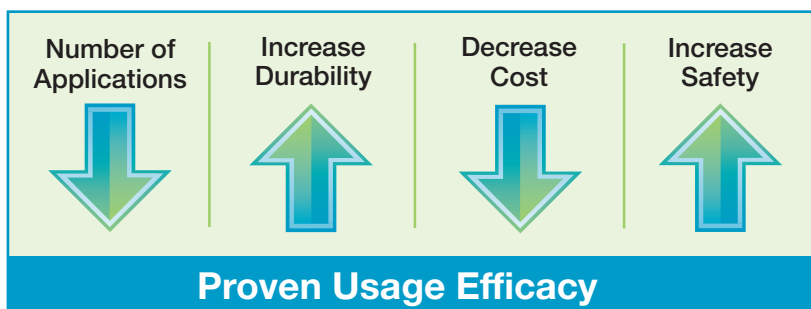


Technically Different

What makes the **Monofoil[®]** unique is that it functions through a physical mode-of-action versus the chemical poisoning associated with traditional antimicrobials. This physical mode-of-action prevents microbes from adapting to the shield so there is no ability to develop resistance. Moreover, the endurance factor ensures the microbes are continually eliminated for at least 90 days.

Ecologically Preferred Method

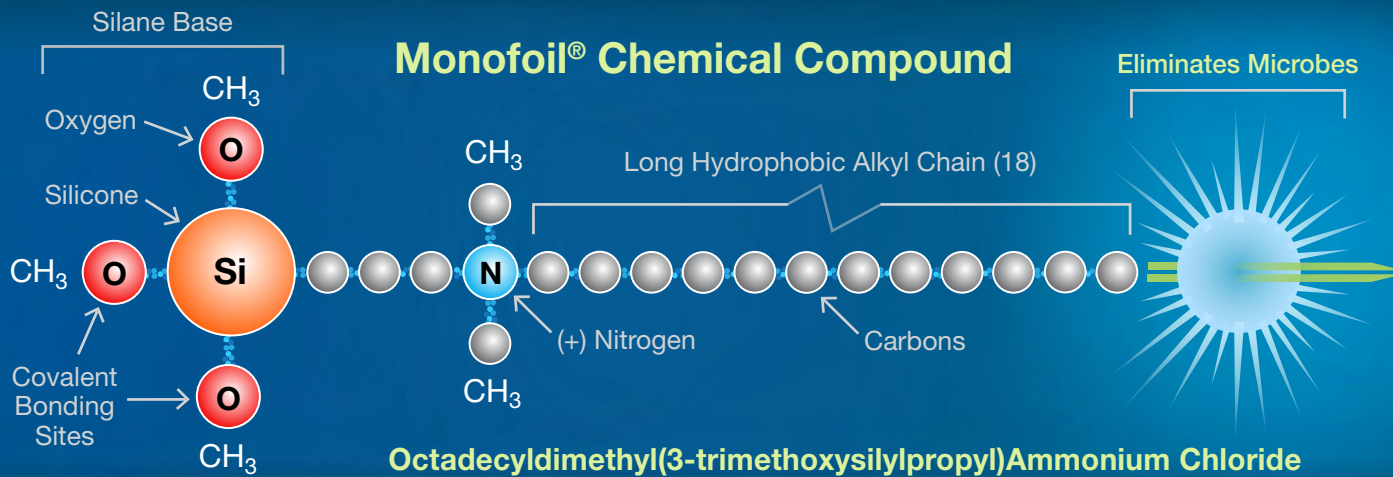
Monofoil[®] also addresses the two main ecological concerns associated with traditional leaching antimicrobials: bleeding harmful toxins into the environment, and you, and the generation of adaptive organisms. **Monofoil's[®]** mode of action is physical and its molecular makeup alleviates these concerns. Additionally, **Monofoil[®]** is invisible, colorless, and odorless. It is safe for humans and the environment.



Official Statement from the National Athletic Trainers' Association on Communicable and Infectious Diseases in Secondary School Sports

"Due to the nature of competitive sports at the high school level, there is increased risk for the spread of infectious diseases, such as impetigo, community acquired methicillin-resistant staphylococcus infection (MRSA) and herpes gladiatorum (a form of herpes virus

that causes lesions on the head, neck and shoulders). These diseases are spread by skin-to-skin contact and infected equipment shared by athletes, generally causing lesions of the skin." —National Athletic Trainers' Association



Monofoil®'s microbe shield is based on the unique properties of a certain polymer, **Octadecyl Dimethyl Trihydroxysilyl Propyl Ammonium Chloride**. Microbes are eliminated physically by the polymer's long molecular **octadecyl** chain composition, which acts like a sword that effectively skewers and ruptures the microbe's outer cellular wall, disabling all germs (viruses, bacteria, molds and fungus) on contact. This is a process called **lysis** (rupture of membrane).

Monofoil® works by means of a two-step process. The positively charged action on the **Monofoil®** molecule attracts the negatively charged cell wall of the microorganism. Initially, the hydrophobic alkyl chain penetrates the similarly hydrophobic cell wall of a microbe that it comes in contact with. As the alkyl chain penetrates the microbe's delicate cell wall, the wall is weakened and punctured. Second, as the cationic quaternary ammonium group comes in contact with the cell wall it disrupts the ion flow and causes leakage into or out of the cell wall, usually resulting in the cell losing its contents or actually bursting. **Monofoil®**'s charged quaternary ammonium alkyl group remains unchanged and is available to repeat the process indefinitely. Because of this "physical" and "electrical" deactivation mechanism, microbes do not get an opportunity to develop resistance or immunity to **Monofoil®**'s chemical

compound. **Monofoil®** therefore eliminates the issues that have led to the development of resistant species that are currently a threat to public health.

Since the **Monofoil® Antimicrobial** agent activity is not dependent upon release and diffusion of the antimicrobial molecule, the activity remains constant over time. Additionally, the active molecule is localized in highly concentrated form on the treated surface. Since this is where proliferation of microbes occurs, the antimicrobial is effectively delivered specifically to the environment of importance. This not only extends the potency of the agent, but also minimizes the risk of the development of resistance known as **mutagenicity**, or what is commonly called a "super bug." The permanent attachment of the **Monofoil® Antimicrobial** molecule to a surface eliminates the potential infection risks associated with conventional antimicrobials.

In summary, since **Monofoil®** does not dissipate or leach, it cannot be absorbed by the organism or by humans. As the membrane of the microbe is physically ruptured and electrocuted, **Monofoil®** is not consumed and does not dissipate, nothing is transferred. The antimicrobial action is not depleted and continues to control microbial growth with no loss of efficacy.



Texon Antimicrobial
DEFEATING MICROORGANISMS



Call 1-800-328-3966 for more information or visit www.texontowel.com

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