



# MEDI DEFENSE™

## Penetrexx ANTIMICROBIAL

Penetrexx Antimicrobial is contains an EPA registered Bio-Static product based on a unique formulation which effectively reduces the risk of cross contamination of a broad spectrum of bacteria, mold, fungi, algae, and yeast on a wide variety of treated substrates. The beauty of this technology is that it controls microorganisms without chemical poisons. Instead, it relies on electrically charged particles that have a unique spiked molecular structure. In nature, most microbes carry the opposite electrical charge... so they are physically and irresistibly drawn into contact with Penetrexx pointed molecules. The physical contact punctures the cell walls of the offending microbes. These molecular spikes are undetectable to human touch, but more than a match for single-cell organisms.

Penetrexx contains Clearstreams EPA registered antimicrobial (EPA Reg. No. 92057-G) and is extremely effective at reducing ATP Scores

Less invasive, longer-term solution to the reduction of interior contamination

Non-leaching, non-corrosive and will not migrate from the treated surface

Perfect for use in hospitals, hospice care, rehabilitation centers, changing rooms, emergency vehicles, on medical devices and equipment and where public health claims for reducing the risk of cross contamination are required.

FDA approved for use on food prep surfaces

Ready To Use (RTU) Formula available in 32 ounce spray bottles, 1 gallon containers, 5 gallon pales, 55 gallon drums, or 275 gallon tote (stackable) containers



### Around the clock touch surface protection.

MediDefense Antimicrobial Finish creates a protective shield on treated surfaces which continually fights microbial contamination between





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### HOW DOES THE PENETREXX TECHNOLOGY WORK?

The active ingredient in the Penetrex antimicrobial forms a colorless, odorless, positively charged, polymer, which chemically bonds to the treated surface, think of it as a layer of electrically charged swords. When a microorganism comes in contact with the treated surface, the "quat" or "sword" punctures the cell membrane and the electrical charge shocks the cell. Since nothing is transferred to the now dead cell, the antimicrobial doesn't lose strength and the sword is ready for the next cell to contact it. Normal cleaning of treated surfaces is necessary to prevent buildup of dirt, dead microbes, etc. which could cover the "swords", prohibiting it from killing microorganisms.

### WHAT IS THE PURPOSE OF THE SILANE PORTION OF THE MOLECULE?

Silanes are extremely efficient bonding agents, which can be coupled to other molecules and then used to permanently bond those molecules to a target surface. This process modifies surface properties of building materials and transforms them to a material that will not support microbial growth. In other words, it is the "glue" that holds the "spike" to the surface.

### IS THE PENETREXX TECHNOLOGY A QUATERNARY COMPOUND?

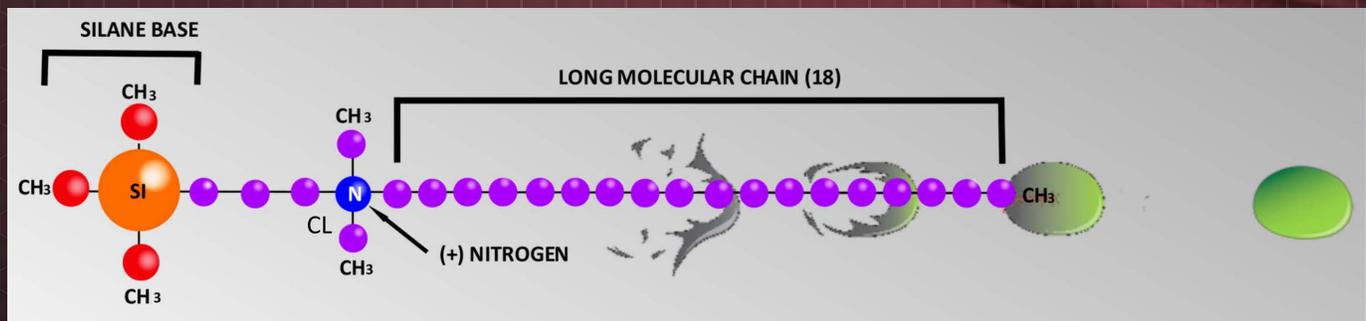
Penetrex is an organosilane, but part of the molecule is a quaternary amine. Unlike traditional quats, which have a very short effectiveness and a limited kill spectrum, Penetrex provides long-term protection, and controls a very broad spectrum of microorganisms (including Gram (+) and Gram (-) bacteria). As an added benefit, it is easier to use.

### WHAT IS THE DIFFERENCE BETWEEN PENETREXX AND OTHER ANTIMICROBIALS?

Conventional products are absorbed into living cells and kill by way of poisoning the organism. They are designed to act quickly and dissipate quickly to avoid adverse effects to humans and animals due to their toxic ingredients. Most commercial antimicrobials used for treating building surfaces do a great job of getting a quick kill on bacteria and fungi, although most have a limited spectrum of effectiveness. The Penetrex technology takes a totally unique approach. It provides an effective initial microbial kill when applied, like the conventional methods but it also provides long-term control of growth on treated surfaces. The surface itself is modified to make it actively antimicrobial for the normal life of the substrate onto which it is applied.

### IS PENETREXX PERMEABLE TO MOISTURE?

Yes, moisture that is in or on the treated material or surface passes through the treatment. After curing, the treatment is somewhat hydrophobic (water repellent) but it should not be considered a replacement for commercial water repellents.



The microorganism is attracted to the treated surface and punctured by the long molecular "sword." This is a physical rupture of the cell membrane, mPale is not consumed by the organism and stands ready to defend the surface from the risks of cross contamination.



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### **DOES PENETREXX GIVE OFF GASSES DURING OR AFTER APPLICATION?**

No, Penetrexx does not volatilize, dissipate, or leach onto other surfaces or into the environment. Penetrexx's chemistry polymerizes where it is applied and forms a permanent bond that lasts for the life of the treated surface.

### **HOW LONG DOES THE TREATMENT LAST?**

Since the cured antimicrobial is non-volatile, insoluble, and non-leaching, the treatment will last until its abraded from the surface. A treated surface's life span depends on a number of factors, not the least of which is surface preparation. Treating a dirty or unstable surface decreases the effectiveness of the antimicrobial. Abrasive or caustic (pH 12.0) cleaners can shorten the effective life of a treated surface. Although our studies have shown some substrates remaining effective for the life of the surface. We recommend high touch surfaces be treated every 30 days or if in patient rooms every terminal cleaning.

### **WHAT KIND OF PREPARATION IS NEEDED FOR TREATMENT?**

Clearstream's MEDI DEFENSE line has a compatible surface preparation and cleaning product (mPerial) that is also a disinfectant. Penetrexx when used in tandem with mPerial, creates the perfect combination of cleaner and antimicrobial protection. When mPerial is not available we recommend a non bleach based product to clean and disinfect surfaces prior to applying Penetrexx.

### **HOW DO YOU HANDLE CONTAMINATED SURFACES?**

Microbes can be extremely hazardous. Severe contamination with hazardous organisms may require extreme cleaning protocols similar to those for asbestos removal. For normal decontamination: solid surfaces should be thoroughly cleaned with A CLEANER /DISINFECTANT before applying Penetrexx to the surface.

### **HOW IS PENETREXX APPLIED?**

For everyday applications Clearstream's MEDI DEFENSE Penetrexx antimicrobial can be applied with our easy to use 32oz surface spray. When you require treatment of facilities or larger surface areas Clearstream has trained and certified technicians which match the latest application techniques to the specific projects scope.

EXPERIENCE THE FREEDOM OF KNOWING YOUR ENVIRONMENT IS  
**CLEAN, PROTECTED & PRESERVED**