

**An Information Service of Anti-Microbial Solutions LLC**

## **AMS—A Revolutionary New Technology**

### **About AMS Anti-Microbial Technology**

- **Highly effective against many bacteria and fungi.**
- **AMS Technology uses USA EPA\* Registered Ingredients.**
- **AMS can be “built-in” to the product (as it is in vinyl gloves).**
- **May be easier to integrate into your product than you could ever imagine.**
- **A Revolutionary Technology worth evaluation for your products.**

\* EPA—United States Environmental Protection Agency.

Anti-Microbial Solutions LLC (AMS) was founded three years ago to develop a new type of anti-microbial technology that could be placed in everyday products, reducing the growth and impact of bacterial and fungi in our daily lives.

The AMS Technology offers new ways of integrating anti-microbial and anti-fungal properties directly into products. For instance, disposable Vinyl gloves is one of the first everyday products integrating AMS Technology .

The AMS Technology is a combination of proprietary technology and manufacturing techniques, that results in a very high degree of anti-microbial and anti-fungal efficacy.

AMS is not a coating! In the past, anti-microbial technology was applied to the glove post manufacture. Though it was beneficial for the first touch, over time, the anti-microbial value was compromised.

AMS's United States Environmental Protection Agency (EPA) Registered Ingredients are now incorporated during the early stages of

glove production. Thus, AMS has developed a technology that is literally “built-in”.

This revolutionary process allows a consistent integrated technology that stays in the glove throughout its use.

The AMS technology encompasses both bacteriostatic (growth-inhibiting) and bacteriocidal (bacteria-killing) properties, however, as the technology is built into the glove itself, it is important to note that the anti-microbial protection does not extend beyond the glove, does not prevent disease and is not a replacement for good hand hygiene.

The vinyl glove is only one of the infinite anti-microbial / anti-fungal applications and adaptations of our technology.

Various other products are under development and numerous base formulations are being created for additional materials and products.

AMS may be able to integrate our anti-microbial and anti-fungal properties in your products. Interested parties should contact AMS (see page 2).

## How Does It Work?

In order to explain how our AMS Technology works, it is necessary to understand what anti-microbials are and how they work.

Anti-microbial is a broad term that refers to any compound, including antibiotics, sanitizers, disinfectants, a number of food preservatives and other substances that acts to inhibit the growth of or kill microorganisms

The AMS Technology kills bacteria by inhibiting the growth of microorganisms by using an electrochemical mode of action to penetrate and disrupt their cell walls. When the cell walls are penetrated, leakage of metabolites occurs and other cell functions are disabled, thereby preventing the microorganism from functioning or reproducing. In terms of the effect against fungi, the antifungal agent depolarizes the membrane electro-potential and inhibits the cell from splitting under mitosis.

Anti-Microbial Solutions LLC President, Ken Mosher states "*We have taken extraordinary measures to make our technology **protective against numerous bacteria and fungi while at the same time, being safe for everyday use**; all test results have shown that our AMS Technology has excellent efficacy*

*against a wide range of bacteria and fungi.*

### AMS Anti-Microbial Technology...

- **Is the proprietary technology proven highly successful at preventing future growth of bacteria and fungi.**
- **Is Cost-Effective**
- **Uses EPA Registered Anti-Microbial Agents**
- **Is Non-Carcinogenic**

**Remember**—The AMS Technology is unique in that it is not a coating. Our technology is designed to be built into the product and protects from the inside and outside.

On page 3, ***Tech Notes*** shows how AMS validates its technology.

For more information on our technology, please feel free to contact our office.

If an anti-microbial technology would enhance your product, or you are interested in developing a new anti-microbial product, we encourage you to contact us.

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## How AMS utilizes certified laboratories to validate our Technology

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Anti-Microbial Solutions LLC takes great pride in developing anti-microbial and anti-fungal benefits for our licensee's products. We would like to share how we utilize independent third party laboratories and the process they use to determine the AMS testing in textiles.

### Listing of Relevant Test Methods\*.

1. ISO 22196:2007, Plastics Measure of antibacterial activity on plastics surfaces
2. ISO 20743:2007, Textiles – Determination of antibacterial activity of antibacterial finished products
3. AATCC Method 100 = Antibacterial finishes on textile materials, assessment of.
4. AATCC Method 30 = Antifungal activity, assessment on textile materials mildew and rot resistance of textile materials.
5. AATCC Method 147= Antibacterial activity assessment of textile materials: parallel streak method.

### Highlight: Antibacterial Test (ISO 22196:2007)

The ISO 22196 method is designed to quantitatively test the ability of plastics to inhibit the growth of microorganisms or kill them, over a 24 hour period of contact.

### Why we use the ISO 22196 Test:

- The method is quantitative and results tend to be reproducible, provided the inoculum does not spill off of the target area after being covered with the thin film.
- The method tests for both bacteriostatic (growth-inhibiting) and bactericidal (bacteria-killing) properties.
- Microbial concentrations are standardized, and bacteria are provided with nutrients during the incubation period, which provides them with ample opportunity to grow if surfaces aren't sufficiently antimicrobial. This is in contrast to certain other antimicrobial tests, where microbes are "incubated" in non-nutritive suspensions, which itself may be stressful over long periods.
- The method stipulates triplicate experimentation, which helps researchers estimate the precision of the individual tests and increases overall experimental accuracy.

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**The ISO 22196 test is an excellent way to quantify the antimicrobial activity level of an antimicrobial surface, especially one that is plastic. Among the various tests for antimicrobial activity of surfaces, this has emerged as one of the industry standards for plastics (i.e. vinyl gloves).**

\*American Association of Textile Chemists and Colorists (AATCC)

\*International Organization for Standardization (ISO)

Look for the next edition of AMS **TECH NOTES** in First quarter 2010.