



301-864-3828



HVAC Antimicrobial Protected Coatings



Introduction to Shop Applied Coating Technology



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HVAC Heating, Ventilation, and Air Conditioning Then & Now

Although HVAC technology is one of the most practical advantages of modern construction, it's plagued with potential problems. Even a well maintained HVAC system can create a perfect environment that consists of dark, warm, enclosed surfaces where microbes can thrive.

With increasing public attention focused on odor causing bacteria, mold and mildew, consumers and businesses alike are looking for innovative and effective ways to address these concerns. Science, and cutting edge technology companies have been working to develop solutions for hospitals, schools, restaurants and even our homes. Silver Ion antimicrobial protected clean surface technology is leading the way by design.



Bio Shield Tech and Silver Bullet AM® Shop Applied Coating is the Answer

Silver Bullet AM® is a revolutionary product that assures the natural protective qualities of silver, which disrupts microbes and stops their growth. The product is based on Agion®, a silver zeolite antimicrobial compound that can be applied to galvanized and stainless steel, aluminum, fabrics, textiles, plastics, and other substrates. In Silver Bullet AM®, Agion® is applied as a heavy-duty, water-based epoxy coating on metals and other surfaces to suppress microbial growth-it even protects against metal corrosion.

Silver Bullet AM® can be used for a wide range of industrial purposes:

- HVAC: Fully compliant with all new product specifications for "Shop Applied Antimicrobial Protected Coating" tested for efficacy by an NRTL. Agion® antimicrobial technology is registered by the EPA for use in HVAC systems. The coating is available in clear, tracer white, or tracer black.
- Building and construction: Safeguard the longevity of your building materials by treating them with Silver Bullet AM®, preventing yeast and fungal growth in walls, roofs, and basements.
- Commercial food and water equipment: Silver Bullet AM® is one of the safest antimicrobial treatments for humans and animals, making it an ideal coating for use on industrial water treatment and food packaging equipment.
- On-site touch-ups: Silver Bullet AM® is available in aerosol form for easy touch-ups as needed.

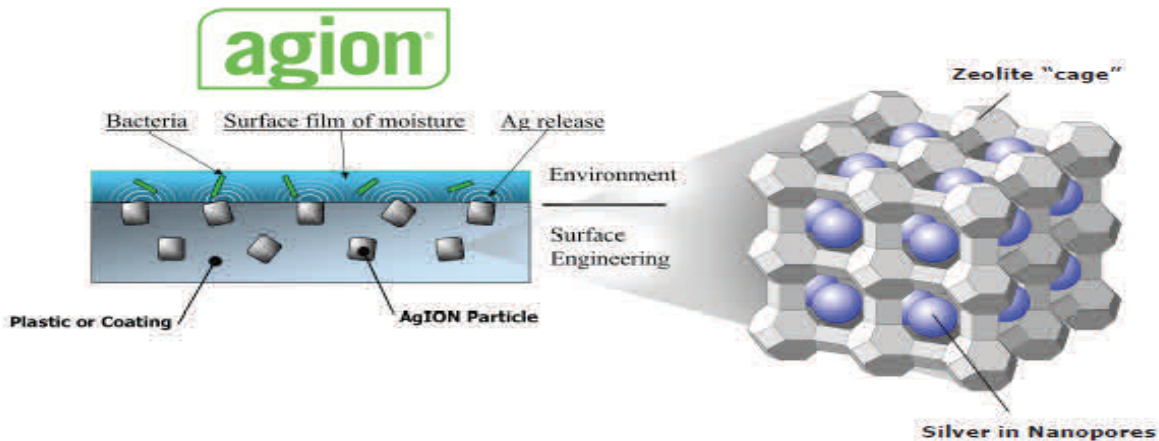


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How Silver Bullet AM® with Agion® Antimicrobial Technology Works

Silver Bullet AM® Antimicrobial Protected Coatings uses breakthrough Agion® Silver Zeolite Technology. Silver is a safe and effective way to prevent growth of odor causing bacteria in hospitals, water filters, medical devices, consumer products, food processing facilities and is EPA registered for use in HVAC systems. Agion® unleashes the natural antimicrobial power of silver with a unique zeolite carrier and ion exchange devise that manages the release of the silver ions to provide continuous suppression of microbial growth wherever it is applied.



A Shop Applied Antimicrobial Protected Coating For HVAC Projects Of Any Size

Whatever size structure you'll be outfitting with an HVAC system, from a small office building to a new wing of a college, chances are your spec sheet will call for antimicrobial coated steel for its construction. This somewhat recent addition to the requirements that must be met in fabricating an HVAC system was no accident. In fact, this antimicrobial protected coating brings one of the most significant advances in HVAC design that we have seen in years.

Silver Bullet AM® meets new project specifications for efficacy by an NRTL, and registered by the EPA for use in HVAC systems

Bio Shield Tech is pleased to offer a stellar selection of Silver Bullet AM® Shop Applied Antimicrobial Protected Coatings, with sizes suited to every job. Whether your project requires 3 quarts or 300 gallons, we arm you with the tools that help you to meet current specs effectively and efficiently.



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The Silver Bullet AM® System

Silver Bullet AM® Antimicrobial Protected Liquid Epoxy

Silver Bullet AM® Antimicrobial Protected Coatings, with its unique resin system, can be applied to walls, ducts, coils, filters and plastic components of HVAC systems. Field and laboratory data shows long-term control of the growth of bacteria, mold and fungus on components treated with Agion® Antimicrobial technology.

Silver Bullet AM® Acrylic Aerosol 14-451AM

Silver Bullet AM® Aerosol is an acrylic resin material mixed with Agion antimicrobial compound. This product is designed to control bacterial growth as well as the growth of mold, mildew and algae on the protected surface. It sprays on easily, dries quickly, contains no HAPS solvents, is low VOC and is perfect for on-site touchups when used in conjunction with other Silver Bullet AM® products.

BC4000 Cleaner

BC 4000 is a general purpose liquid alkaline cleaner intended to serve a variety of applications in general metal working and industrial applications. Cleans all types of parts and metals to eliminate the need for individual solvents. Normally it is sprayed on and then wiped clean with clean rags. It can be used in agitated cleaning machines.

*Silver Bullet AM® Aerosol is a registered trademark of Burke Industrial Coatings

Bio Shield Tech is More Than a Supplier

We have the expertise you need to understand current antimicrobial technologies and to find the solutions that are best for you and your customers. What's more, we'll show you how Silver Bullet AM® can easily satisfy requirements through your submittal process and advise you on safety and procedural requirements for antimicrobial protection and application.

As an approved HVAC specialist for Silver Bullet AM®, our products include Agion antimicrobial compounds that have been tested for efficacy by an NRTL (Nationally Recognized Testing Laboratory) and are registered by the EPA for safe use in HVAC systems.

Bio Shield Tech is trusted by medical facilities and manufacturers, construction firms, HVAC providers, and government agencies in need of antimicrobial and personal protection products. Our certified industry experts are available to guide you through each phase of the process.





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**SILVER BULLET AM® Tracer Black
AGION® ANTIMICROBIAL PROTECTED GLOSS EPOXY
20-452 Tracer Black**

DESCRIPTION 2 to 1 mix Water Base Epoxy protected with Agion® Silver Antimicrobial Type AC

USES A tough, heavy duty, extremely chemical resistant epoxy designed for maximum performance in severe environments. It contains a bactericide to protect the coating against over 650 strains of bacteria, mold, fungi and algae.

RECOMMENDED PRIMERS Steel Plus Epoxy Primer or direct to properly cleaned metal.

PHYSICAL PROPERTIES

WEIGHT PER GALLON	8.85 LBS.
SOLIDS BY WEIGHT	39%.
SOLIDS BY VOLUME	34.5%.
RECOMMENDED DFT	.5 to 1.0 mils
INDUCTION TIME	NONE
WET FILM TO ACHIEVE DFT	1.5 to 3 mils

THEORETICAL COVERAGE

.1 Mil DFT 1100 to 550 sq. ft./gallon

PRACTICAL COVERAGE.1 Mil DFT
.RECOMMENDED DFT 1100 to 550 sq. ft./gallon

DRY TIMES . 70° F - 80° F (21° - 27°C) AND 50% RH	Tack Free	20-60 minutes
	Handle	2-4 hours
	Recoat	1 hour after dry to touch
	Fully Cured	1 hour after dry to touch
	Heat Cure	175 degrees F for 30 minutes after a 15 minute flash time

POT LIFE	4 hours with no reduction of gloss (subject to temperature and humidity conditions)
DRY HEAT RESISTANCE	300°
SHELF LIFE	1 year (single component - not mixed)
PACKAGING	1 gallon, 5 gallon

SURFACE PREPARATION

All Surfaces: Surface prep is one of the most important steps for a successful paint job. If the surface is not adequately cleaned, then a future paint failure could occur. Remove all grease, oils, salts and other contaminants by washing with Burke BC4000 cleaner thinned from 5 parts water to 1 part cleaner up to 9 parts water to 1 part water. More contaminants require a stronger mix. Spray the cleaner on and wipe with clean rags. If you notice any cratering or crawling of the coating on application, STOP and rewash entire surface. Extremely smooth or slick metal may require scuff sanding for maximum adhesion. 1 year (single component - not mixed)



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Why Bio Shield Tech?

We Can ...

- Assist in choosing the appropriate products for your project
- Assist in bid preparation during the bidding process
- Provide square footage pricing
- Assist you in marketing antimicrobial technology to your customers
- Communicate with architects, specifiers, and design engineers on your behalf
- Recommend the appropriate equipment for spec compliance and for "Shop-Application"
- Assist in securing third party lab testing for efficacy after product application

Technical Information

***Agion® silver based compounds are NSF Certified, FDA Listed, And EPA Registered for .
or Food, Water, and HVAC Applications.***

Silver Bullet AM® SPECIFICATIONS

Impact Resistance ASTM D2794-93:160°# Reverse

Cross Hatch Adhesion ASTM D3359, Method B. Rates 5B on steel and aluminum

Pencil Hardness ASTM D3363: 6H

Mandrel Bend ASTM D522, Method B: Pass 1/8" Bend

Sag Resistance ASTM D4400: No sag at 10 mils

Cleaning/Thinning Solvent Water

Humidity** ASTM D4585: 1500 Hours, no blisters after 1000 hours

Salt Spray** ASTM B-117: 1500 Hours, no blisters, no undercut

Temperature Range Cured: 40°F to 300°F

Odor Little to none

VOC Content 143 g/l or 1.19 #/gal

**Tested over Steel Plus Epoxy Primer and Steel Plus CE - 316. Tests with no * were tested as a single coat.

Although our antimicrobial protected coatings help to protect coated surfaces from microbial growth, Bio Shield does not make any assertion that the products will eliminate the threat of disease-causing organisms. Even with the use of our protective coatings, we strongly recommend that standard hygienic practices be strictly followed.