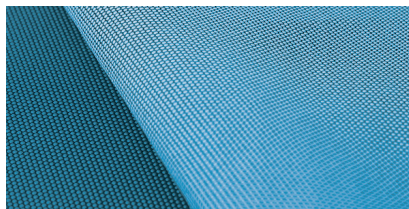
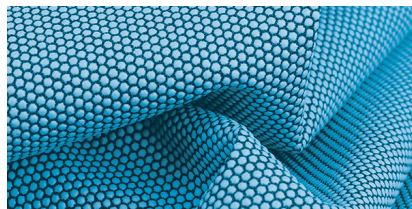
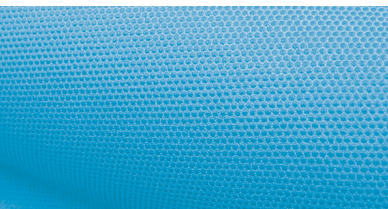




SuperFabric® Am99™

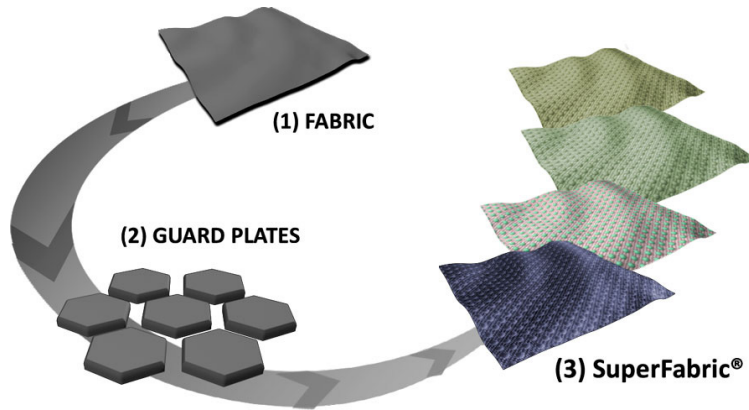
2022



UNRIVALED PERFORMANCE. UNMATCHED DURABILITY. UNLIMITED POSSIBILITIES.

About SuperFabric® brand materials

SuperFabric® technology takes fabric and overlays it with tiny plates (“guard plates”) in a specific arrangement. The gaps between guard plates allow complete flexibility. The geometry, thickness, and size of the guard plates, as well as the fabric, can be varied depending on the desired attributes. SuperFabric® materials are designed to deliver a range of performance features such as abrasion resistance, stain resistance, quick drying, water repellency and more.



- SuperFabric® comes in many
- ▶ choices of color
 - ▶ guard plate configurations
 - ▶ choices of patterns



About SuperFabric® Am99™

*Am99™ is a new line of SuperFabric® products that adds antimicrobial functionality while maintaining the other inherent features you love about SuperFabric® materials.

Kills viruses, bacteria and other microbes, such as mold, mildew, and fungi on its surface



Stain Resistant

Easy to Clean

Abrasion Resistant

Odor Resistant

Durable

MORE

The antimicrobial agent (IONPURE®) used in Am99™ kills and retards the growth of these types of microbes on its surface:

•**VIRUSES** •**BACTERIA** •**FUNGI** •**MOLD** •**MILDEW** •**ALGAE**

Long lasting antimicrobial

The antimicrobial agent used in Am99™ is not just a surface treatment. Rather, it is embedded in the guard plates of Am99™ materials. This creates a very long lasting, durable, antimicrobial material which does not wash out nor diminish its effectiveness with time.

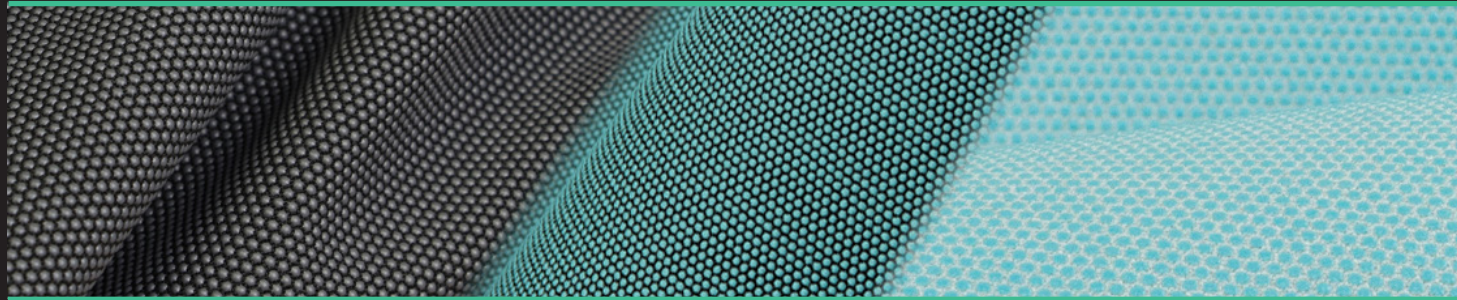


CONFIDENCE

Am99™ TUV-SUD Tested

TUV-SUD is a world-renowned testing and product certification expert with over 1,000 locations. Its testing methods and certification process are well respected around the world.

In August of 2021, Am99™ materials passed the test as antimicrobial fabrics.



ID:700920-880

ID:601200-096

ID:701500-096

KEY FEATURES OF Am99™

- **ANTIMICROBIAL:** Am99™ kills viruses, bacteria, and other microbes such as mold, fungi, and algae on its surface. It does not diminish for many years.
- **REUSABLE / WASHABLE:** Can be washed and cleaned without diminishing its effectiveness.
- **STAIN RESISTANT:** Highly stain resistant to keep products using this material performing and looking like new. It's easy to wash and clean.
- **ABRASION RESISTANT:** Am99™ materials are abrasion and scuff resistant.
- **SLASH RESISTANT:** Am99™ materials are slash resistant, which makes them great for use in seating and similar applications.
- **ENVIRONMENTALLY AND ECOLOGICALLY FRIENDLY:** Unlike conventional antimicrobial fabrics, Am99™ does not leach silver particles into the environment and ecosystem.
- **MANUFACTURED IN USA:** Am99™ is created and manufactured in the USA.
- **CUSTOMIZABLE:** Any SuperFabric® material can be made into an antimicrobial SuperFabric® (Am99™).

CONVENTIONAL ANTIMICROBIAL FABRICS VS Am99™

CONVENTIONAL ANTIMICROBIAL FABRICS:

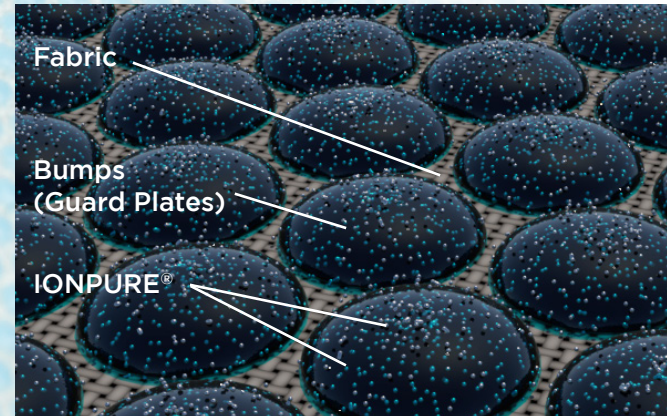
Other antimicrobial fabrics are loaded with silver particles (nanoparticles) which release silver ions that kill microbes. Unfortunately, around 98% or more of these silver particles are wasted due to the very low solubility of silver particles in water. Additionally, they are easily washed away from the fabric or rubbed off with slight contact. This can lead to environmental and ecological problems as well as public health concerns.

Am99™ FABRICS:

Am99™ takes a new and advantageous approach. Am99™ embeds the antimicrobial agent (IONPURE®) into the material instead of coating the fabric like traditional, antimicrobial approaches. This creates a durable, long lasting solution.

It uses no silver nanoparticles, but rather small particles of IONPURE® agent which are very safe to humans and the environment.

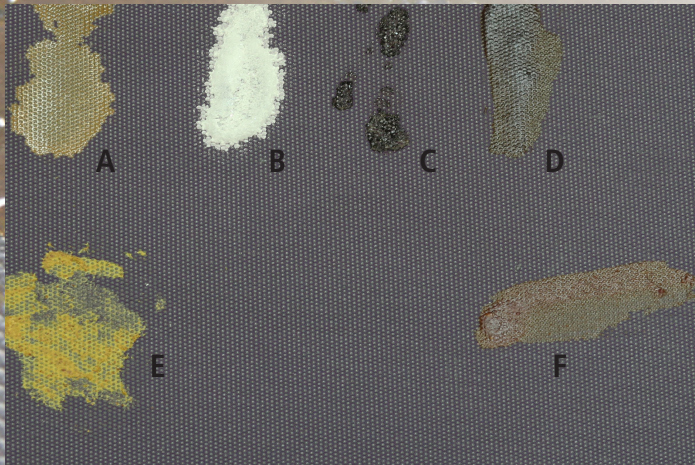
The agent is completely controlled and contained within the guard plate.



STAIN RESISTANCE

The ability of a fabric to protect against a variety of stains is key to long life, fabric aesthetics, and ultimately, customer satisfaction. SuperFabric® materials, including Am99™ offer outstanding stain resistance.

A SuperFabric® Am99™ sample stained



A) Coffee B) Salt Water C) Soy Sauce
D) Barbecue Sauce E) Mustard F) Ketchup

After cleaning with soap, water and brush



EASY TO CLEAN

Food, drinks and other substances are bound to spill on fabrics. They often dry especially in busy public areas such as buses, airports, and movie theaters, to name a few. Even when left to dry, SuperFabric® Am99™ fabrics, like other SuperFabric® materials, can usually be cleaned easily with just a brush and water.



ECOLOGICALLY and ENVIRONMENTALLY FRIENDLY

- ▶ Am99™ does not use silver nanoparticles, which are now becoming an environmental and ecological concern.
- ▶ The encapsulation nature of Am99™ means no harmful antimicrobial agent leaches out into the environment and waterways.
- ▶ Am99™ saves silver which is a precious resource that is being depleted rapidly.
- ▶ Re-usability means MUCH LESS disposal into our landfills and ecologically more friendly.

HOW CAN Am99™ BE USED?

Public areas have many surfaces that can become contaminated by microbes such as viruses, fungi, and bacteria. This can cause surfaces to have an odor, and also damage the surface which results in increased maintenance and replacement cost. Am99™ prevents damage by retarding microbe growth.



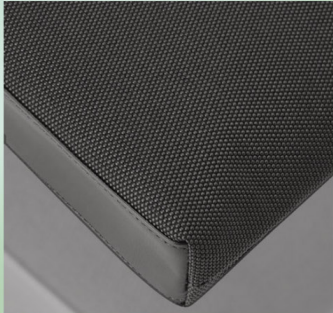
SEATING

Severance Hospital in Seoul, Korea, is using Am99™ in chairs located in the waiting area.

Public seating has hundreds and thousands of contacts and touches per day. Am99™ looks fresh and performs day in and day out.



A few examples of SuperFabric® used in finished seating applications.



SEATING: RESTAURANTS • BARS • CLUBS

Furniture and seating in high traffic areas are subject to lots of wear and tear, in addition to a variety of germs and other microbes. Am99™ fabrics are highly durable, stain resistant, and antimicrobial. It's easy to clean and has beautiful aesthetics, making Am99™ an ideal material for chairs and bar stools.

POTENTIAL APPLICATION



The image shows a clinical or hospital environment. In the foreground, there are several blue chairs and stools with a textured fabric. One stool is a tall, adjustable one with a chrome base and casters. In the background, there is a metal cart with blue containers and a white trash can. The overall scene is clean and professional.

SEATING: MEDICAL CHAIRS • STOOLS

Lots of contact points can lead to microbes growing on a surface and quickly multiplying. Am99™ fabrics can help stop the spread of germs and other microbes.

POTENTIAL APPLICATION



▶ SEATING: THEATERS • AUDITORIUMS

Places with high traffic, potential for spills/stains, and direct skin contact create a challenge for many fabrics. Am99™ fabrics are designed for commercial, high-use environments.

POTENTIAL APPLICATION

▶ SEATING: TRAINS • BUSES • SUBWAYS

Below (left) a bus in Singapore is using seats with SuperFabric® materials for high durability and stain resistance.



POTENTIAL APPLICATION



SEATING: AIRPLANE

Am99™ fabrics can kill germs and viruses on contact. Airplane seating has lots of contact points including the headrest, arms, and seat. By inhibiting microbe growth on their surface, Am99™ fabrics reduce odors, which help keep them fresh and clean.



GOWNS • SCRUBS • MASKS

Products such as scrubs, gowns, and masks made with Am99™ play a key role in reducing microbes, viruses, and other unwanted organisms. They can be lightweight, breathable, stain resistant, and highly durable.

HOSPITAL BEDS

Linens on hospital beds are changed frequently. However, fluids from patients often leak through to the underlying mattress cover. The mattress cover provides protection to the mattress itself. Am99™ can be made into a highly durable, long lasting cover that provides superior protection. This may reduce replacement and maintenance costs for mattress covers and mattresses.

POTENTIAL APPLICATION





EMS • GURNEYS

By their nature, Emergency Medical Services respond to patients needing quick and immediate attention and transportation. Gurneys and other transports have lots of surfaces that make contact. Am99™ may assist in reducing damage to gurneys and transports caused by these contact encounters.

POTENTIAL APPLICATION



▶ LIFTS • STRETCHERS

Equipment such as patient lifts, stretchers, and pads simply can't be replaced often. Am99™ materials are highly durable and stain resistant, and their antimicrobial characteristics may prevent other types of damage to these items caused by microbes, molds and mildews.

POTENTIAL APPLICATION



CURTAINS • PADS • MATS • WHEELCHAIRS

Non-disposables such as privacy curtains, pads, etc. may benefit from Am99™ for both hard and soft surfaces.

POTENTIAL APPLICATION



CONTACT US



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Am99™ is formulated with antimicrobial properties to protect the SuperFabric® itself from stains, odors, and damage caused by bacteria and other microbes. Antimicrobial protection is limited to the SuperFabric® material. Higher Dimension Materials makes no direct or implied claims to protecting users or providing other health benefits.

This revolutionary textile uses IONPURE antimicrobial agent (EPA Registration Numbers 73148-1 through 73148-3 and 73148-5 through 73148-8) embedded into its guard plates, resulting in a durable treatment that does not wash off under normal laundering conditions, does not leach and is highly resistant to being abraded off.

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Am99 is a trademark of HDM, Inc.
IONPURE is a registered trademark of ISHIZUKA GLASS CO., LTD.

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