



# ArcticShield in Brief

- **ArcticShield first began by selling a hunting accessory called the Boot Insulator to catalogers and retailers. The Boot Insulator was designed originally to keep hunters feet warm during extensive periods outdoors. As it's popularity grew customers and buyers continued to press for additional products. ArcticShield eventually made an entire System of Outerwear that ranged from head to toe.**
- **ArcticShield has always believed that their Body Heat Reflective Barrier would work in any category that sells outerwear. After much discussion it was determined that a licensing program would best provide ArcticShield the best opportunity for multi-category growth.**
- **Our goal is to work with the leaders in apparel categories that have respected names and growing businesses and are proud of their product brand. Brands that are excited to tell their customers about features and benefits unique to their brand category through focused marketing efforts.**
- **Branded Companies that want to separate themselves from the "Me-Too" pack of manufacturers are the types of companies that can best utilize our Value Innovation Technology.**



**Can Your Outerwear  
Hold Up Against**

**DryIce?**



# ArcticShield is a Value Innovation

- ArcticShield Technology Offers Value Innovation that Performs
- ArcticShield Technology is a Marketable Advantage Over Your Competition
- ArcticShield Technology is a Cost Effective Added Benefit to Your Brand
- ArcticShield Technology has a Track record of Retail Success that your Brand can Build On
- ArcticShield Technology has a built in Cross Over Consumer Base that already Understands the Benefits of the Technology

# **ArcticShield's exclusive, patented technology provides warmth regardless of temperature or wind chill.**

- **ArcticShield Technology is not a traditional insulation, which is bulky and only slows heat loss; it's a thin multi-layered heat resistant thermal barrier that captures and returns over 90 percent of body heat. ArcticShield Technology is naturally waterproof, windproof, breathable and the unique open cell inner layer helps with moisture management.**
- **ArcticShield provides comfort while exposed to cool temperatures of 50 degrees to bitterly cold subzero temperatures, providing protection from core body heat energy loss ... without the need for extensive layering.**
- **No other technology can match ArcticShield for value innovation. Our technology provides garment thinness while maintaining superior dexterity and warmth in an extensive range of weather conditions and temperatures.**
- **ArcticShield's advanced technology has been proven effective from above the Arctic Circle to temperate regions in the southern United States.**

# How ArcticShield Works



# **How ArcticShield Works**

**The “ArcticShield” barrier is unique in the apparel industry because the true measure of the insulaory properties are based upon human physiology.**

**Human body temperature is relatively a constant 98.6 degrees Fahrenheit whether a person is above the Arctic Circle or on a Tropical Beach.**

**The efficient use of human body temperature is why ArcticShield works so well and while at the same time can be so thin.**

**A warm feeling is maintainable during exposure to weather temperatures that vary throughout any period of exposure.**

**Wearing ArcticShield to outdoor sporting event will not feel uncomfortable as the temperature fluctuates because ArcticShield helps maintain human body temperature.**

# How ArcticShield Works

Below is an example of construction and the encapsulated placement of ArcticShield Technology



**ArcticShield  
Utilizes  
Over 90% of  
Personal  
Body Heat**

# **How ArcticShield Works**

**CLO is a unit of measurement for the insulating value of clothing.**

**A lightweight men's suit has a CLO value of 1.**

**The CLO value 6 oz polyester fill is 1.53.**

**The CLO value of Thermolite is 2.34.**

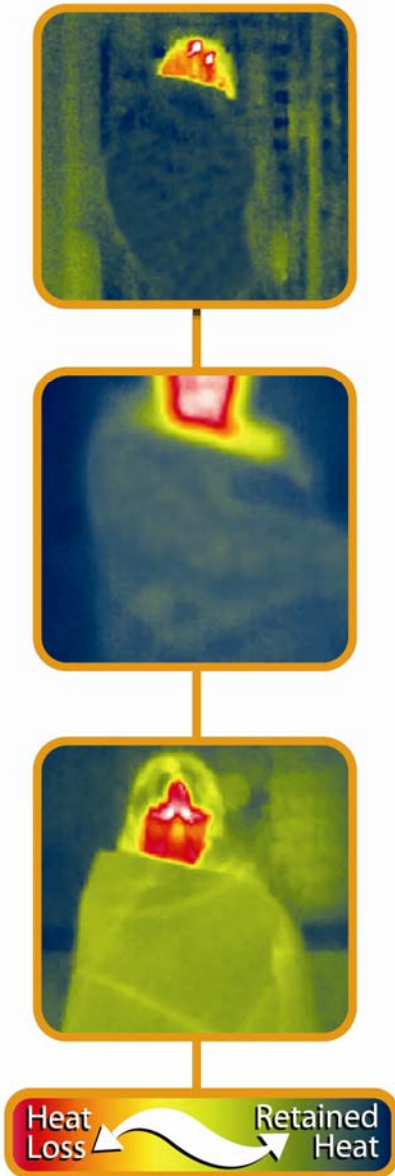
**An Eskimo's Parka has a CLO value of 4.**

**ArcticShield can be mapped into products giving them a CLO range of 3.02 – 4 at only 1/16<sup>th</sup> of an inch and with nearly half the weight!**

# How ArcticShield Works

The “ArcticShield”  
barrier has an  
equivalent R value  
of 8!

Which equals about  
2 inches of  
fiberglass home  
insulation.



# **ArcticShield**

## **Sewing Construction Placement**

### **Recommended Usage Amounts**

**AVERAGE - An average of 1 yard of ArcticShield barrier is recommended per adult garment for average efficiency.**

**LOW ACTIVITY - 1.2 to 1.5 yards or 90% coverage is recommended for garments designed for extended periods outdoors with low activity.**

**HIGH ACTIVITY - Under .8 yards per garment is the lowest effective amount recommended. This amount is useful in garments designed for high activity garments.**

# ArcticShield

## Sewing Construction Placement

Example of ArcticShield  
Placement in Coats designed  
for High Activity



PLACEMENT:  
Sleeves: Top of sleeves about 10"- 11" long, and 16" wide  
Chest and Back: 18" wide x full length

# ArcticShield Placement

## Example of ArcticShield Placement for High Activity Hooded Jackets



**PLACEMENT:**  
Hood: Side of hood only, not center panel  
Sleeves: Top of sleeves about 10-11" long, and 16" wide  
Chest and Back: 18" wide x full length

# How to Tell the Story

- This is an adaptable POS concept that can be used to educate consumers.
- This illustrates our “Dry Ice Demonstration” which communicates the effectiveness of ArcticShield Technology in a real way
- Marketing is essential to success and Advertising and POS costs are responsibilities Licensees are eager to embrace once they understand the market separation that ArcticShield Technology can provide.



## Can Your Outerwear Hold Up Against Dry Ice?

# Ours Can!

We conduct a simple but effective demonstration during live meetings where we place Dry Ice on the outer surface of one of our New Jackets Powered by ArcticShield while a volunteer holds it. The only protection our volunteer has from freeze burn is our thin jacket and its ability to reflect the 98.6 degree body heat coming out of the volunteers hand.

At 109 degrees below zero it is difficult to comprehend how cold Dry Ice is. So, to help in understanding we place a Quarter on the Dry Ice and freeze it in only 10 seconds. As the Quarter freezes it vibrates as the molecules in the Quarter move rapidly together.

During the demonstration our volunteer never experiences cold only a slight cooling sensation even while holding it for several minutes and considering how cold Dry Ice is that's not bad.



**109 Degrees Below Zero  
Dry Ice Demonstration**

# How to Tell the Story

## ArcticShield POS for Coat Sleeve, Bib/Pant Leg




### ArcticShield POS Branding

**Is Highly Distinguishable and Sets ArcticShield Products apart from all others on the rack. Our Sleeve tag is not required but highly recommended for Separation in a Retail Sea of “Me-Too” Products.**


# How to Tell the Story Required ArcticShield POS Hangtag for All Outerwear

**ARC INNOVATIONS** is dedicated to innovating products that improve lifestyles. Whether you're hunting, fishing, working or enjoying some other outdoor event, our products are tested and proven to help you enjoy each day a little bit more.




MADE FROM  
RECYCLED MATERIALS


Patented 6185845  
Other Patents Pending



**ARCTICSHIELD**  
*Stay Warm*



www.arcoutdoors.com



**Blocks Weather & Cold Air Penetration**

**90% or More Body Heat Retention**

**ARCTICSHIELD**  
*Stay Warm*

**More Warmth, Less Bulk Greater Comfort**  
Instead of thick, traditional insulations that merely slow heat loss, ArcticShield utilizes a thin, multilayered heat resistant thermal barrier that captures and reflects more than 90 percent of natural body heat. Less bulk means more range of movement. ArcticShield also is windproof, breathable and helps with moisture management.

**Más calor, menos mayor comodidad a granel**  
En vez de los aislamientos gruesos, tradicionales que retardan simplemente pérdida de calor, ArcticShield utiliza una barrera termal a prueba de calor fina, de varias capas que capture y refleje el más de 90 por ciento de calor natural del cuerpo. Menos bulto significa más gama de movimiento. ArcticShield también es a prueba de viento, respirable y ayudas con la gerencia de la humedad.

**Plus de chaleur, moins de plus grand confort en bloc**  
Au lieu des isolations épaisses et traditionnelles qui ralentissent simplement la perte de chaleur, ArcticShield utilise une barrière thermique anti-calorique mince et multicouche qui capture et reflète plus de 90 pour cent de la chaleur normale de corps. Moins de volume signifie plus de mobilité. ArcticShield est également protégeant du vent, respirable et des aides avec la gestion d'humidité.

# How to Tell the Story Required ArcticShield POS Hangtag for Accessories





**TECHNOLOGY INTRODUCTION**



## **What we set out to deliver**

- **Solid anti-odor performance with life-of-the-fabric durability**
- **Effective Silver based anti-odor and microbe managing technology in man-made fibers (polyester, polypro, nylon, polyurethane), natural fibers (cotton)**
- **No negative impacts on fiber or fabric manufacturing systems**
- **Unlimited fabric designs**

# Silver Advantages

- **Silver is completely non-toxic, tasteless, internally and externally, no allergic reaction has been recorded.**
- **Silver has been used in the US Military and in the Medical industry for several decades to significantly reduce the length and severity of many bacterial infections and to control odor.**
- **Apparel with integrated X-System technology is safe and similar to wearing silver jewelry of the highest purity level. This is a much preferred alternative to wearing textiles incorporating chemical poisons to control odor causing microbes.**
- **Unlike chemical antimicrobials silver can be used for an indefinite period without fear of microorganisms developing a tolerance to it. Microorganisms depend on specific enzymes to breathe. Minuscule silver ions disable these enzymes, cutting the air supply to the microorganisms with cytopathogenic results. Since the microorganisms are suffocated rather than poisoned, resistant strains fail to develop.**

# How X-System Technology Works

- **The mechanism is simple:**

**Silver surfaces release silver ions**

**Moisture aids in the transport of the ions to bacteria**

- **You also need to know:**

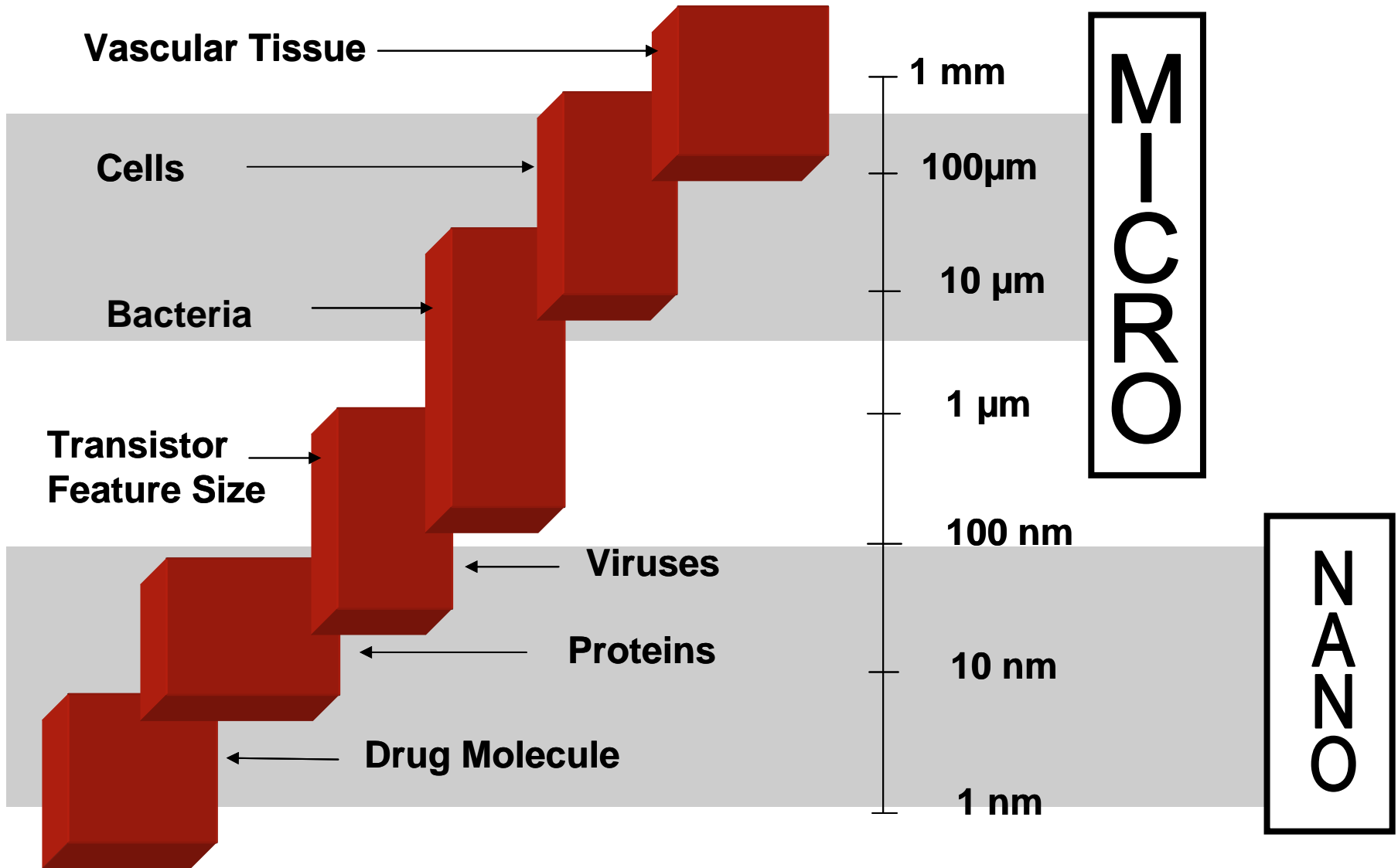
**X-SYSTEM particles maintain colloidal suspension**

**X-SYSTEM will bond to polymer matrices and cotton**

**X-SYSTEM nanoscale particles create enormous surface area**

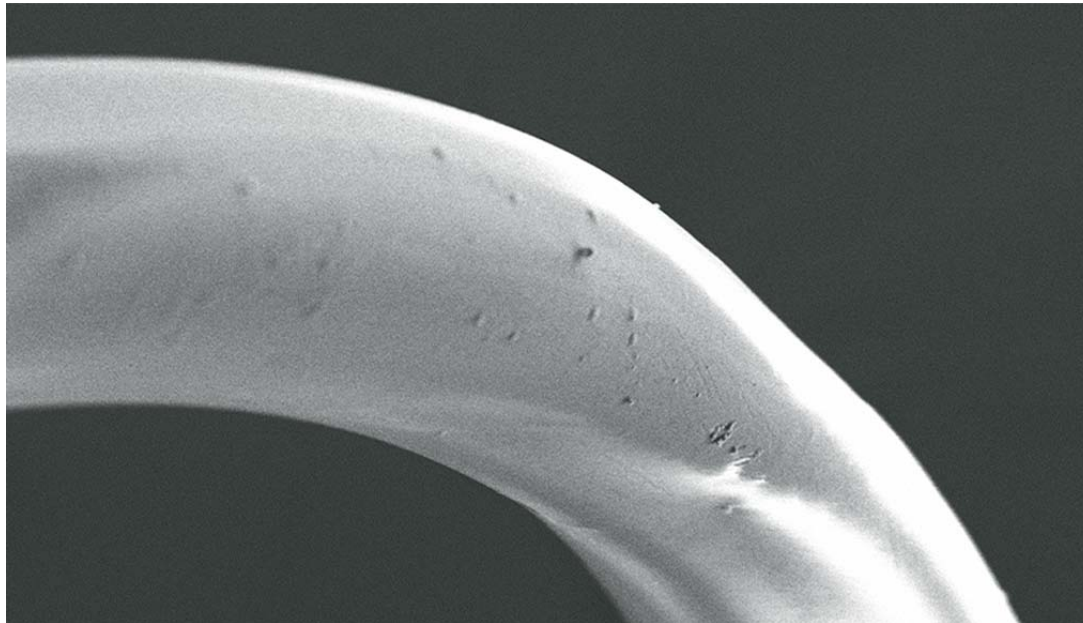
# Size Range of Nano-Structures

## Range of Micro and Nanotechnology





## **Polyester at 2,650x Magnification**

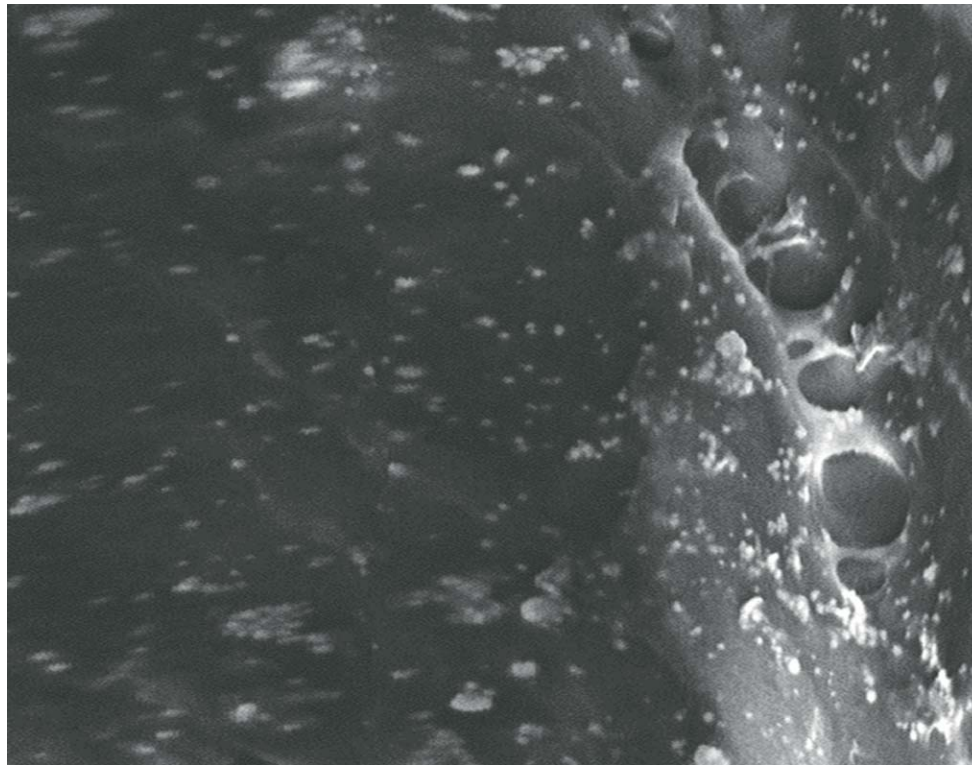


**Even at 2,650x, X-SYSTEM is Indistinguishable from Standard Polyester**

**(Scanning Electron Microscope can't image polyester at 40,000x – it melts!)**



## **Enhanced Cotton at 40,000X**



**At 40,000x, evenly distributed Silver particles are clearly visible**

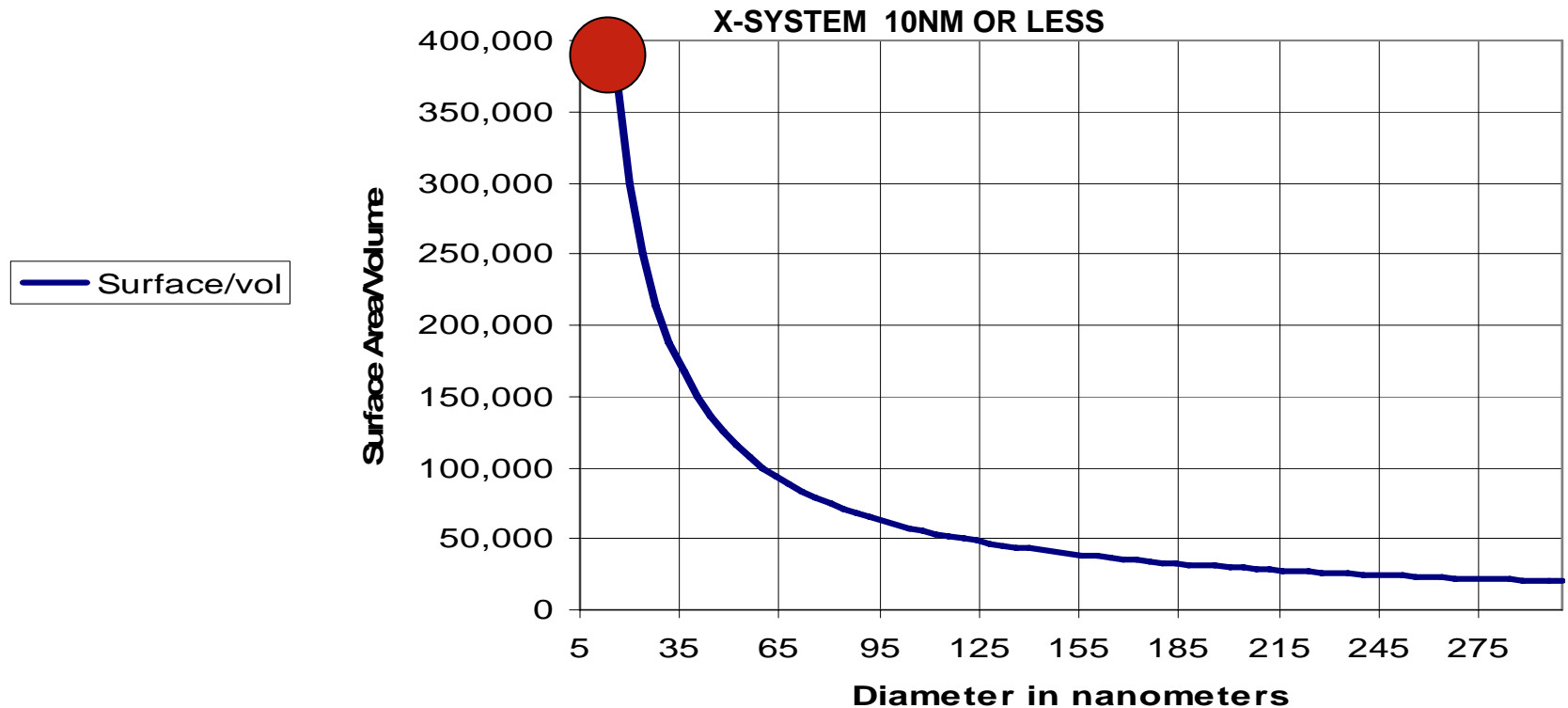
# What does this mean to you?

- **With tremendous microbe management efficacy and a history of safe and successful use, silver particles are a viable substitute for chemical applications.**
- **X-System Technology can provide a high concentration of stable particles in large quantity at a remarkable affordable cost to licensed mills.**
- **An assortment of fabrics are ready or possibly developed for production for licensed manufacturers.**
- **X-System Technology can improve the manufacturing process by replacing current hazardous constituents and processes resulting in reductions in energy, materials and waste generation.**
- **X-System Technology allows materials to be produced on a smaller scale but in much higher volumes and lower costs than traditional materials and manufacturing processes.**

# SURFACE AREA TO VOLUME

## Surface Area to Volume

Highest possible conversion of mass to surface area

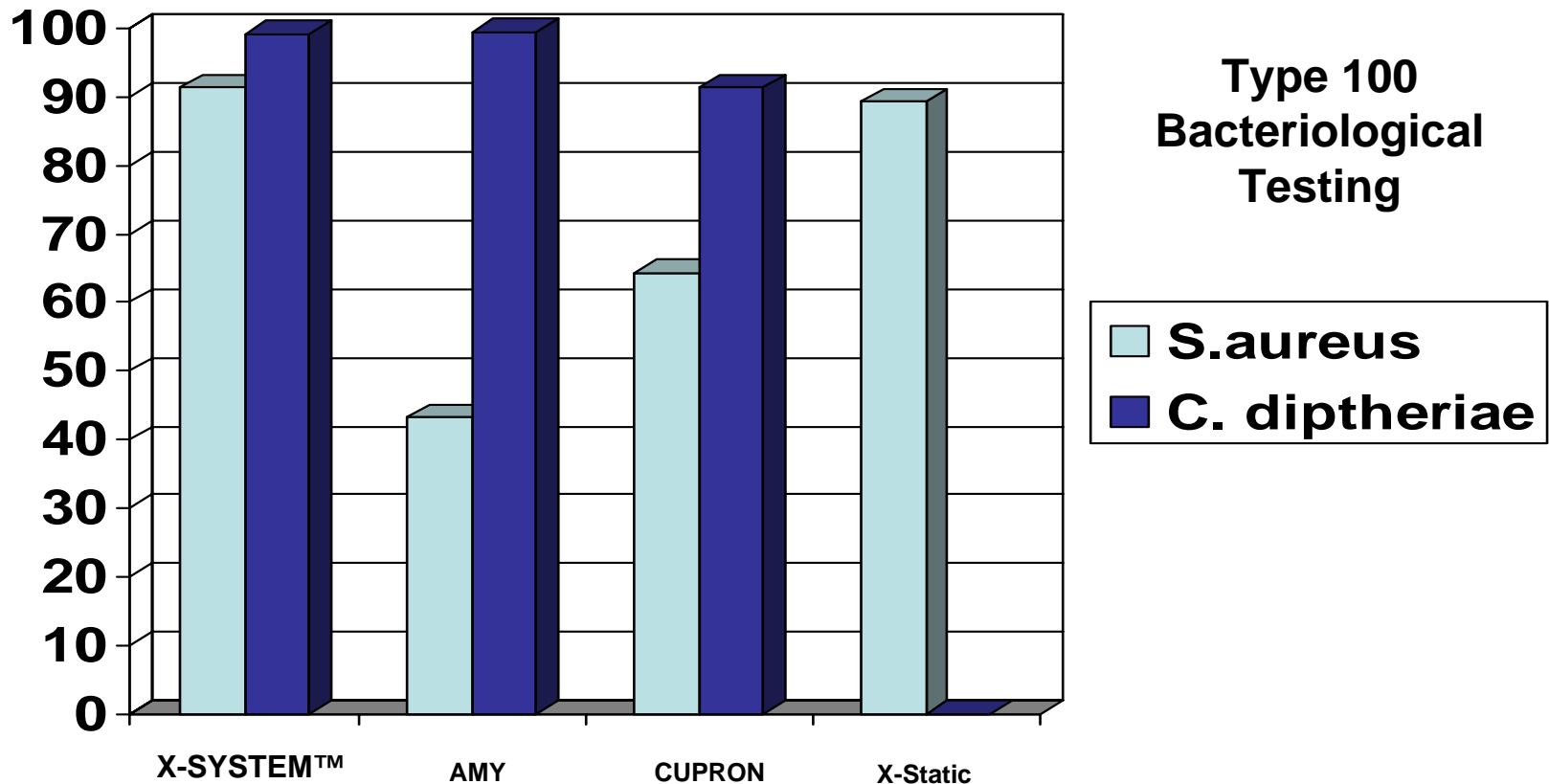


# X-SYSTEM Comparisons

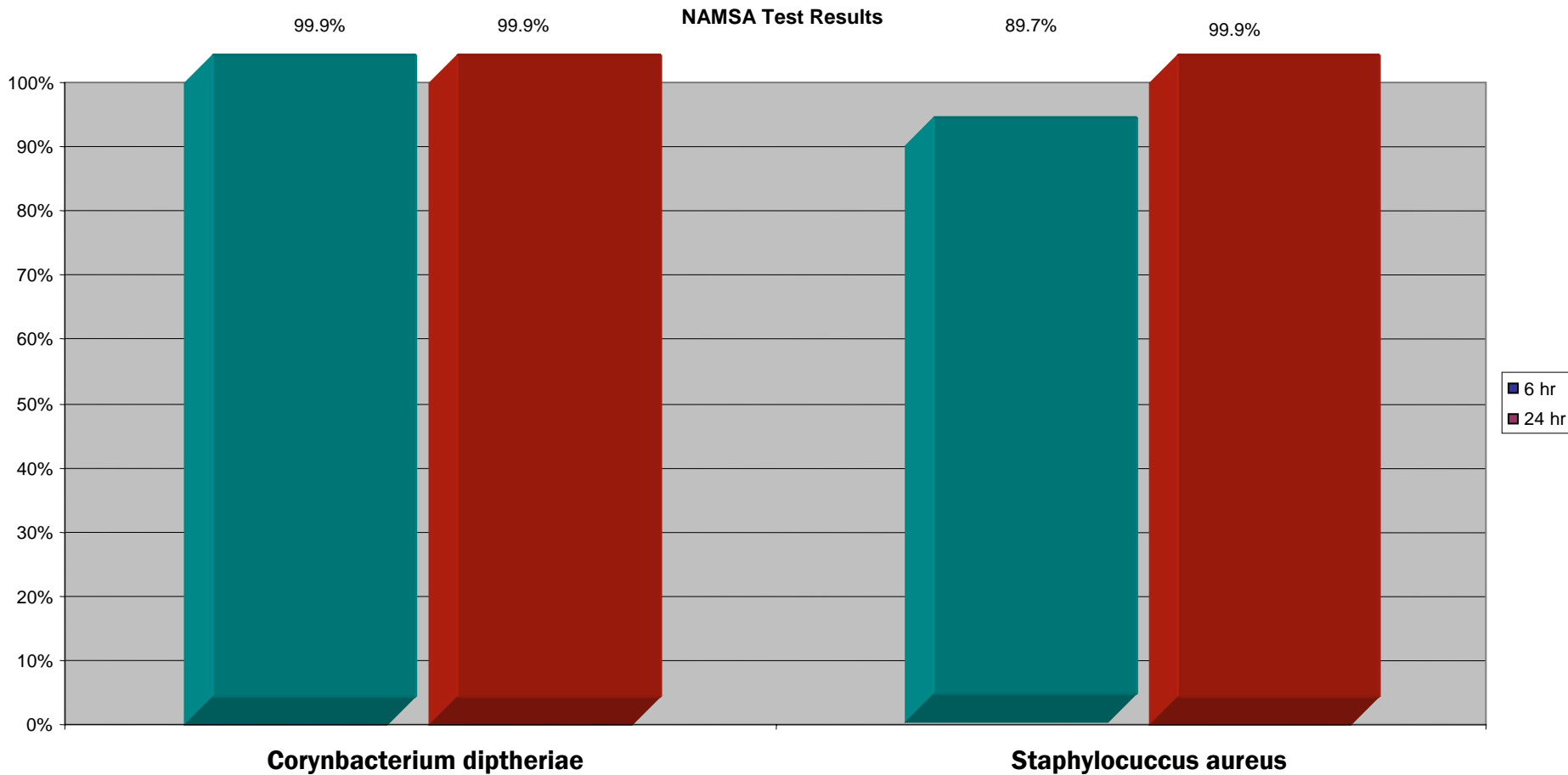
<b>X-SYSTEM</b>	<b>Silver-Coated Nylon Fiber</b>	<b>Zeolyte-based Additives</b>	<b>Silver Powders (micron)</b>
<ul style="list-style-type: none"> <li>• <b>&lt;10 nm proprietary nanostructure</b></li> <li>• <b>Cotton and Man-made fibers</b></li> <li>• <b>Permanent</b></li> <li>• <b>No impact on manufacturing</b></li> <li>• <b>No impact on fabric design</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>1980's technology</b></li> <li>• <b>Nylon/Blends only</b></li> <li>• <b>Silver abrades easily</b></li> <li>• <b>Brittle, weak fiber</b></li> <li>• <b>Expensive</b></li> <li>• <b>5% or lower coverage</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>1980's Technology</b></li> <li>• <b>Polymer only</b></li> <li>• <b>Available silver?</b></li> <li>• <b>Expensive</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Technology?</b></li> <li>• <b>Polymer only</b></li> <li>• <b>No bond: Abrades easily</b></li> <li>• <b>Effectiveness?</b></li> <li>• <b>Clumps - Non-uniform</b></li> <li>• <b>Can clog extruders</b></li> </ul>

# High Performance Anti-odor

- Every X-SYSTEM fabric is built following a specific process recipe and is subjected to rigorous testing to ensure that it contains the precise chemistry needed to be effective.
- Consistent quality is ensured through ongoing testing of fabrics in independent testing



# Independent testing results



# Example of Required Tags

**X SYSTEM** The Complete Odor Elimination System™

**ODOR/SCENT CONTROL...** for the life of the garment  
**MOISTURE MANAGEMENT...** sweat all day, the garment wicks away  
**LESS CLEANING...** wash less throughout the season

**X SYSTEM**  
SMART APPAREL

**ARC**  
INNOVATIONS

1700 W. Albany, Ste. A  
Broken Arrow, OK, 74012  
www.arcoutdoors.com

**X SYSTEM** The Complete Odor Elimination System™

ARC INNOVATIONS... is dedicated to innovating products that improve lifestyles. Whether you're hunting, fishing, working or enjoying some other outdoor event, our products are tested and proven to help you enjoy each day a little bit more.

MADE FROM RECYCLED MATERIALS

**X-SYSTEM ODOR/SCENT CONTROL PLUS**

**X SYSTEM**

**Feature Details:**

**X-System controls odors and scents with dual-action technologies.** Nano silver controls human odor by inhibiting growth of the source - bacteria. Existing odors and scents are eradicated by a neutralizer.

**DUAL ACTION**  
Dual-action nano particles, a neutralizer & Ag+

**QUICK DRY**  
**Breathable**

**ODOR/SCENT CONTROL PLUS:** uses silver (Ag+) along with a neutralizer to help keep you and your clothing free from odors and scents.

**Odor/Scent Control...** for the life of the garment  
**Moisture Management...** sweat all day, the garment wicks away  
**Less Cleaning...** wash less throughout the season

# ARC Licensing Process

- **Step 1: Signed NDA contract.** The signed NDA should be returned by FAX JT Griffin at (918)-828-0258.
- **Step 2: Once the NDA has been submitted the following can be provided for your review.**
  - 1) **Pricing Chart**
  - 2) **License Application and Schedule A**
  - 3) **Sample Product**
  - 4) **Sewing Example**
  - 5) **Sample Yardage**
- **Step 3: A Licensing Application and Schedule A should be completed and submitted along with the following materials to JT Griffin via mail:**
- **A formal request to license on company letterhead**
- **A listing of all products that your company will carry using our technology**
- **A product sample of targeted ArcticShield Technology integration**
- **4 company catalog's or brochures**
- **Licensing Agreement will be prepared and you will be contacted to go over its details. After the Licensing Agreement has been reviewed, it will then be sent to you via UPS ground for your signature. The signed Licensing Agreement should be returned by UPS or FED EX to:**

**ArcticShield Inc.  
5424 S. 99<sup>th</sup> East Ave.  
Tulsa, OK 74146**