



BIOSMART® FAQ

What is BioSmart?

BioSmart is a patent-pending textile technology developed by Milliken & Company®, which binds EPA-registered chlorine to fabric to kill bacteria and viruses throughout the workday.

How does the BioSmart technology work?

The BioSmart technology acts as a “middle man” binding chlorine to fabric to produce an antimicrobial garment that will withstand the industrial laundering process.

Where can I get BioSmart towels and garments?

BioSmart towels and garments are available for the Food Industry exclusively through G&K Services.

Against which viruses and bacteria is BioSmart effective?

Independent lab testing has confirmed that the chlorine* used with BioSmart is effective in killing 99.9%** of common bacteria and viruses, including:

- E-coli
- Staph
- Salmonella
- Hepatitis A

*When used in accordance with its EPA registered label instructions. **Laboratory conditions using AATCC 100 test method.

How does BioSmart technology kill bacteria and viruses?

Chlorine is the antimicrobial agent used with BioSmart garments and towels, BioSmart alone kills nothing. The “magic” of BioSmart is that it binds chlorine to fabric, turning garments and towels into active killing fields instead of active breeding areas. Under normal conditions, chlorine would dissipate rapidly – in a matter of minutes or hours. Bacteria and viruses consume the chlorine molecules and die.

What products are available with BioSmart technology?

Currently, the BioSmart product line includes:

- White knot-button 65/35 poly-cotton chef coats
- White and light blue 100% spun-poly butcher coats
- White and 100% spun-poly butcher wraps
- White 100% spun poly bib aprons
- Black 100% spun poly waist aprons
- White 65/35 poly-cotton shirt
- White 65/35 poly-cotton pants
- BioSmart 17”x20” white with blue and green stripes terry towel

How long will BioSmart technology last?

The BioSmart technology is effective for the life of the garment.



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Why does BioSmart technology use chlorine to kill bacteria and viruses?

Chlorine is a commonly accepted antimicrobial agent in the Food Industry and its benefits are widely known and understood.

Does BioSmart smell like bleach?

Not specifically. BioSmart technology binds chlorine at the molecular level and emits a “fresh, clean” scent.

Is BioSmart hypo-allergenic?

BioSmart technology has not been tested for allergens. If an allergic reaction is suspected, the individual should avoid continued use of a BioSmart treated product.

Do I have to change my sanitizer or use a special BioSmart sanitizer?

BioSmart technology is designed to enhance your existing Standard Operating Procedures (SOPs), GMPs or HACCP plan and does not require a special sanitizer.

Does a BioSmart towel or garment replace my need for sanitizer?

BioSmart technology is designed to enhance your existing sanitization program, not replace it.

Does a BioSmart towel need to use a sanitization bucket?

Yes, BioSmart towels should be utilized in accordance with your existing sanitization protocol.

Has the USDA and FDA approved the use of BioSmart?

BioSmart technology is not an active antimicrobial; rather it is a stabilizer of EPA-registered chlorine bleach.

Is BioSmart safe to use with all sanitizers?

Chlorine-based sanitizers are ideal for use with BioSmart technology; however, BioSmart technology is effective with all types of sanitizers, including ammonia-based sanitizers. Incorporating BioSmart technology does not require changes to your existing sanitizer or your sanitization protocols.

Will the chlorine used with the BioSmart technology react with an ammonia-based sanitizer?

Lab testing results of outgas (vapor) testing determined that the chlorine used with BioSmart technology does not react with an ammonia-based sanitizer.

Will the chlorine used by with BioSmart technology bleach out clothes, underclothes or tablecloths?

The chlorine used with BioSmart technology is bound to the fabric at the molecular level; therefore, the chlorine should not bleach clothes, table linens or other fabrics, whether wet or dry. However, a heavily concentrated chlorine based-sanitizer may discolor these fabrics regardless of the BioSmart technology and should be used in accordance with existing Standard Operating Procedures.

How many parts per million (PPM) of chlorine does BioSmart require?

BioSmart technology was developed to retain a 300 PPM chlorine count or greater. Maximum charge is ~800 PPM.



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Will BioSmart technology leave a residue on surfaces?

Both the BioSmart technology and the chlorine molecules are bound to the fabric and will not leave a chemical residue on surfaces; however, terry towels do produce lint and BioSmart towels may deposit a lint residue on surfaces. Milliken tested BioSmart towels wiped on a hard surface for residual chlorine deposited on the surface. The process & results are summarized below.

Procedure:

- A BioSmart towel was fully charged and tested for bound chlorine (~800 ppm).
- A hard surface counter (white in color) was selected and moistened with water.
- The charged towel was used to vigorously scrub the counter and dry the surface.
- The countertop was immediately checked for chlorine residue with an indicator dropper.
- The BioSmart towel was allowed to dry and then titrated for residual chlorine (~800 ppm).

Results:

- No residual chlorine could be detected on the counter.
- Measurements show that the towel retained practically all of the originally bound chlorine.

Are there other products available with BioSmart technology?

Additional products featuring BioSmart may be available. Please consult with your G&K Services customer representative for additional product availability.

What if I need a custom BioSmart product?

Custom products may be available, depending on your account parameters. Please consult with your G&K Services customer representative for a custom-product program.

Is BioSmart really necessary?

BioSmart provides an added level of protection. Textiles are known to harbor bacteria. BioSmart extends the capabilities of EPA-registered chlorine bleach – a proven hygienic agent that does not promote resistant microbes – to maintain an effective antimicrobial barrier against contamination. With the rise of cross-contamination incidences in food processing and handling, every step taken to mitigate the risk of cross-contamination is a step in the right direction.

Why is BioSmart processed with EPA-registered bleach?

BioSmart garments and towels are processed with a chlorine solution that has been registered with the Environmental Protection Agency. To be registered, the manufacturer conducted extensive testing to confirm the 99.9%** kill rate for E-Coli, Staph, Salmonella and Hepatitis A and submitted those results to the EPA to support its claims.

*When used in accordance with its EPA registered label instructions. **Laboratory conditions using AATCC 100 test method.

How long can I use BioSmart garments and towels?

BioSmart garments and towels are designed for use throughout the workday, and should be used in accordance with your existing Standard Operating Procedures (SOPs) or sanitization program.



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Is BioSmart irritating to the skin?

BioSmart fabrics are non-irritating to the skin and have passed the ISO skin irritation and skin sensitivity tests.

If I already use a sanitization bucket, why should I use BioSmart?

BioSmart technology provides an additional layer of protection in your food safety program. Well trained, well meaning employees may still make mistakes in following your standard operating procedures or food safety protocols. BioSmart provides the assurance that your towels actively kill germs, instead of breeding them. BioSmart is especially valuable for aprons, coats and other garments that do not regularly visit the sanitization bucket throughout the workday, yet may contribute to an increased risk for cross-contamination.

Will BioSmart technology work without water?

Yes, BioSmart technology is designed to work wet or dry, making it an ideal technology for garments (which do not visit a sanitization bucket) as well as towels.

If I use a chlorine-based sanitizer, will it recharge my BioSmart towels?

BioSmart is charged with EPA-registered chlorine* in the industrial laundering process. G&K Services uses proprietary wash formulas and Standard Operating Procedures (SOPs) to process the BioSmart garments and towels to maintain the technology's integrity and efficacy.

*When used in accordance with its EPA registered label instructions.

Would OSHA consider BioSmart as an article or a chemical requiring an MSDA?

OSHA would consider BioSmart as an article. Please consult with your G&K Services customer representative for supporting documentation.

Will BioSmart towels in water alter the pH?

No, there is not enough chlorine by weight to impact the pH in a significant way.

How does autoclaving impact BioSmart technology?

Lab testing has demonstrated no negative impact of autoclaving on BioSmart technology.