



ALEXIUM

SPECIALTY CHEMICALS AND SOLUTIONS

Annual General Meeting

MD/CEO Presentation

November 14, 2018

INTRODUCTION

Executive Leadership Team



Bob Brookins

Managing Director &
Chief Executive Officer



Jason Lewis

Chief Financial Officer



Allen Reihman

Chief Commercial Officer

INTRODUCTION

Board of Directors



Sue Thomas

Non-Executive
Chairwoman



Claire Poll

Non-Executive
Director



Rosheen Garnon

Non-Executive
Director



Stephen Cheney

Non-Executive
Director

INTRODUCTION

Corporate Overview

OVERVIEW OF ALEXIUM

- Alexium International is a specialty chemical company with a focus on innovative/proprietary product development
- Operations are based in Greer, South Carolina, USA with registered office in Perth, WA

KEY ASPECTS OF COMPANY'S BUSINESS MODEL

- Target market opportunities where Alexium's product differentiation is clearly established
- Patent-protected technologies
- Product manufacturing is conducted with strategic partners in the chemicals industry

TECHNOLOGY PLATFORMS

The logo for Alexicool features the word "alexicool" in a lowercase, sans-serif font. The "alex" part is white, and the "icool" part is a bright blue color. The background is a dark blue rectangle.


Alexicool® technologies provide a range of heat-absorbing and heat-dissipating products for improved comfort


The logo for Alexiflam features the word "alexiflam" in a lowercase, sans-serif font. The "alex" part is white, and the "iflam" part is a bright red color. The background is a dark blue rectangle.

Alexiflam® technologies are innovative flame retardants for application to a broad range of consumer, commercial, and military applications

INTRODUCTION

Market Applications of Alexium Technology

	Product Line	Value Proposition	Applicable Markets
	Alexicool® AL Alexicool® AC	High cooling capacity with soft fabric hand	Mattress, top of bed, apparel
	Alexicool® FM	Tailorable cooling capacity, air permeability, and softness	Mattress, top of bed, transportation

	Product Line	Value Proposition	Applicable Markets
	Alexiflam® FR	Patented flame retardant providing a durable finish with a soft fabric hand for synthetic-rich fabrics	Apparel, mattress
Alexiflam® NF	Patent pending product providing exceptional flame retardation with a durable finish	Apparel, mattress, wood	

INTRODUCTION

Foundations for Achieving Profitability

Sustainability Through Innovation

Gain customer confidence and loyalty by enabling them with state-of-the-art products

Partnering with Customer

Work directly with the customer on product design, quality control, and supply chain

Greater Focus on Marketing

Improve brand awareness and focus marketing on benefits to the customer



Leadership Team

Team comprised of professionals with skills/experience for specialty chemical commercialization

Analytical Initiatives

Use technical expertise to clearly demonstrate product value and win customers

Cornerstone Initiatives

Effective project management and leadership to drive strategic initiatives



Alexicool[®] Technology

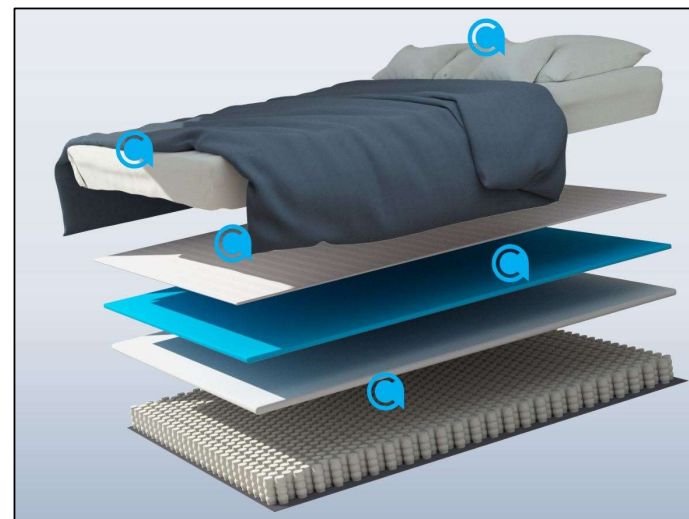
PCM-based products for thermal regulation

Cornerstone Initiative #1

ALEXICOOL® TECHNOLOGY – TEXTILES

Achievements in CY 2018

- ✓ Development of analytical method for assessing cooling effects of PCM on textiles
- ✓ Expansion of Alexicool® products into broad range of mattress components
- ✓ Expansion of Alexicool® products into higher volume mattress tiers
- ✓ Launched new Alexicool® product AC

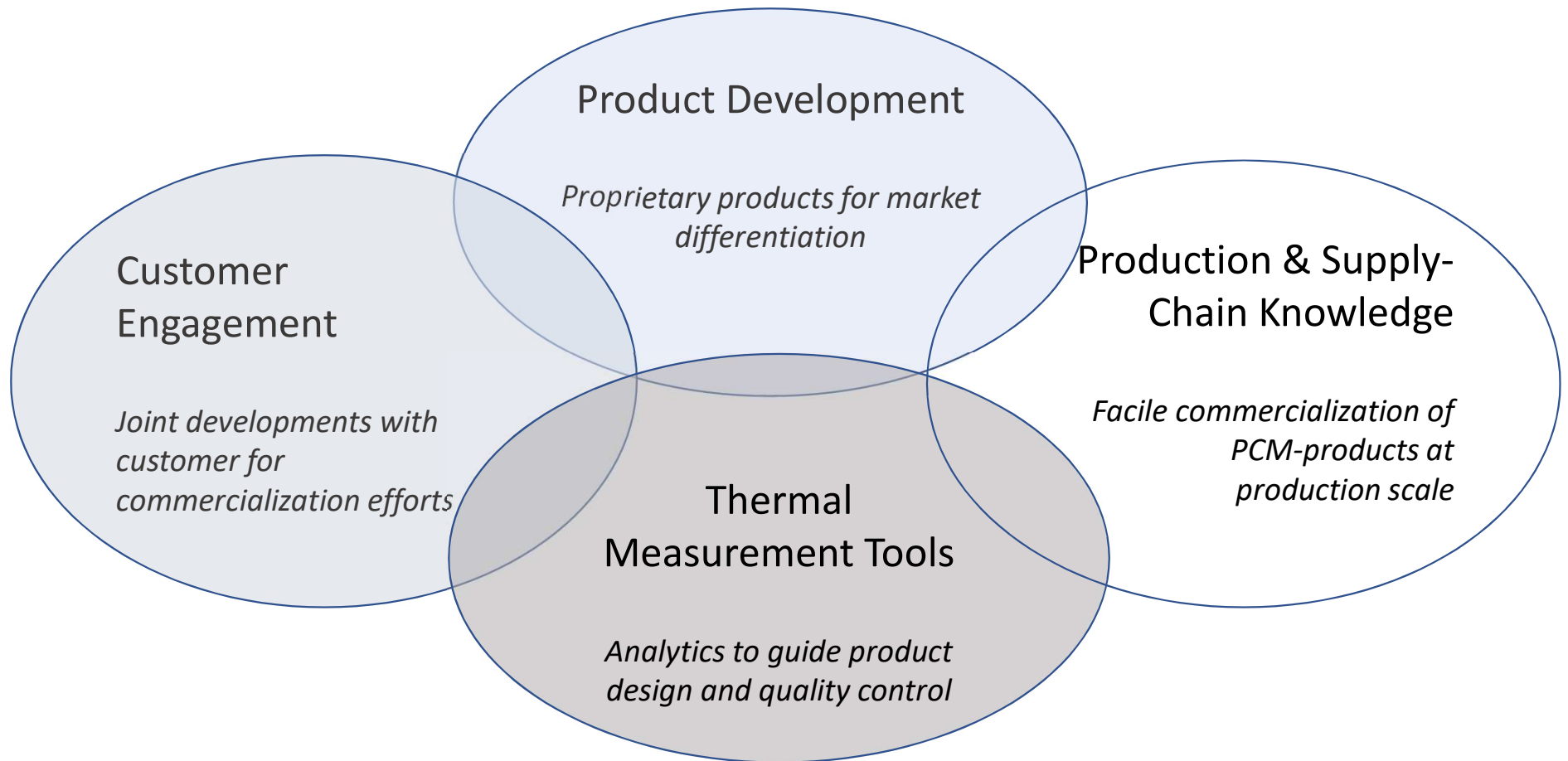


RESULTS OF THESE ACHEIVEMENTS

- Launching a wide range of new mattress products in CY 2019 with Alexicool® technology
- Based on the forecasts provided by Alexicool customers, we believe Alexium will reach positive monthly EBITDA on an ongoing basis in CY 20119. This is driven by volumes associated with CY 2019 product launches and depends on customers meeting their predicted ramp rate.

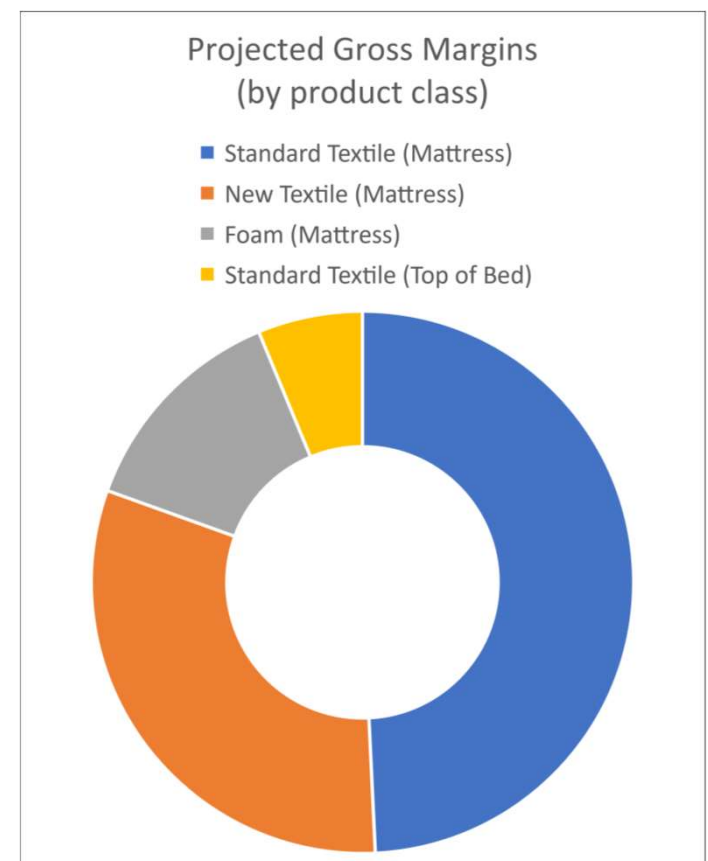
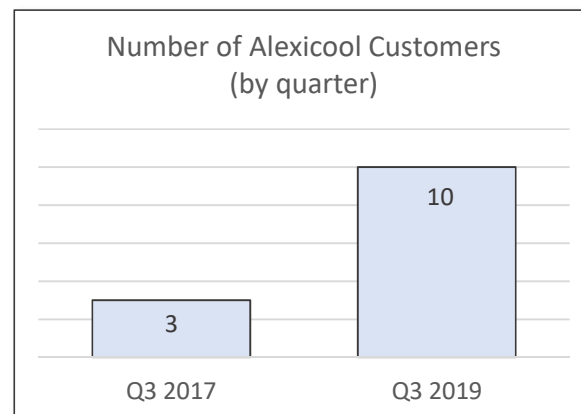
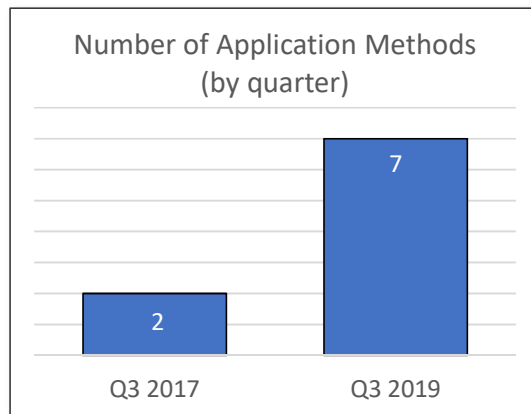
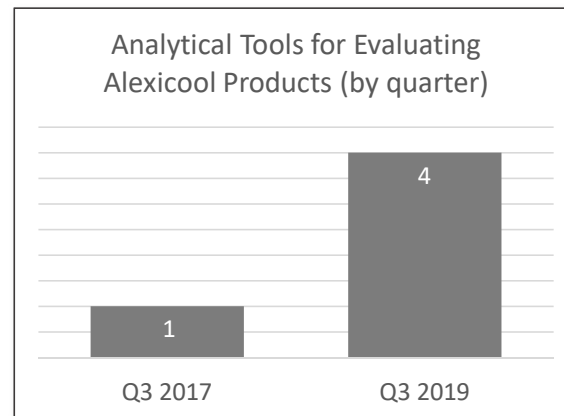
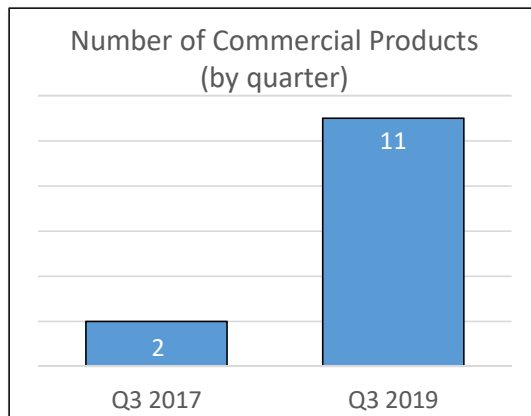
ALEXICOOL[®] TECHNOLOGY – TEXTILES

Platforms for Growth and Achieving Profitability



ALEXICOOL® TECHNOLOGY – TEXTILES

Created Foundation to Poise Alexium for Profitable Growth




ALEXICOOL® TECHNOLOGY

Customer Relationship/Education

Identifying key decision makers and influencers and creating offerings to drive customer confidence and loyalty

- **New branding and logo**, establishing our Alexicool® technology identity in the bedding marketplace
- **A microsite**, better thought of as a “digital introduction” to the product line and its various applications for bedding and multiple components of foam and hybrid mattresses
- **Digital, interactive presentation**, presenting an “app-like experience” to enhance the customer-to-BDE experience, a virtual tour of both a foam and hybrid mattress shows off our capabilities and application possibilities



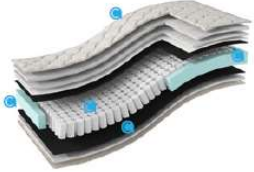
alexicool

Rest Assured

In the world of Phase Change Materials (PCM), alexicool® is a game-changer. It's a proprietary finishing treatment that outperforms the competition across the board. When applied to bedding fabric and mattress components, alexicool delivers unparalleled cooling to minimize heat flow and maximize comfort. You can rest assured you have the most advanced thermal regulation technology solutions on the market.

Our tech services team lets you rest easy
We are committed to service as much as innovation. We'll work with your processes and formulations to make sure you get maximum thermal regulation performance.

- Industry-leading PCM cooling
- Durable, long-lasting performance
- Versatile, flexible finishing technology
- Safe, nontoxic
- Environmentally friendly



alexicool.com 350 West Phillips Road • Greer • SC 29615

ALEXICOOL[®] TECHNOLOGY– TEXTILES

Next Steps and Future Targets

Lead with Innovation and Analytical Rigor

- R&D goals are driven by customer engagement
- R&D pipeline to enable multiple generations of product innovations
- Product innovations have been prototyped to drive 3+ years of customer products

Further Expansion in Mattress and Top-of-Bed Products

- Work with customers to drive market expansion through innovations in...
- Enhanced cooling
 - Cost-effectiveness
 - Environmentally friendly

Translate Successes in Mattress Industry to Other Markets

- While current focus is on mattress and top-of-bed markets, IP and technical know-how has clear translations to other markets
- Apparel
 - Transportation

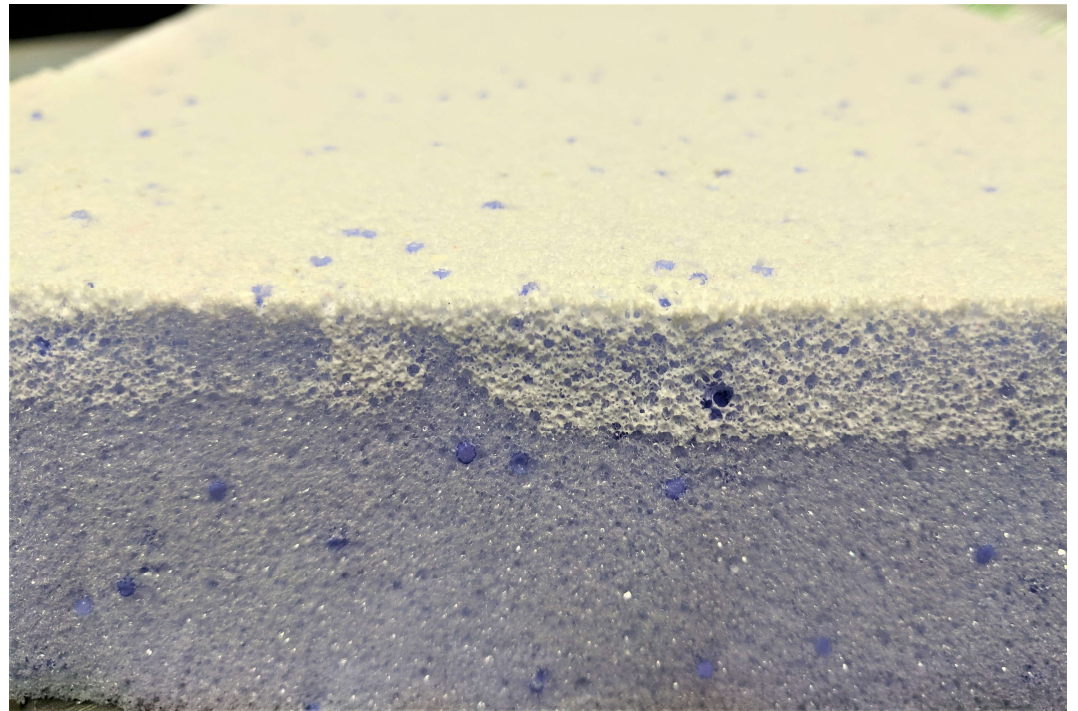
ALEXICOOL® TECHNOLOGY– FOAM

New Cornerstone Initiative

Alexium is launching a new product line in January 2019 with Alexicool® FM – the application of Alexicool technology to foam products

Why focus on Alexicool® FM?

- ❑ Identical market gaps in the foam market as textile
- ❑ PCM applications to foam are the largest market share of PCM applications in mattress and top-of-bed markets
- ❑ Leverage existing customers in these markets

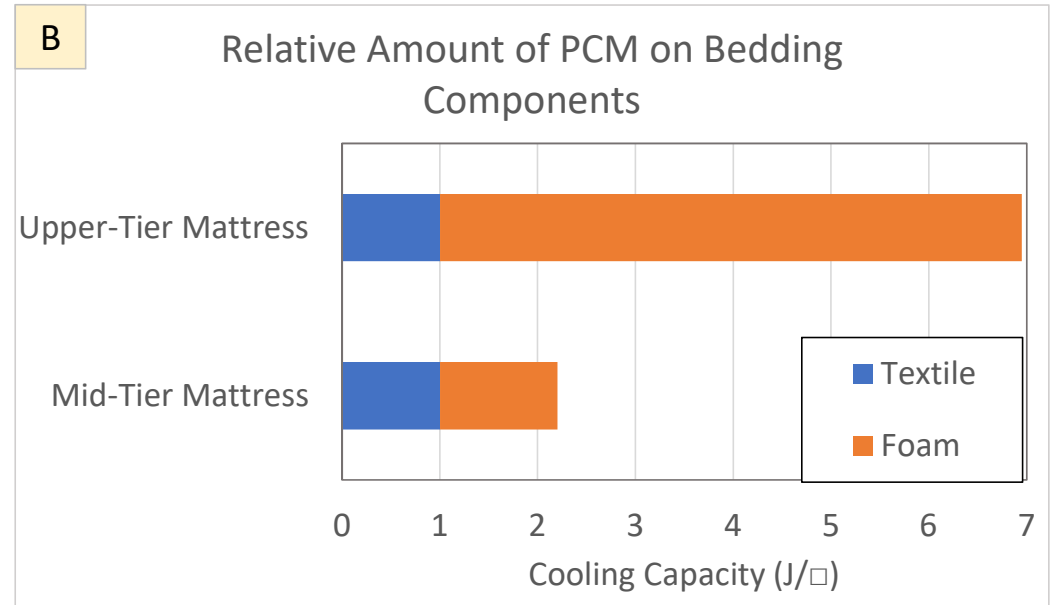
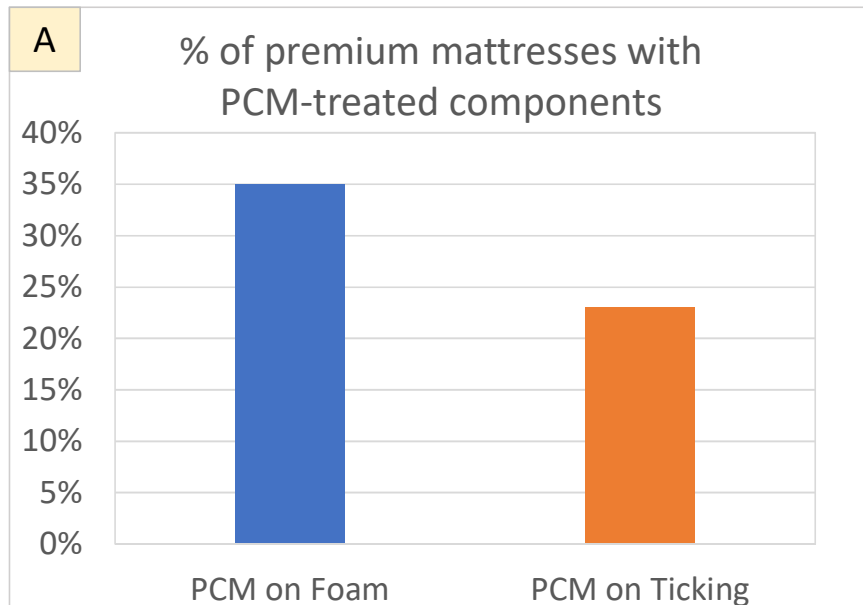


ALEXICOOL[®] TECHNOLOGY— FOAM

Market Opportunity

Our analysis has shown that the market size for PCM on foam is significantly larger than PCM on ticking:

- A. PCM on foam is in 50+% more mattresses than PCM on ticking**
- B. significantly greater quantities of PCM are applied to foam**





Alexiflam[®] FR

Flame-treatment for nylon-cotton fabrics as used in military uniforms

Cornerstone Initiative #2

ALEXIFLAM® FR

Application to nylon/cotton (NyCo) for military uniforms



Alexium FR NyCo

- Effective FR performance on 50/50 NyCo
- Patented chemistry developed by Alexium
- Production viable FR NyCo has been a market gap for decades
- Successes in FR NyCo are a paradigm shift in the market

General Description of Military Evaluation

Review Data Relative to
Target Specifications

Wear Trial for
Field Evaluation

Evaluation of
wear trial data

ALEXIFLAM® FR

Market Opportunities in Military Uniforms

FR-ACU Program – Opportunity Specs

Segment of Military	High-risk personnel (e.g., Special Ops)
Approximate Number of Personnel	~130K ¹
Estimated pounds of fabric (per annum)	2.1M
Key FR Requirements	Pyroman

¹ Based on US Special Forces

Motivation for Adoption by the Military

Seeking a next-generation fabric that address critical flaws of the incumbent

Current Status

Recently passed Pyroman testing and now completing data package for final evaluation

Next Steps

Complete data package in preparation for specifications review

ALEXIFLAM® FR

Market Opportunities in Military Uniforms

General ACU Program – Opportunity Specs

Segment of Military	All branches
Approximate Number of Personnel	~2.2M ¹
Estimated pounds of fabric (per annum)	35.2M
Key FR Requirements	General FR

¹ Based on size of US military

Motivation for Adoption by the Military

Call to industry to provide basic flame retardant protection for all military personnel

Current Status

Recently passed key specifications for this effort and now supporting data review and production scale up

Next Steps

Liaise with partners for transition to production to support 90-day wear trials



Alexiflam[®] NF

Flame-treatment for cotton-rich materials

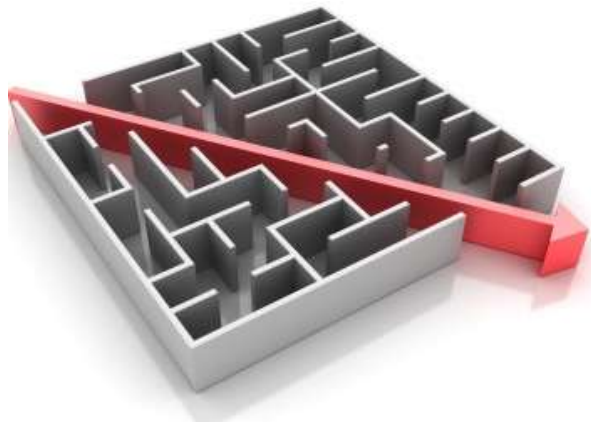
Cornerstone Initiative #3

ALEXIFLAM® NF

Introduction

Alexium recognized that established FR cotton technologies are simply too complicated and require too much nuance.

Alexiflam® NF was developed to address this gap.



BENEFITS OF ALEXIFLAM® NF

- ✓ Simplified Process
- ✓ Durable finish (50+ laundering cycles)
- ✓ Effective flame retardancy
- ✓ Essentially formaldehyde free
- ✓ Environmentally friendly process
- ✓ Low cost process

ALEXIFLAM® NF

Key Market Opportunities

FR sock for bedding

Market: foam mattress

Value of Alexiflam® NF: Potential reduced cost of mattress sock by ~50% relative to market standard

Global Market Size (FR Basis): ~\$10M

FR treatment for fleece

Market: apparel

Value of Alexiflam® NF: Environmentally friendly solution to microparticle release from current standard

Global Market Size (FR Basis): >\$100M

FR workwear & FR uniforms

Market: apparel

Value of Alexiflam® NF: Enable new fabric compositions and designs

Global Market Size (FR Basis): >\$100M

ALEXIFLAM® NF

Application to Fleece Garments

Due to high surface area of fleece fabrics, combustion due to “surface flash” is a critical concern; for flame retardant effects, synthetic fleece made from polyester is widely used

The Invisible Nightmare in Your Fleece

Washing a single polyester jacket can send 1,900 tiny synthetic micro-fibers into waterways, where they can soak up toxins and get eaten by fish. So what is the outdoor industry doing about it?

By: Mary Catherine O'Connor Jul 30, 2015



- Environmentalists have established that a single polyester-based fleece jacket sheds as many as 250,000 synthetic fibers when laundered
- Released fibers persist in the environment and transport toxic organic chemicals into the environment

ALEXIFLAM® NF

Application to Fleece Garments

Due to the high surface area of a cotton-fleece nap, the fabric will burn with a “surface flash” when exposed to an ignition source for even short periods of time (1+ seconds). *This flammability of raised-surface apparel is tested according 16 CFR Part 1610.*

Established FR cotton technologies have not been successful in this application.

Alexiflam® NF is an excellent option for passing this standard

- Effective application without wash step
- Durable treatment
- **Effective at 1+% add on**



4% add on

CONCLUSION

- Key changes have been implemented to strengthen the Company's commercialization efforts
 - Leadership team
 - Engagement with customers
 - Planned pathway to profitability
- Alexicool® technology provides foundation for profitability
 - Alexicool® customers launching a range of new products in CY 2019, providing the foundation for profitability
 - Alexicool® FM (PCM product for foam products) is launching in January 2019
- Alexiflam® products grow the Company to the next level
 - Proprietary flame retardants enable game-changing products for a range of high-value markets
 - Alexiflam® FR treatment for military uniforms has met key FR specifications with the Company's efforts now focused on supporting next steps
 - Alexiflam® NF has a wide range of market opportunities with significant revenue opportunities

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