



ALEXIUM

2019 Gabelli & Company  
Specialty Chemicals Conference Presentation

Jason Lewis, CFO

March 13, 2019

# 2019 Gabelli & Company Specialty Chemicals Conference

1	<b>Company Overview</b>
2	<b>Products and Markets</b>
3	<b>Financial Analysis</b>
4	<b>Management Bios</b>

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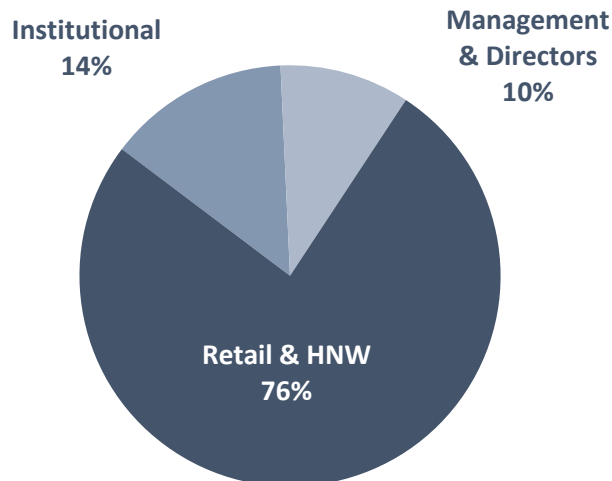


# Company Overview

## 12 Month Share Price (AUD)



## Investor Mix



## Key Statistics (AUD)

ASX Code	AJX
Current Share Price	\$0.115
52 Week High	\$0.295
52 Week Low	\$0.096
Shares on Issue	~345m
Market Capitalisation	~\$40m
Cash (31 December 2018)	US\$6.0m

## Company Highlights

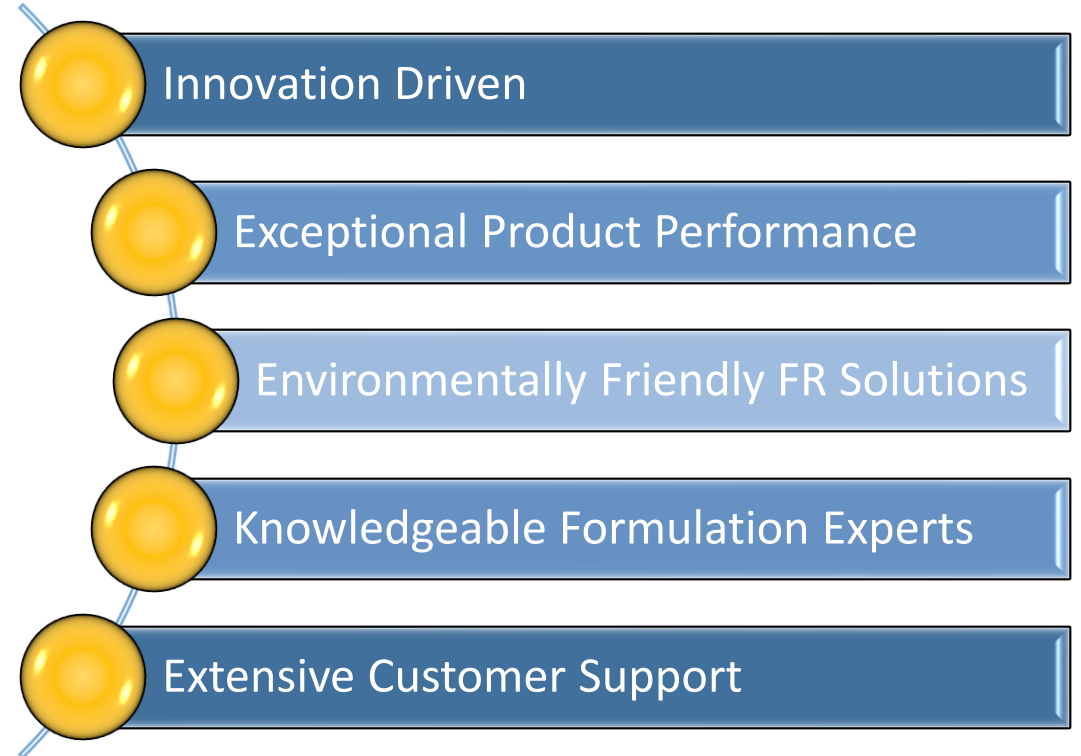
- H1 2019 financial highlights
  - Shedding of low margin business
  - Product Focus Reset and Vision
  - Developed Strategy
  - Rapidly developing route to market for commercialization
  - New Leadership Team from chemical industry

\*Source: Markets and Markets' Report on the Flame Retardant Market: Trends & Forecasts to 2019



# Who We Are

- Alexium International is a **speciality chemicals innovator** headquartered in Greer, South Carolina, USA
- **Cost effective, patented products** for both textile and non-textile markets
- Focus on **high-performance, environmentally friendly, non-hazardous Flame Retardants (FR) and Phase Change Materials (PCM)**
- **High-Touch customer relationships** with customer industry experienced salesforce
- **De-risking commercialization** with several routes to market
- Global chemical markets for FR and PCM total **US\$9.0B** and **US\$1.0B per year** respectively




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# Market Applications of Alexium Technology

	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

	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



# Alexiflam<sup>®</sup> FR

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

Cornerstone Initiative #1

# ALEXIFLAM® FR

## Application to nylon/cotton (NyCo) for military uniforms

### Alexiflam®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 <sup>1</sup>
Estimated pounds of fabric (per annum)	2.1M
Key FR Requirements	Pyroman

<sup>1</sup> 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 <sup>1</sup>
Estimated pounds of fabric (per annum)	35.2M
Key FR Requirements	General FR

<sup>1</sup> 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<sup>®</sup> NF

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Flame-treatment for cotton-rich materials

Cornerstone Initiative #2

# 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 to 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

# Alexicool® Technology

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PCM-based products for thermal regulation

Cornerstone Initiative #3

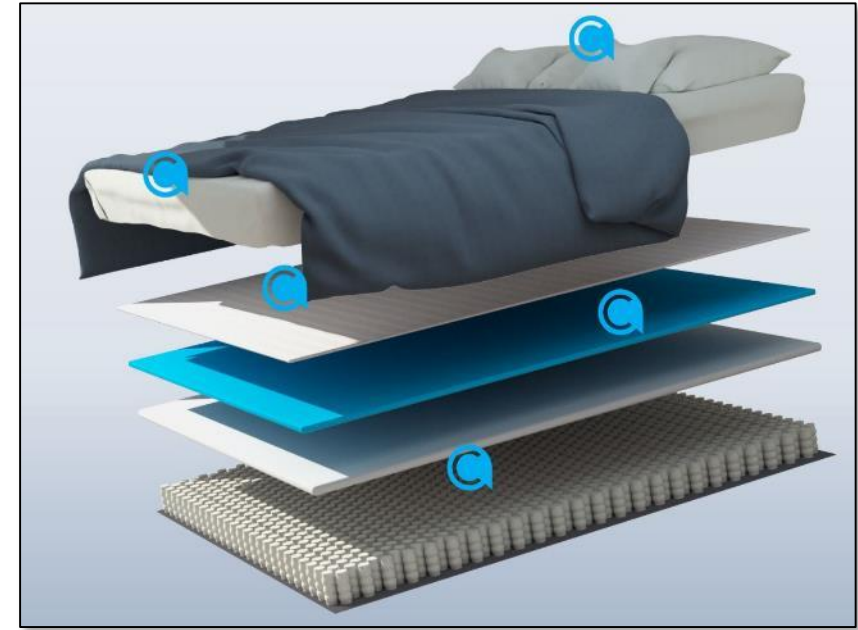




# ALEXICOOL® TECHNOLOGY – TEXTILES

## 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

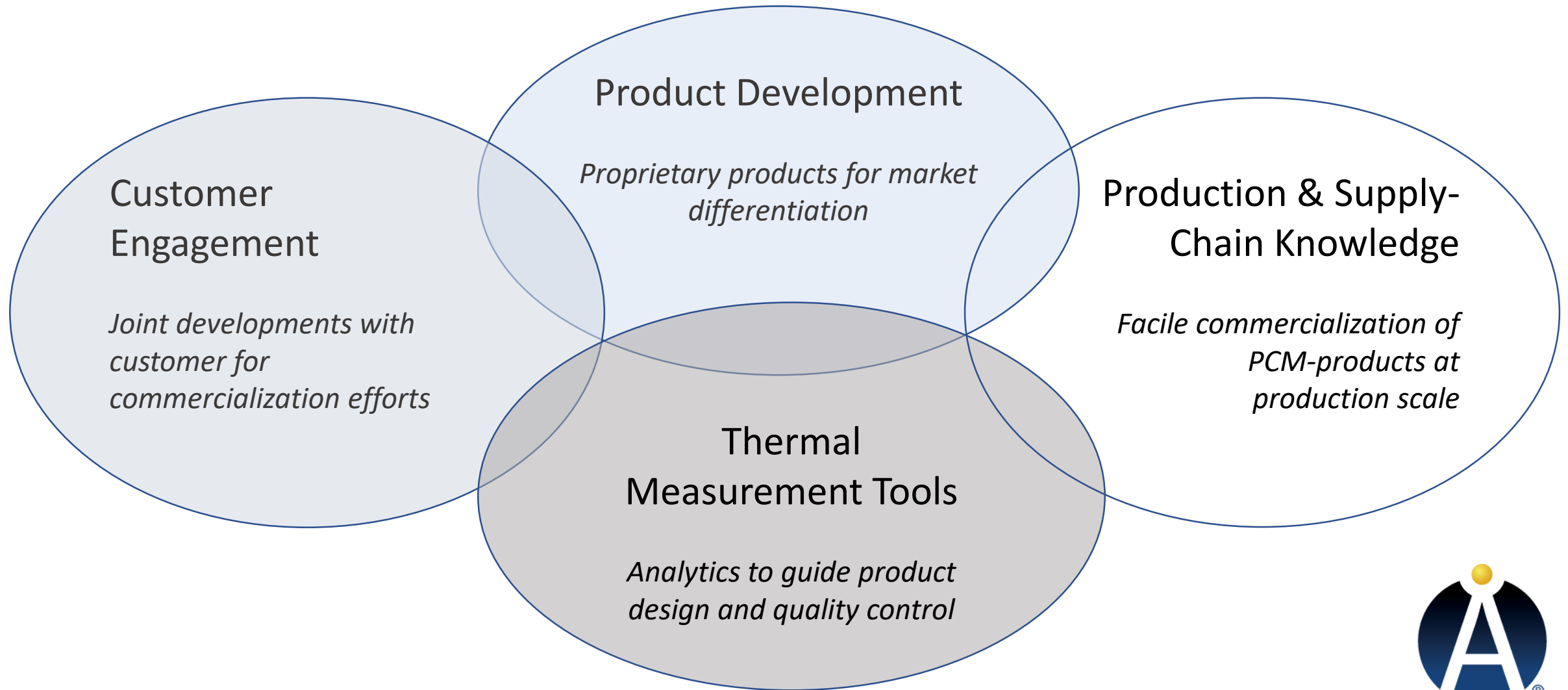


### RESULTS OF THESE ACHIEVEMENTS

- Launching a wide range of new mattress products in CY 2019 with Alexicool® technology
- Brand recognition starting to take shape

# ALEXICOOL® TECHNOLOGY – TEXTILES

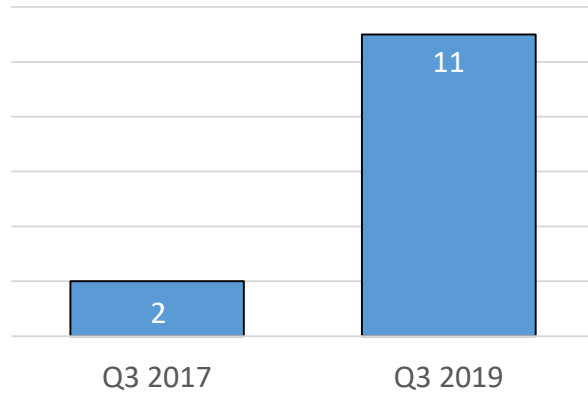
## Platforms for Growth and Achieving Profitability



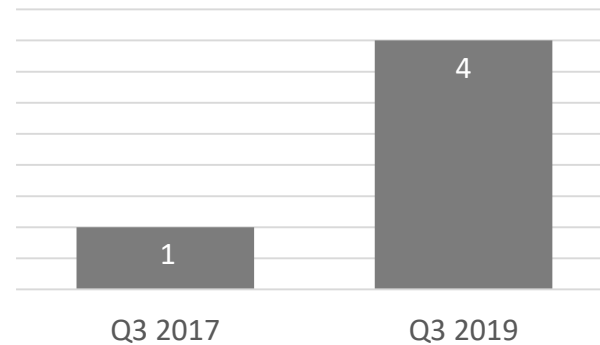
# ALEXICOOL® TECHNOLOGY – TEXTILES

## Created Foundation to Poise Alexium for Profitable Growth

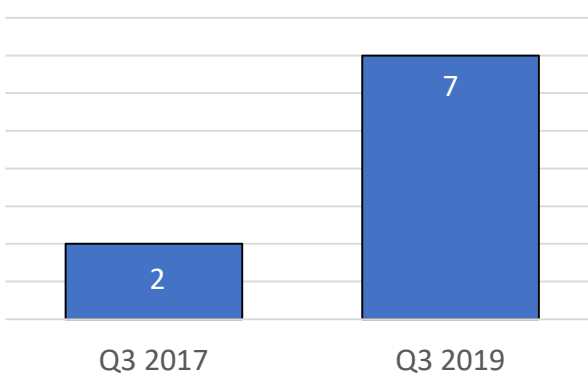
Number of Commercial Products



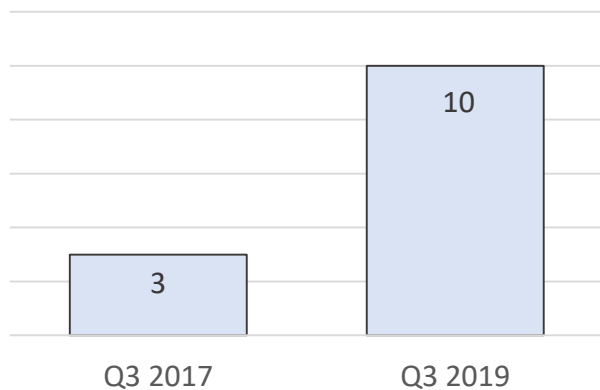
Analytical Tools for Evaluating Alexicool Products



Number of Application Methods

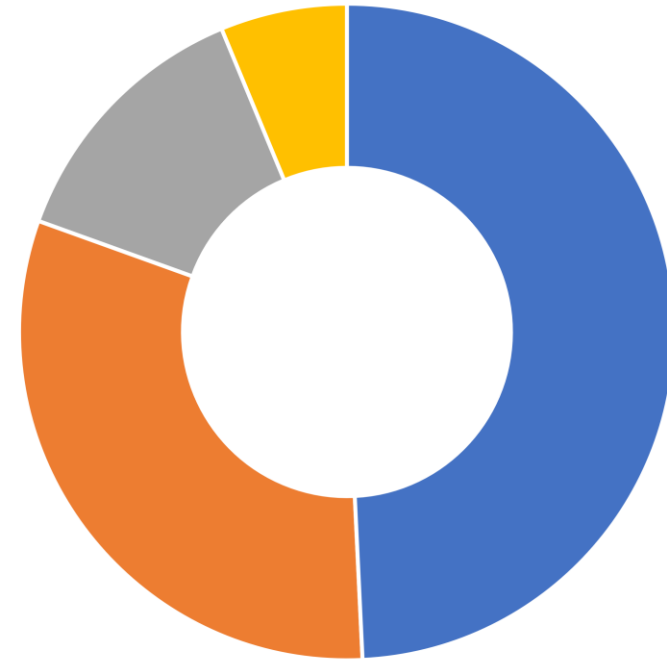


Number of Alexicool Customers



Projected Gross Margins (by product class)

- Standard Textile (Mattress)
- New Textile (Mattress)
- Foam (Mattress)
- Standard Textile (Top of Bed)




# 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



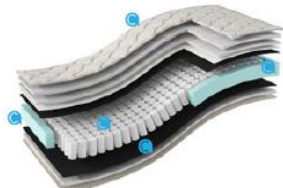
alexicool

## 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 29650



# 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



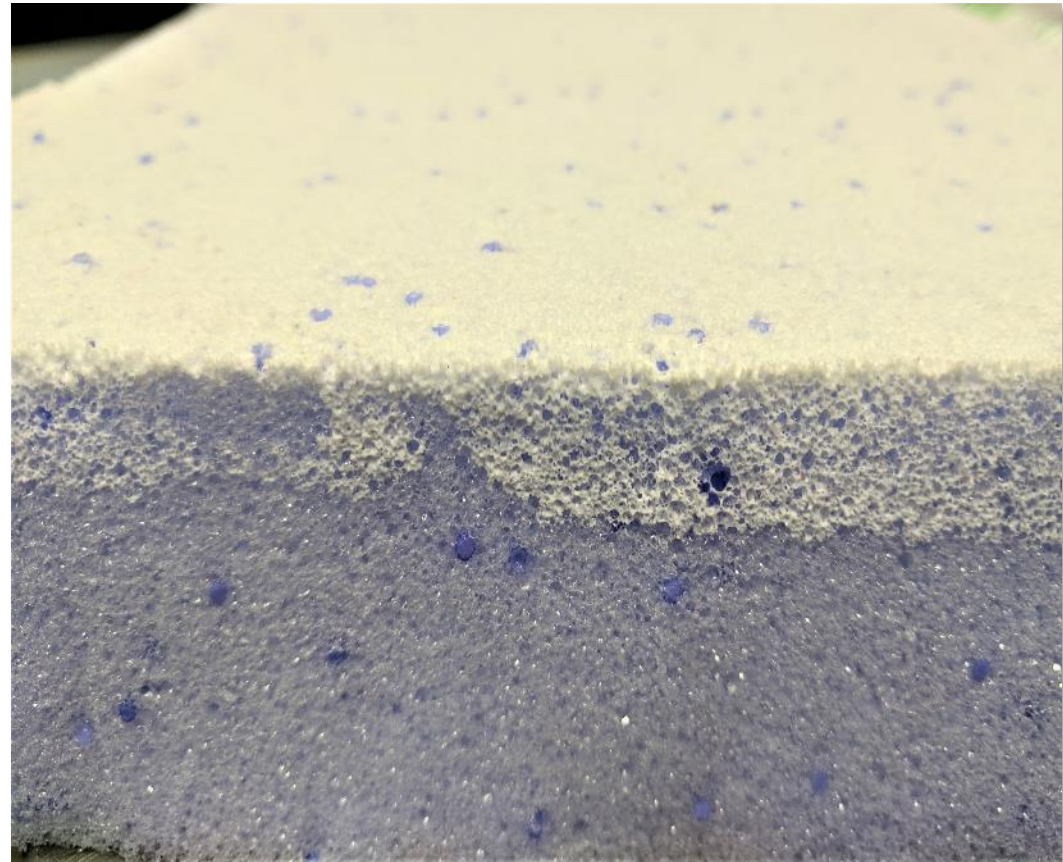
# ALEXICOOL® TECHNOLOGY– FOAM

## New Cornerstone Initiative

Alexium is launching a new product line in calendar Quarter 1, 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



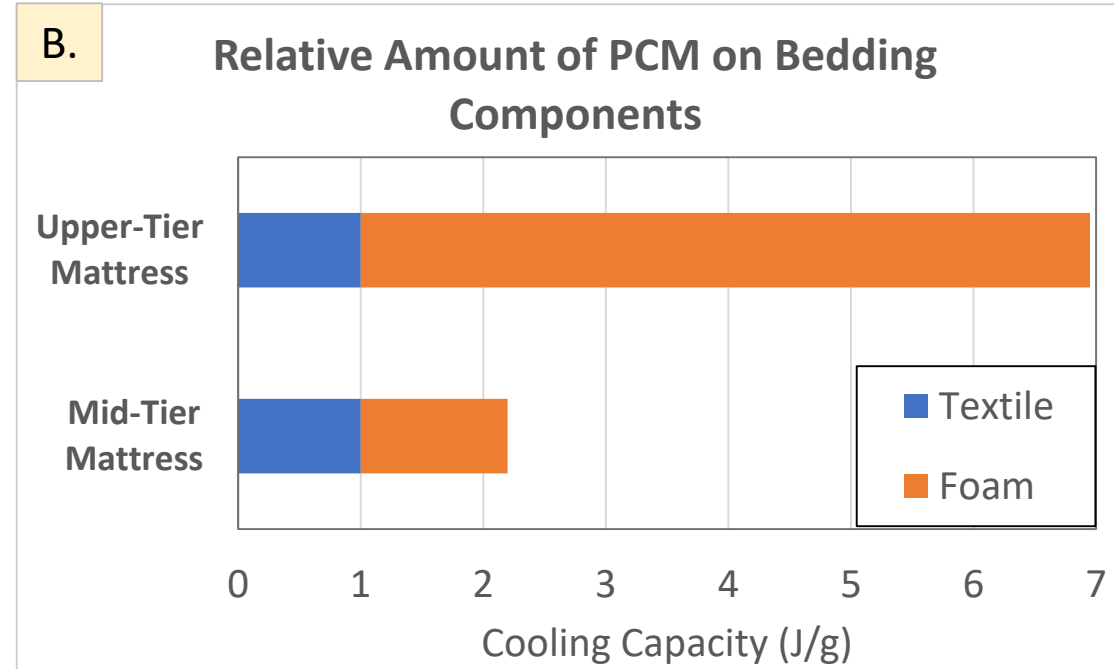
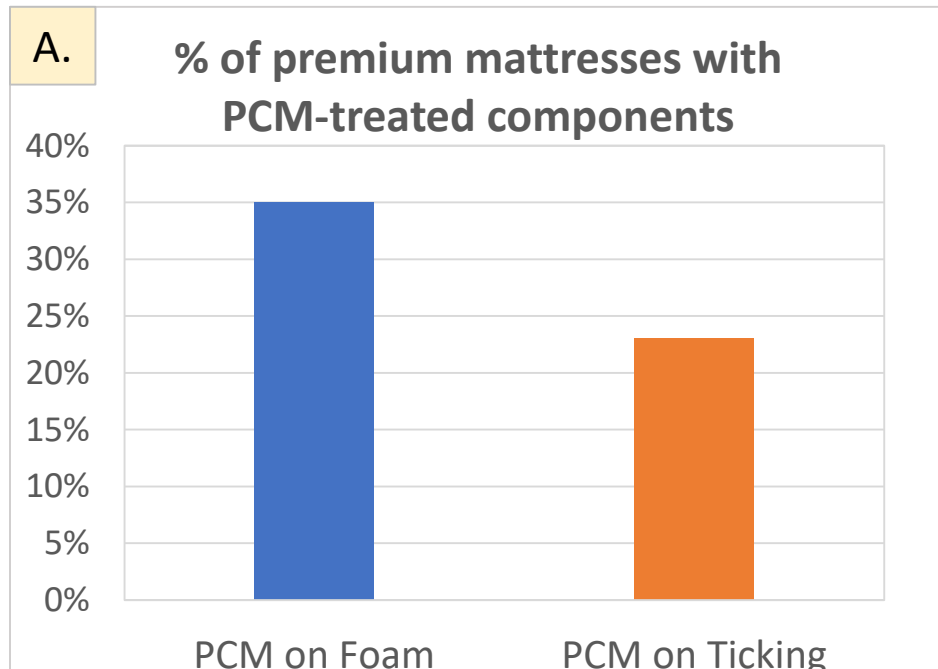


# ALEXICOOL® TECHNOLOGY— FOAM

## 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



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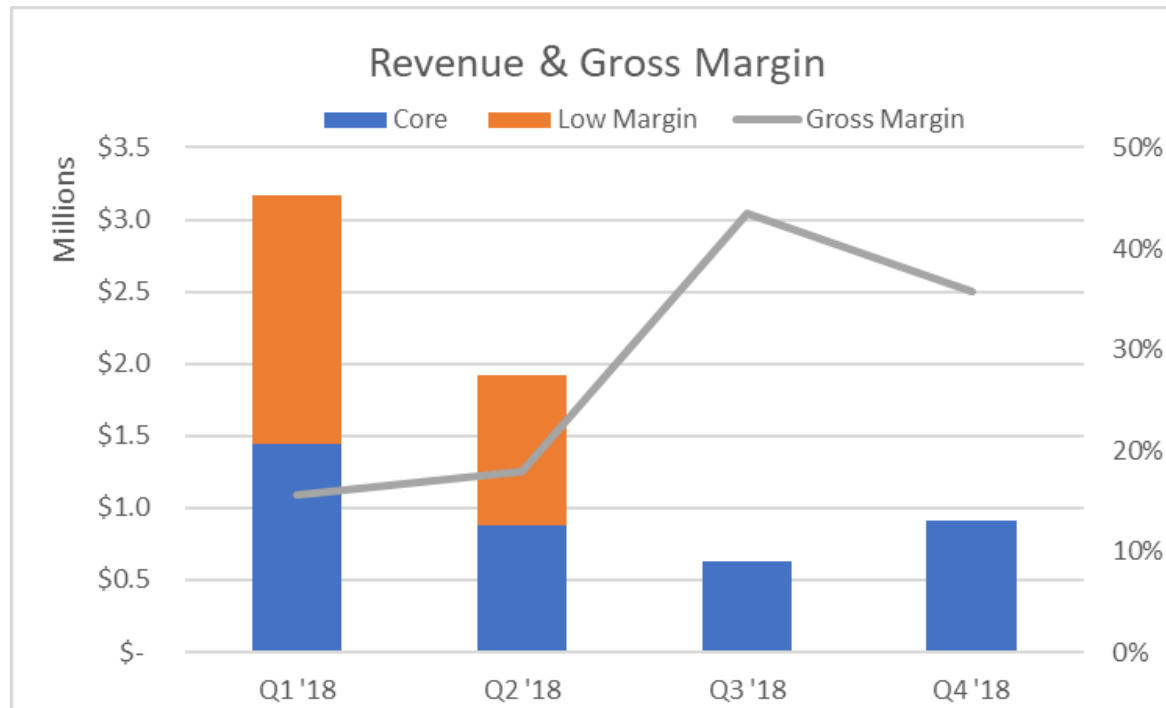




# Financial Analysis

## Revenue & Gross Margin Trend

### Revenue & Gross Profit



- Completed removal of low margin sales in H2
- Shipments to PCM customers continue to rise each quarter with new product introduction
- Focus on core competency showing results
- Evaluating multiple commercialization strategies

# 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



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# Executive Management



## **Robert Brookins – Chief Executive Officer and Managing Director**

Robert (Bob) Brookins, Ph.D., M.A.E. B.A. B.Sc. is the Chief Executive Officer. Dr. Brookins has experience in organic synthesis, materials chemistry, and chem/bio decontamination. He received his Ph.D. from the University of Florida in the areas of synthesis and characterization of conjugated poly-electrolytes and polymers with an emphasis on developing new polymerization methods. Upon completion of his Ph.D., he worked at the US Air Force Research Laboratory at Tyndall AFB, FL where he developed decontamination methods for chemical and biological threats and developed novel synthetic routes for reactive and functional surfaces.



## **Jason Lewis – Chief Financial Officer**

Over the past 22 years, Jason Lewis has worked with ArrMaz, a global specialty chemical company in mining, fertilizer, phosphate, asphalt and oil and gas industries. For the past six years, Lewis has held the position of Vice President of Finance. He joined the company in a senior accounting role with cross-departmental work for sales, marketing and operations groups for seven years. Lewis has a strong track record of value creation by way of revenue growth through pricing, long-term customer contracts, cost optimization through analysis tools, negotiation of services, department restructuring, debt management and working capital reduction through controls and process improvements. He also has strong international experience including greenfield start-ups.



## **Allen Reihman – Chief Commercial Officer**

Prior to joining Alexium, Allen Reihman worked for nine years at Invista, the world's largest integrated fiber, resin, and intermediates company. As Director of New Business Development, Reihman was the entrepreneur for the successful commercialization of new specialty polymers. He led all phases of this innovation program, including product development, manufacturing, intellectual property, pricing strategies, branding, business planning, and strategic alliances. Additionally, Reihman served as Director of Commercial Development for five global specialty chemical businesses at Invista where he led growth initiatives, valuation and decision analysis, market research, and strategy development. Previously, Reihman worked for seven years at Eastman Chemical where he held a range of commercial leadership roles in corporate development, global P&L general management, innovation, and market development.





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Contact:

[InvestorRelations@AlexiumInternational.com](mailto:InvestorRelations@AlexiumInternational.com)

U.S.: +1.864.254.9923

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