



ALEXIUM

SPECIALTY CHEMICALS AND SOLUTIONS

Alexium International Group Ltd.

EGM

8 May 2018

Presented By

Dirk L. Van Hying, Ph.D., CEO and Managing Director

Innovation. Growth. Leadership.

Alexium's Vision

To be the industry leader in consistently providing our customers with market-leading chemical solutions that offer superior performance and value over the competition.

Alexium's Business Strategy

Horizon 1

To achieve profitability by growing market share and expanding customer base with current suite of products (Alexicool AL-0251, Alexicool AC1000, Alexicool AC2000, Alexiflam FR). Leverage the success from our current product portfolio to overcome road blocks and gain industry acceptance in the following 3 key areas: A) Development of Flame Retardant Combat Uniforms, B) Growth in PCM Bedding Market, and C) Commercialization of Alexiflam NF.

Horizon 2

Accelerate growth by launching new textile products in FR and PCM (Alexiflam CCE, Alexiflam NF, others)

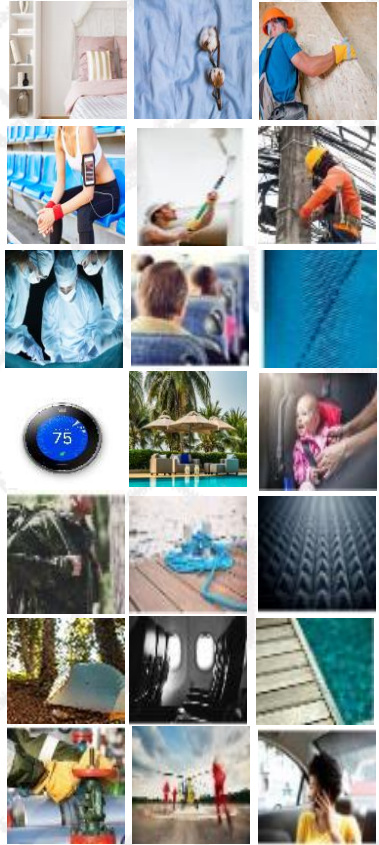
Horizon 3

Further accelerate growth in textile markets and extend into non-textile markets by licensing key technology to strategic global partners



Continual Refinement of Strategy

Large Number of Bespoke Projects



2016

Refocused on Platform Products

Alexicool
Platform



Bedding/Pillows



Apparel



Construction

Alexiflam NF
Platform



Timber



Cotton



Fleece

2017

Other Alexiflam
Platforms



Outdoor Fabrics



Electronics



Wood
Coatings



Military
Fabrics

Cornerstone
Initiatives



2018



Continual Refinement of Strategy

Refocused on
Platform Products

Alexicool Platform



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Other Alexiflam Platforms



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Considerations / Process



- Which are most imminent?
- What is ROI on effort?
- How driven is market segment?
- Which are best accomplished with a partner(s)?

2017

2018



First Cornerstone Initiative – Expansion in Bedding

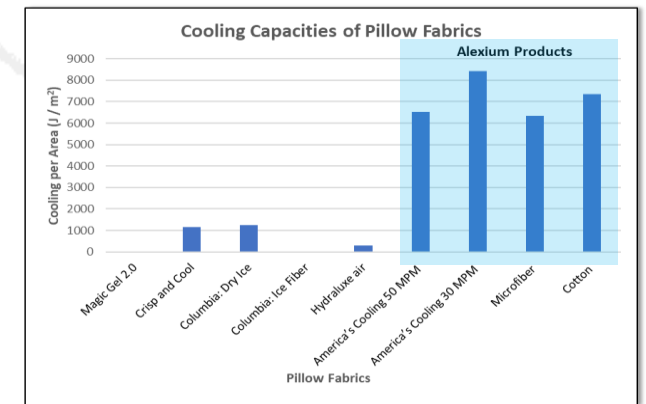
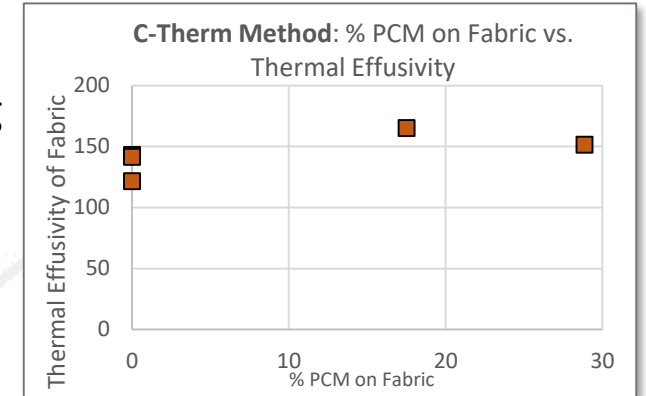


Development and Acceptance of Phase Change Material (PCM) Metrics

During 2017, Alexium's largest area of growth both in terms of revenue and gross profits was the sale of Alexicool into the bedding sector. However, even with Alexium's continuing growth in the sector, the lack of reliable metrics to quantify the cooling sensation PCM chemistries bring to the consumer hinder their more rapid acceptance.

Given this dynamic in the PCM bedding market, a fundamental step towards Alexium's goal of significant market share expansion is the development of new metrics, which Alexium recently achieved. This new testing protocol will enable potential customers to:

A) better develop new products and product systems; and B) better market their products against the competition through performance differentiation.

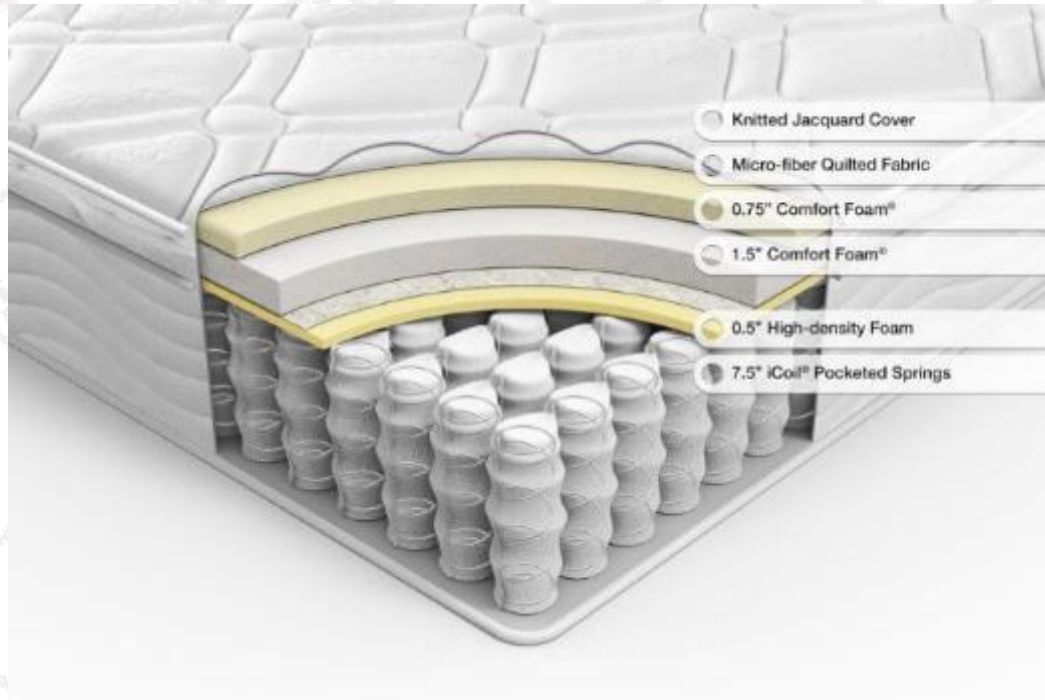


Key Milestones

- Conduct marketing campaign to educate consumers and bedding manufacturers on new testing protocol and Alexium PCM differentiation
- Work through AATCC to ensure proper, reliable metrics are established which clearly differentiate products based on performance



First Cornerstone Initiative – Expansion in Bedding



Integration into Additional Bedding Components

The thermal benefits of PCM chemistry such as Alexicool vary based on where in the overall bedding structure the chemistry resides. This has driven Alexium to expand its offering to enable bedding brands to both optimize the cooling experience the mattress provides to consumers but also enable a marketing story of differentiation on performance.

During the recent International Sleep Products Association (ISPA) show in April, Alexium generated 24 new opportunities to sell Alexicool to various bedding foam manufacturers. Internal testing shows over 5x the volume of PCM is applied to foam than to the ticking fabric, where Alexium's recent sales growth has occurred.

Key Milestones

- Modify current Alexicool product for additional bedding components such as foam and bedding socks
- Identify potential partners at both component- and brand-level to develop new mattress products
- Enter into agreements with one or more of these partners
- Product scale-up and launch final mattress product



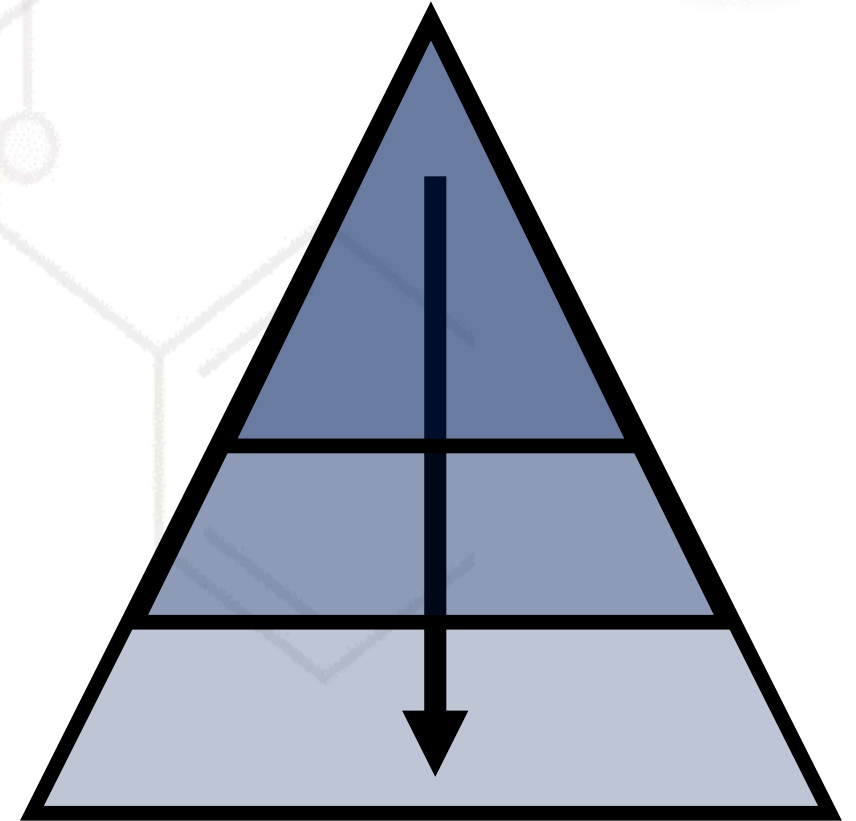
First Cornerstone Initiative – Expansion in Bedding



Integration into Additional Bedding Components

In addition to expanding Alexicool's market presence from ticking to other bedding components, a key area of focus towards this Cornerstone Initiative is sales penetration into higher volume mattress price tiers as market data shows that for each tier down in price point, the number of units sold roughly doubles.

Alexium recently launched a new product, Alexicool AC, to satisfy specific requirements of the higher volume tiers, which adds to the PCM cooling a second material which accelerates moving heat away from the skin. This new product gives the sensation of greater cooling at lower product loadings.



Key Milestones

- Secure initial key customers for Alexicool AC in higher-volume markets to prove concept to broader market
- Complete commercial launch of next-generation PCM product with disruptive cooling value proposition
- Identify potential fabric partners to develop mattresses for high-volume tiers
- Enter into agreements with one or more of these partners
- Product scale-up and launch final mattress product



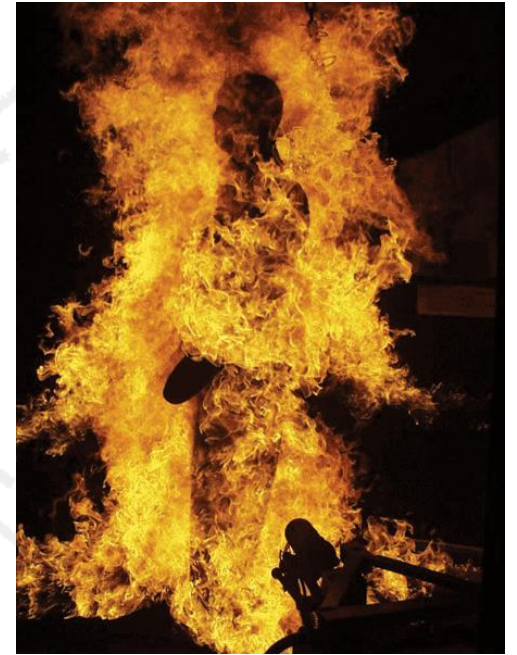
Second Cornerstone Initiative – Development of FR Military Uniforms



Flame Retardant Army Combat Uniform (FRACU)

The development of a replacement garment for Flame Retardant Active Combat Uniforms (FRACU) is an initiative that we have been pursuing for several years. We remain confident about this opportunity, with FRACU representing approximately 10% of all military uniforms.

In this process Alexium has passed FR requirements and passed initial PyroMan™ tests. The base material to which our FR is applied was further refined to increase breathability and decrease weight, which requires another PyroMan test for which we are proceeding with our fabric partner, a current provider of uniforms to the US military.



Key Milestones

- Complete chemical finishing of new fabric and cut-and-sew into garments for testing
- Pass full new uniform PyroMan test
- Proceed to minimum 90-day limited user evaluation (field trial) testing
- US military will conduct hazard assessment evaluation of toxicological and ecological impact of the FR solution
- Military will finalize the specification for contract award
- Alexium signs agreement with our fabric partner and produces chemistry for uniforms



Second Cornerstone Initiative – Development of FR Military Uniforms



FR Protection for Standard Combat Uniforms

The United States Senate Report to S. 2943, the Senate National Defense Authorization Act for Fiscal Year 2017, states that the military services continue to evaluate emerging flame-resistant technologies that may have the potential to provide a more cost-effective level of protection to a wider range of service members. Alexium has made significant strides over the period pursuing this objective. This initiative covers all standard combat uniforms and supplements the FRACU effort.

Key Milestones

- Finalize lab prototype which passes all performance specifications
- Reproduce prototype on manufacturing scale with supply chain partner
- Enter into agreement with supply chain partner
- Successful limited user evaluation (field trial) testing
- Award of contract and begin revenue generation

~1.5M



Number of FR-protected military uniforms issued per year

~9M



Number of unprotected military uniforms issued per year



Third Cornerstone Initiative – Commercialisation of Alexiflam NF



Commercialisation of NF into European Markets

Alexium has developed, over the past two years, a revolutionary new flame retardant product for natural fibers (cotton, wool, wood). Alexium's two initial markets for Alexiflam NF are the EU and the US, which have different requirements and value propositions.

Recently, Alexium achieved its first major milestone towards sales into Europe which was confirmation of compliance with the EU's REACH environmental registration process. The initial target market in Europe is in workwear, which uses polyester-cotton fabrics heavily. The key value proposition in this market is that Alexiflam NF will allow workwear fabric constructions with much higher levels of polyester, which is half the cost of cotton.



Key Milestones

- Finalize customer validation and move to 3rd party trials with potential partners
- Potential customers are currently conducting trials and evaluating the product
- Upon completion of successful validations and trials, our next step is to sign agreements with partners



Third Cornerstone Initiative – Commercialisation of Alexiflam NF



Commercialization of NF in the United States

In the US, the first key milestone for sales is finalizing the registration process for the Toxic Substances Control Act (TSCA). This process has been ongoing since late 2017 and is targeted for completion in late 2018.

The two short-term target markets for Alexiflam NF in the US are FR socks for bedding and cotton fleece. The current technology used for FR socks (which is a highly consolidated market) is an expensive and potentially hazardous fiberglass-based material and polyester fibers in fleece is a major source of global microplastic pollution.



Key Milestones

- Complete TSCA registration process on current product
- As we await TSCA approval, we continue to identify and work with potential partners and customers to develop our supply chain and pipeline in advance of registration
- Development of prototype
- Scale up and launch



Pipeline/Sales Growth Outside of Cornerstone Initiatives

R&D

Sales



Alexicool DR for Apparel



Alexicool for Construction



Alexiflam SYN for Electronics



Alexiflam FR for Wood Coatings



Alexiflam NF for Timber



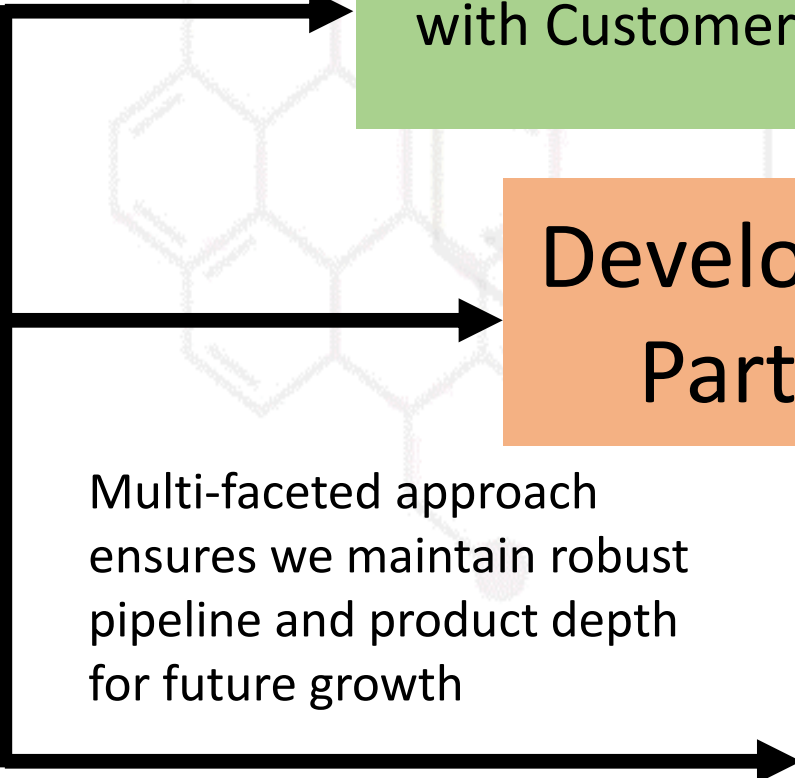
Alexiflam PB for Outdoor Fabrics



Alexifam NF for Fleece

Internal Work with Customer

Development Partners



Initiative #4



Summary

Alexium's vision is to be the industry leader in consistently providing our customers with market-leading chemical solutions that offer superior performance and value over the competition.

Our short-term focus is not to drive a financial outcome (i.e. cash neutrality), but to deliver on our three cornerstone initiatives, which Alexium has already made significant progress towards. When we fully deliver on those initiatives, resulting financial success and profitability will allow Alexium to pursue its ambitious mid- and longer-term growth goals.





Thank You!



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