



ALEXIUM

ALEXIUM INTERNATIONAL GROUP LIMITED
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PRESENTED IN US DOLLARS



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Alexium is an innovative performance materials company



- Alexium is a specialty performance materials company leveraging proprietary technical innovations to deliver thermal regulation, dehumidification and flame-retardant solutions
- Alexium technology is incorporated into customer products to achieve:
 - Reduction in the temperature experienced by the user (thermal regulation)
 - Thermal comfort (humidity regulation)
 - Provide protection from fire (fire retardant)
- Our technology has broad ranging applications and is underpinned with 25 global patent applications
- Advanced research, product development and analytical laboratories
- Alexium products are made in the US and distributed globally

Unique environmentally friendly product portfolio



Thermal regulation

AlexiCool®

- Premium PCM cooling for mattress and top of bed
- Absorbs heat while providing comfort and coolness

BioCool™

- Microencapsulated PCM products (mPCMs) for textile/foam applications
- USDA BioPreferred Certified (mPCM) with 94% biocontent (highest in market) EcoCert COSMOS Certified (PCM)



Thermal comfort

De|Cool

- Newest introduction to Alexium's thermal management product portfolio
- Textile composite based on a patent pending, first-in-class technology
- Humidity management improves comfort all night long

Eclipsys®

- Textile composite for infinite comfort
- Improves heat flux in bedding, shoes, tactical gear and body armor components by more than 100%

Flame retardant

alexiflam®

- Customized solutions
- Designed for use in a variety of markets: bedding, FR mattress socks, FR suits (PPE), Military fabrics, and carpet
- Free from toxic "forever" chemicals

alexiguard

- Flame retardant emulsion for use on 100% polyester fabric
- Nontoxic aqueous based solution, free from halogen, antimony, formaldehyde and phosphate salts

Committed to a sustainable world



Environmental, Social and Governance (ESG) Statement: Alexium is committed to providing innovative, sustainable, and environmentally friendly solutions to our customers and end consumers. We take responsibility for our impact on the environment and human welfare seriously and are dedicated to exceeding industry standards for safety and environmental sustainability. The board recognises the importance of formally integrating Environmental, Social and Governance (ESG) principles into our daily operations and as such, is committed to implementing a transparent, data driven program to help identify opportunities to align our business activities with these values.

ESG

- **Environment:** Waste reduction, resource conservation, and environmentally friendly products
- **Social:** Qualification-based gender & race pay equality, community investment
- **Governance:** Transparency into corporate integrity, compliance auditing

By FYE 2024, Alexium will establish baselines, metrics and KPIs for ESG performance

Product

SUSTAINABLE PRODUCT FOCUS

Biocool® | Alexium's proprietary biobased cooling technology for textile & foam applications

- ✓ Biobased, sustainable raw materials
- ✓ 94% biobased content (highest in market)
- ✓ Registered with the USDA BioPreferred program
- ✓ Certified under the Ecocert COSMOS program

PCM BioPreferred Sales Mix Goal

FY23 Goal 70%	FY23 Actual 65%
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Sustainable World

- ✓ **BioCool PCM**
 - Bio-based consumer product
 - Natural ingredients
- ✓ **Eclipsys : EV and Battery applications**
 - Electric vehicles
 - Energy storage
 - Energy efficiency
 - Carbon capture
- ✓ **BioCool and Eclipsys : Cold Chain Packaging**
 - Bio-based consumer product
 - Natural ingredients
 - Water reduction
 - Energy efficiency
 - Carbon capture
 - Circular packaging
- ✓ **Alexiflam: Flame Resistant Textiles**
 - Made for natural, renewable fibers
 - Free from toxic “forever” chemicals

FY23 Year in review



FY23 Highlights

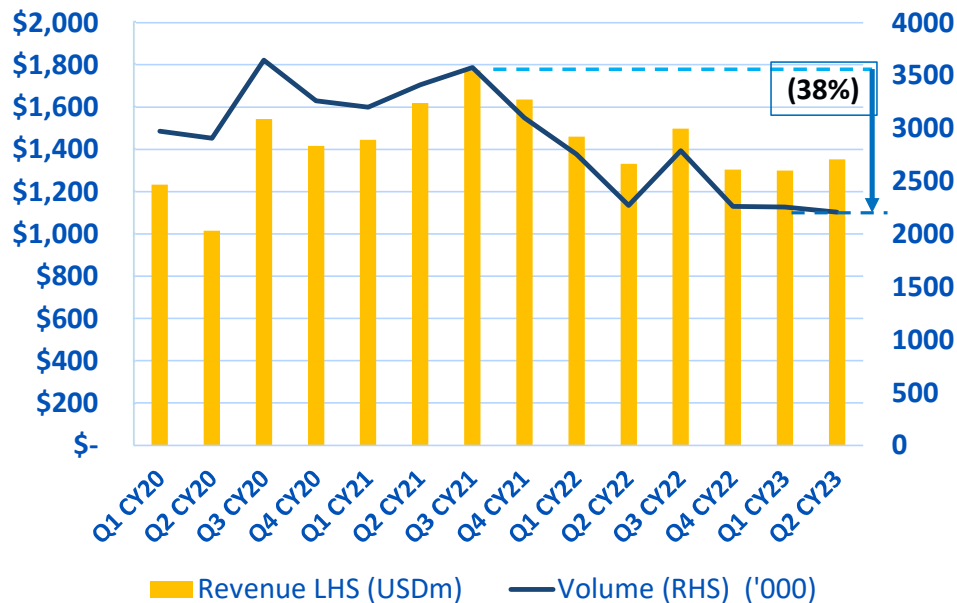
- Billy Blackburn, new CEO commenced September 2022
 - Restructured business to accelerate commercialization of existing technologies
 - Reset and executed Alexium market development priorities
 - ✓ Grew core bedding market revenue despite challenging market conditions
 - ✓ Continued development of Flame-Resistant Nylon/Cotton military fabric with successful lab results and “Pyroman” test burns
 - ✓ Commercialized Eclipsys for Tactical Gear
 - ✓ Commercialized DelCool™ fabric in pillows
 - ✓ Initial customer testing of Eclipsys™ in Footwear
 - ✓ Initial customer testing of PCM in Cold Chain Packaging
 - Reduced overhead and maintained YoY operating expenses in a difficult and inflationary environment
 - Quality control improvements led to zero off-specification events in H2 FY23
 - Maintained healthy gross margins despite increased raw material and freight costs
 - 65% of PCM sales were of our Biocool product utilising sustainable and bio-based materials
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Grew bedding market



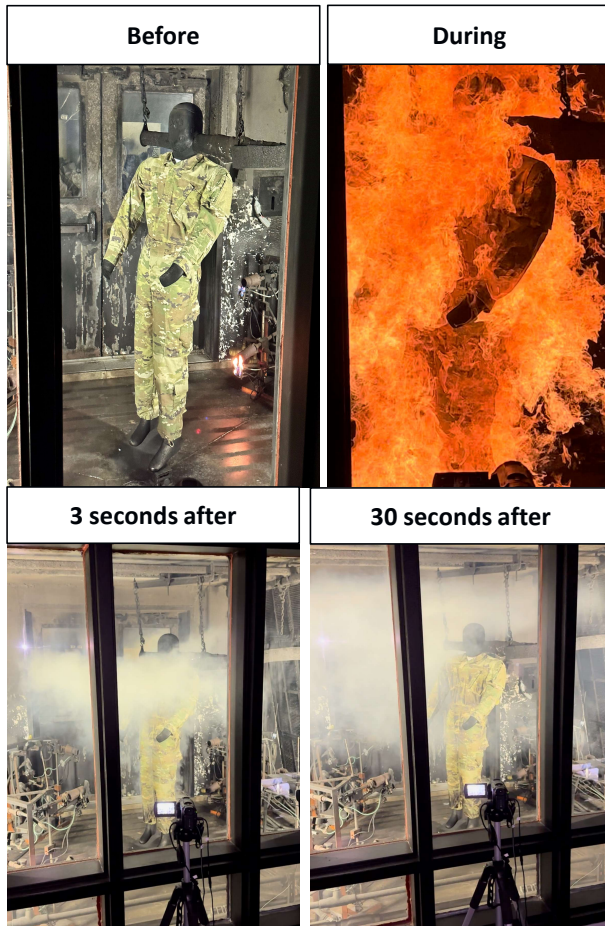
US Produced Mattresses

Source : sleepproducts.org



- Alexium grew core bedding market despite continued challenging market conditions
 - Added 8 new customers
 - Contracts established with key customers
 - First international PCM sales to Turkey
- Launched DelCool and Eclipsys technologies in market
 - DelCool pillow Ranged in Macy's under "HI-Cool" brand
 - Eclipsys sales commenced to global ballistic vest producer
- Market continues to be challenging given low consumer sentiment and broad economic uncertainty
 - Current US mattress market volumes down 38% from their peak in 1Q22
 - Stabilised on revenue and volume over last three quarters

Successful Pyroman lab results



- Alexium has delivered production-scale FR NyCo treated fabric that passed initial military lab test requirements for weight, strength and flame resistance
 - Alexium's FR NyCo fabric passed the most stringent test at 4-seconds burn time and out-performed the current standard FR fabric utilised by the U.S. military
- Alexium has assembled a chain of established military suppliers to collaborate on fabric development, testing and production
- **Path to US military adoption:**
 - 1) Improve the softness, breathability and washability of the fabric and repeat lab testing
 - 2) Produce fabric yardage for the prototype uniforms for field testing
 - 3) Prepare supply partners to allocate capacity, lock in costing and prepare to respond to a public request for quote or proposal
- Strong test results leading to commercial opportunities outside of US military including foreign military and industrial workwear applications

FINANCIAL RESULTS FY 2023



FY23 Financial Snapshot



- While revenue has declined \$1.0m year-on-year, the business has experienced recent momentum with revenue growing for the second consecutive half year
- Maintained a strong gross margin with the slight year-on-year decline due to customer & product mix
- Controlled operating expenses despite a tight labor market and inflationary pressures
- Continued investment into the development of DelCool & Eclipsys technologies
- Amended, restated and extended the convertible note at the end of December 2022 for a new three-year term, with an incremental \$1.0m cash injected into the business in conjunction with this process
- The availability on the Alterna asset-based line of credit remains strong and will help fund our growth in the future
- Cash management and optimization is key focus for management

(1) Operating EBITDA is a non-GAAP financial measure
 Note: All values in USD

Focus, Diversify, Profitable
Growth



FY24 – 27 Strategic Pathway

FY23 Focus

- ✓ **Team** : Strengthen the organization with the addition of a new CEO and increased focus of Dr Brookins on technology/product development
- ✓ **Culture** : One Team.
- ✓ **Growth (70:20:10)**
 - ✓ Year on year revenue growth in core bedding market (Alexicool, BioCool, DelCool, Eclipsys)
 - ✓ Progress FR Nyco for military.
 - ✓ Commercialize Eclipsys for Tactical gear
 - ✓ Commence product testing with Alpha customers in new markets (e.g., Shoes, cold chain)
- ✓ **Operations** : Secure the Company's supply chain to ensure resiliency
- x **Financial** : Cash flow positive

FY24 Diversify

- **Team** : Build out direct sales and BD
- **Culture** : Sales and marketing centric
- **Growth (40:20:40)**
 - Year on year revenue growth in core bedding market (Alexicool, BioCool, DelCool, Eclipsys)
 - Progress FR Nyco for military.
 - Commercialize Eclipsys for tactical gear
 - Commercialize Eclipsys and FR in new markets (e.g., shoes, cold chain, workwear)
- **Operations** : Secure the company's supply chain to ensure resiliency
- **Financial** : Cash and commercial discipline. Cashflow positive
- **Funding** : Adequate funding in place

FY25-27 Profitable Growth

- **Team** : Bolster operations team, mature sales execs
- **Culture** : One Team – Customer-centric, Success breeds success.
- **Growth (40:20:40)**
 - Capitalize on globally unique and patent protected product range
 - Commercialize key product platforms in major international markets
 - Expand the product application range into large adjacent markets (e.g. outdoor apparel/gear, shoes, automotive, electronics)
- **Operations** : Realize benefits of increased scale
- **Financial** : Material growth in earnings, cashflow and share price

FY24 Strategic Priorities

- **Build out and strengthen Alexium's direct sales and business development team (adding manufacturing reps)**
- Heightened **cash and commercial discipline** to improve funding runway and allow investment in key new product/market initiatives
- Drive **pipeline conversion**, and **strike supply, agency and partnership agreements** to increase the cadence of our go to market flywheel
 - **YoY growth in our core bedding market (Alexicool, BioCool, DelCool and Alexiflam)**
 - **Commercialize FRNyco** for military and/or non-military workwear
 - **Commercialize Eclipsys** for tactical gear
 - **Commercialize Eclipsys** in adjacent markets (Cold Chain and Footwear)
 - **Commercialize FR** in adjacent markets (Mattress Textiles and Workwear)
- **Operations highlight** – focus on diversifying supplier base to reduce supply chain risk and lower costs
- Ensure **adequate funding** in place to support our “Focus, Diversify and Grow” Strategy

Go to market



Bedding Market YoY Revenue Growth

Bedding Market

- **Target market:** US produced mattresses, pillows and toppers and FR Socks
 - c 10m mattresses sold each year in the US ⁽¹⁾
 - 45% of mattresses sold are produced by Serta Simmons and Tempur Sealy
 - Bed in box and foam-based mattresses are a high growth segment
- **Go to market:**
 - Direct sales to Brand, tier 1 and tier 2 suppliers
 - New product introductions
 - International

Military Fabric & Tactical Gear Commercialize

Military Uniforms

- **Target market:** US Army and Marine Corps uniforms
 - Fabric is not flame resistant
 - c 650k⁽²⁾ active personnel and c 200k⁽²⁾ reservists
 - c 5 sets of fatigues issued per person per annum.
- **Go to market:** Partner with one of the world's largest textile manufacturers

Tactical Gear

- **Target market:** US law enforcement market
 - c 700,000 law enforcement officers in US ⁽³⁾
- **Go to market:** Direct sales to tactical vest producers

Cold Chain, Shoes, Workwear New market entry

Cold Chain

- **Target market:** US Cold chain packaging market
 - Total market c \$3.0bn. c14% CAGR ⁽⁴⁾. Insulated container, boxes and cold packs c 60% of market
 - Strong market fit with pharmaceutical and medical
- **Go to market:** Alpha customer R&D

Shoes

- **Target market:** Athletic workwear
 - c100m pairs sold p.a. ⁽³⁾
- **Go to market:** Alpha customer R&D with top 5 shoe company.

Workwear

- **Target market:** US flame resistant workwear market
 - Target industrial worker base
- **Go to market:** Partner with one of the world's largest textile manufacturers

Source (1) ISPA
 (2) 2021 Demographics Profile of the Military Community issued by the Department of Defense
 (3) Statista
 (4) Grandview research – Cold Chain Packaging Market

Bedding – YoY revenue growth



FY24 Priorities	Target market	Products	Current Status	FY24 Intent
YoY Alexicool and BioCool revenue growth	<ul style="list-style-type: none"> Innerspring Mattress Foam Mattress Low-cost/Hi-Volume Mattress Applications (“bed in a box”) Top of Bed – Pillows and Mattress Toppers 	 	<ul style="list-style-type: none"> #1 PCM supplier to SSB tier 1 and 2 suppliers First global sales of PCM 	<ul style="list-style-type: none"> 20% YoY growth Further diversify customer base and # technologies per customer Additional global sales of PCM
Commercialize DelCool in bedding and build direct to retail pipeline	<ul style="list-style-type: none"> Top of Bed – Pillows and Mattress Toppers 		<ul style="list-style-type: none"> Channel partner agreements in place Ranged in Macys under “HI-cool” brand 	<ul style="list-style-type: none"> Contract 2 - 3 large retail placements Create retail market pull with direct to retail engagement Higher revenue per unit by selling a component closer to the finished retail goods
Commercialize Alexiflam in bedding	<ul style="list-style-type: none"> Flame-resistant mattress textile 	 	<ul style="list-style-type: none"> Client discovery Formulating an FR chemistry free of organic-phosphorous 	<ul style="list-style-type: none"> Commitment from a world leader in bedding to adopt the more sustainable FR chemistry Initial sales to FR sock producers






Military fabric and tactical gear - Commercialize



FY24 Priorities	Target market	Products	Current Status	FY24 Intent
Commercialize FR Ny Co in military	<ul style="list-style-type: none"> Marines Army Foreign Military 		<ul style="list-style-type: none"> Passed Army Pyroman Working on fabric softness and breathability with global textile manufacturer 	<ul style="list-style-type: none"> Position Alexium's FR for commercial success with the military to commence in CY25.
Commercialize Eclipsys for tactical gear	<ul style="list-style-type: none"> Tactical vests 		<ul style="list-style-type: none"> Product testing with 3 customers Initial sales commenced in 2023 Targeting public contract opportunities to generate large volumes 	<ul style="list-style-type: none"> Contract \$1M - \$2M sales

Cold chain, shoes and workwear – New market entry



FY24 Priorities	Target market	Products	Current Status	FY24 Intent
Commercialize Eclipsys and PCM in Cold Chain	<ul style="list-style-type: none"> Cold chain packaging 	  	<ul style="list-style-type: none"> Early-stage testing with 2 cold chain packaging companies Business development initiated with broader target customer base 	<ul style="list-style-type: none"> Define the market potential for Alexium Increase Alexium's target customer network in this segment New revenue to start in late FY24
Commercialize Eclipsys in Shoes	<ul style="list-style-type: none"> Athletic Shoes Work Boots/Shoes Military Boots 		<ul style="list-style-type: none"> Early-stage testing with top 5 global shoe company 	<ul style="list-style-type: none"> Break into a new market segment with large revenue growth potential Diversify from concentration of PCM sales and the bedding market
Commercialize FR Ny Co for workwear	<ul style="list-style-type: none"> PPE - Workwear 		<ul style="list-style-type: none"> Initial product development work underway with global textile manufacturer 	<ul style="list-style-type: none"> Break into a new market segment with large revenue growth potential Diversify from concentration of PCM sales and the bedding market

Strategic plan



Market Priority	Strategy	FY23	FY24	FY25	FY26	FY27
Bedding	Thermal Regulation	Share First international sales	Grow Alexicool and BioCool revenue (US and International)			
	Top of Bed comfort		Initial sales	Commercialize DelCool in bedding and build direct to retail pipeline		
	FR Sock		Disc	Late-stage testing	Initial sales	Commercialize Alexiflam in bedding
Military and Tactical Gear	Military Uniforms	Late-stage testing			Initial sales	Commercialize FR Ny Co in military
	Tactical Gear		Initial sales	Commercialize Eclipsys for tactical gear		
Innovation	Cold Chain		Disc	Late-stage testing	Initial sales	Commercialize Eclipsys in Cold Chain
	Shoes		Disc	Late-stage testing	Initial sales	Commercialize Eclipsys in Shoes
	Workwear		Disc	Late-stage testing	Initial sales	Commercialize FR Ny Co for workwear
		Discovery	Late-stage testing with customer	Initial sales	Fully commercialized	

Conclusion



- **FY23 - The company was successful in commercializing multiple technologies in FY23, but had setbacks on results due to delays of technology adoption**
 - **FY24 and beyond - The work performed in FY23 has set the business up for success**
 - **DelCool leads to large volume top-of-bed placements**
 - **FR NyCo gets place in military apparel long-term**
 - **Eclipsys launch opens new markets for footwear and cold chain packaging**
 - **Alexium now shifts from technology development to commercial execution - placing our newly developed products into high-volume channels of our existing markets and new large end-market applications**
 - **To realize this potential, it will require relentless execution from the management team across all key functions of the business - operations, finance, product development and sales.**
 - **Alexium has the team and technology to achieve. Time to execute!**
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