



ALEXIUM

SPECIALTY CHEMICALS AND SOLUTIONS

INNOVATION * GROWTH * LEADERSHIP

**2018 Gabelli & Company
Specialty Chemicals Conference Presentation
13 March 2018**

**Presented by Dirk Van Hying, Ph.D.
CEO and Managing Director**

2018 Gabelli & Company Specialty Chemicals Conference

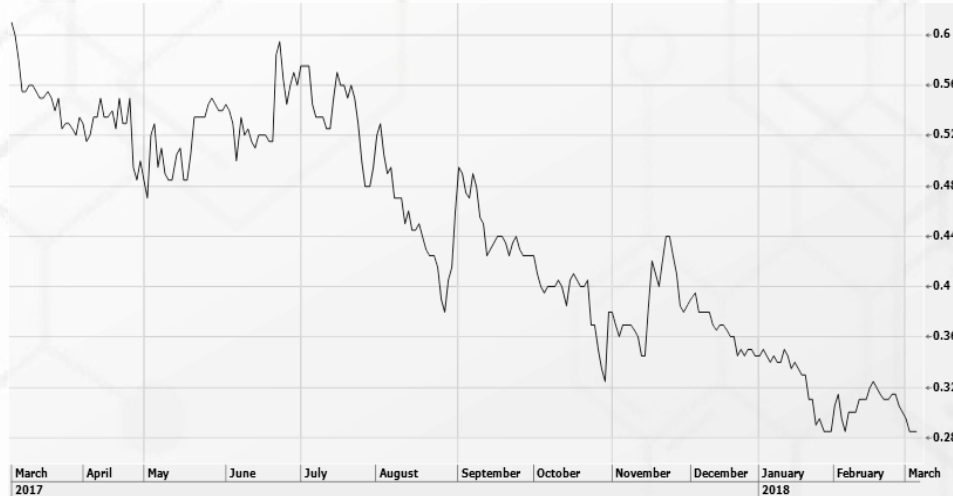
- 1 Company Overview**
- 2 About Alexium
- 3 Target Markets
- 4 Alexium Products & Key Growth Silos
- 5 Financial Analysis
- 6 Management Bios

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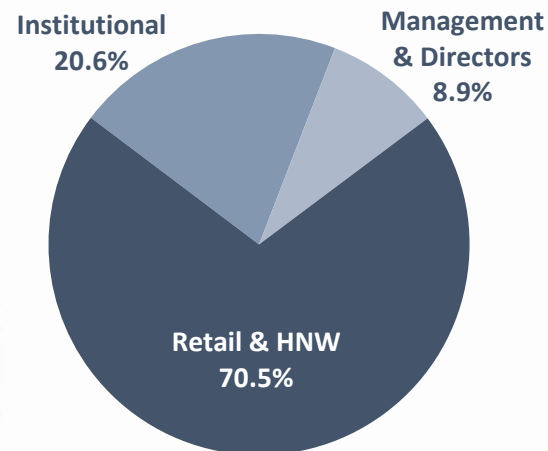


Company Overview

12 Month Share Price



Investor Mix



Key Statistics

ASX Code	AJX
Current Share Price	\$0.29
52 Week High	\$0.64
52 Week Low	\$0.27
Shares on Issue	~341m
Market Capitalisation	~\$95m
Cash (31 December 2017)	\$17.2m

Company Highlights

- H1 2018 financial highlights (Same Period Prior Year comparison)
 - Specialty FR Sales up 149%
 - PCM Sales up 154%
 - Gross Margins up to 25% from 1%
 - Increased number of customers by over 200%
- \$9 Billion FR market and \$0.9 Billion PCM market forecasted to grow at 6% and 24% p.a. respectively

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



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Who We Are

- Alexium International is a **speciality chemicals developer** headquartered in Greer, South Carolina, USA
- Focus on **high-performance, environmentally friendly, non-hazardous Flame Retardants (FR) and Phase Change Materials (PCM)**
- **Cost effective, patented solutions** for both textile and non-textile markets (20+ global patent applications)
- **Rapid growth in sales** from \$0.4M in FY15 to \$3.4M in FY16 and \$24M in FY17
- Global chemical markets for FR and PCM total **US\$9.0B** and **US\$934M per year** respectively

Environmentally Friendly FR Solutions

Knowledgeable Formulation Experts

Extensive Customer Support

Exceptional Product Performance

Innovation Driven



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Flame Retardant Market

Fire retardant chemistries are chemicals required to be added to virtually every consumer product sold to prevent initiation of a fire or inhibit the rate at which the event propagates.



Market Drivers

- **Stringent fire safety regulations** causing companies to look for more effective performance in FR
- **Evidence of toxicity and bio accumulation** in halogenated compounds and carcinogens used in FR for decades
- **New legislation in Europe & USA** restricting/eliminating the use of many halogenated compounds

Key Statistics

\$10 B

Forecasted market size in 2019

6.0%

Forecasted CAGR of global FR market

46.7%

NA / EU share of market

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



“Alexium enables durable, high-performance, and environmentally-friendly fire retardancy without compromising you or the world in which we live.”

Global FR Regulations

Accelerating the Market Drive to Alexium

 **The United States Consumer Product Safety Commission (CPSC) voted on SEPTEMBER 20th, 2017 to immediately warn the public about the dangers of using products containing halogenated, nonpolymeric flame retardants***

 Alexium's chemistries are **organophosphorous and/or polymeric** which are a ***safe, high-performance alternative*** to the incumbents

 **New Toxic Flame Retardant Regulations** have been proposed or enacted in 10 states since the CPSC decision with 6 more currently considering action

 **REACH Registration** is the chemical regulatory system for the European Union. All Alexium products are fully TSCA** & REACH registered.



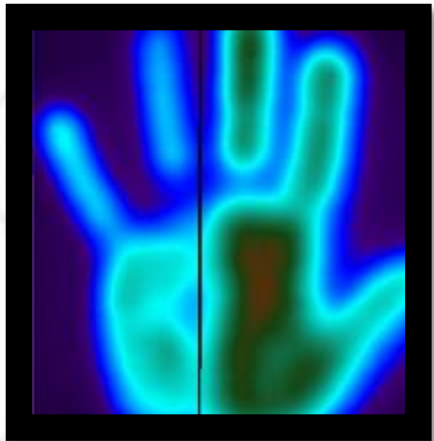
*Agency/Docket Number: CPSC Docket No. CPSC-2015-0022. Document Number: 2017-20733

** Alexiflam NF TSCA registration in process

Thermal Management Market



1 Second After Contact



35 Seconds After Contact

Thermal Management or Phase Change Material (PCM) chemistries can improve the efficiency of apparel and other textiles to absorb heat and moisture. The microscopic molecule attaches to a fiber and can retain heat and cool the textile it is applied to, and then re-charge itself when the heat source is removed.

Market Drivers

- Having a “cool feel” is becoming **necessary to compete** in key markets of bedding, apparel, athletic wear
- Traditional microcapsules contain high levels of either formaldehyde or VOCs
- **Blending cooling with other features** such as wicking and durability highly desired but **highly complex** which **Alexium can address.**

Key Statistics

23.5%

predicted CAGR through 2025

\$934M

Forecasted market size in 2018

\$5B

Forecasted market size in 2025

54.0%

NA / EU share of world market

51.0%

Market share of organic PCMs

*Source: Accuray Markets “Global Advanced Phase Change Material (PCM) Market Analysis and Trends”



“Alexium products enhance the way you feel, day and night.”

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Alexium Products

- Platform, ready-to-use chemical formulations
- Developed with customers requirements and equipment from inception



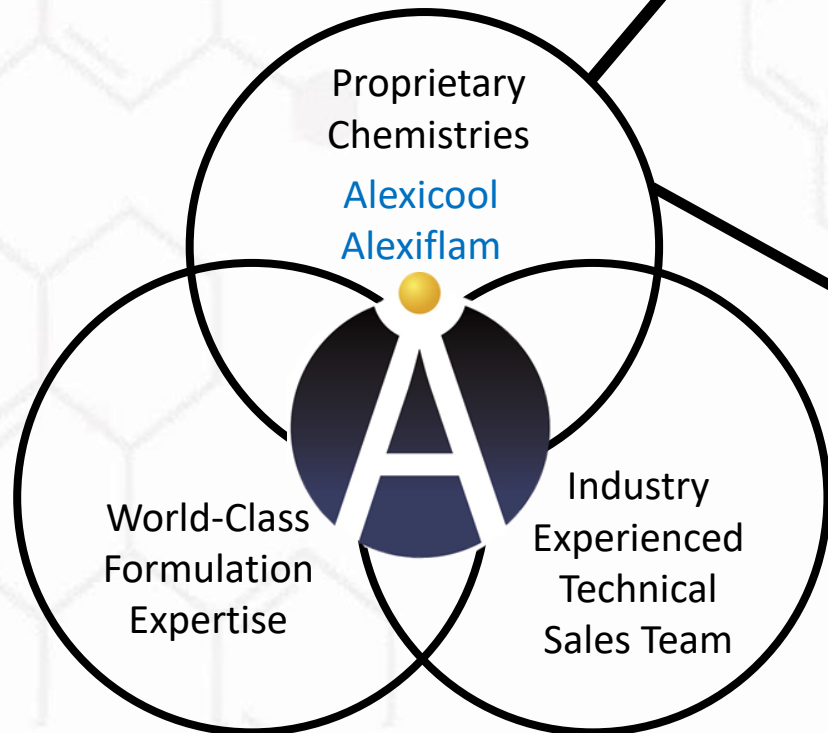
Alexiflam PB
for outdoor fabrics



Alexiflam NF
for cellulosics



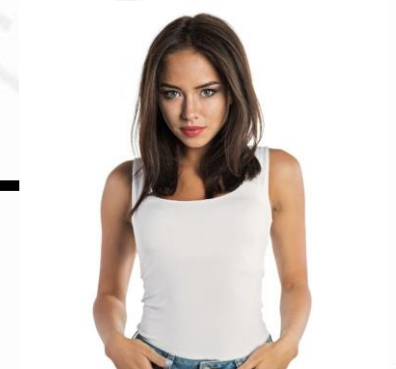
Alexiflam FR
for military fabrics



Alexicool AL
for mattresses



Alexicool HT
for pillows



Alexicool DR
for apparel



Toll Manufacturing Model

Regionally Diverse and Scalable Global Manufacturing Model



Holly Oak Chemical, Inc.



- **Partnerships with toll manufacturers allow almost infinite scalability** that allows Alexium to grow with demand without having to invest in any manufacturing capabilities or shift its focus away from its core competency of making truly novel, impactful chemical solutions.
- Manpak is located in Australia, Brocolor is located in Germany, Fujifilm is located in Belgium, and other partners located in the US.



Alexium Product Pipeline



Alexicool HT
for pillows



Alexicool AL
for mattresses

\$0.4M to \$24M
2015 - 2017

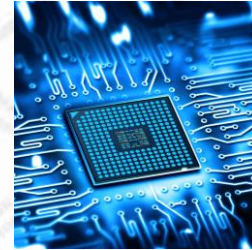
CURRENT



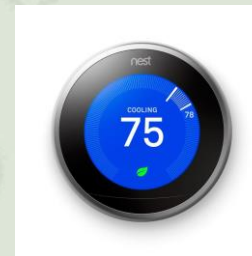
REGULATORY PRESSURE
STRONG CUSTOMER DEMAND
PROVEN SUPERIOR PRODUCTS



Alexiflam NF
for timber



Alexiflam SYN
for electronics



Alexicool
for construction



Alexicool DR
for apparel



Alexiflam FR
for wood coatings



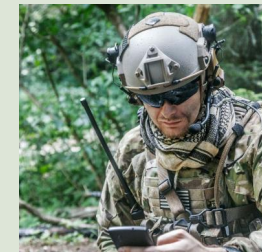
Alexiflam NF
for fleece



Alexiflam PB
for outdoor fabrics



Alexiflam NF
for cotton



Alexiflam FR
for military fabrics



Alexicool AL
for mattresses



Alexicool HT
for pillows

REVENUE PIPELINE



2018 Alexium Key Growth Silos



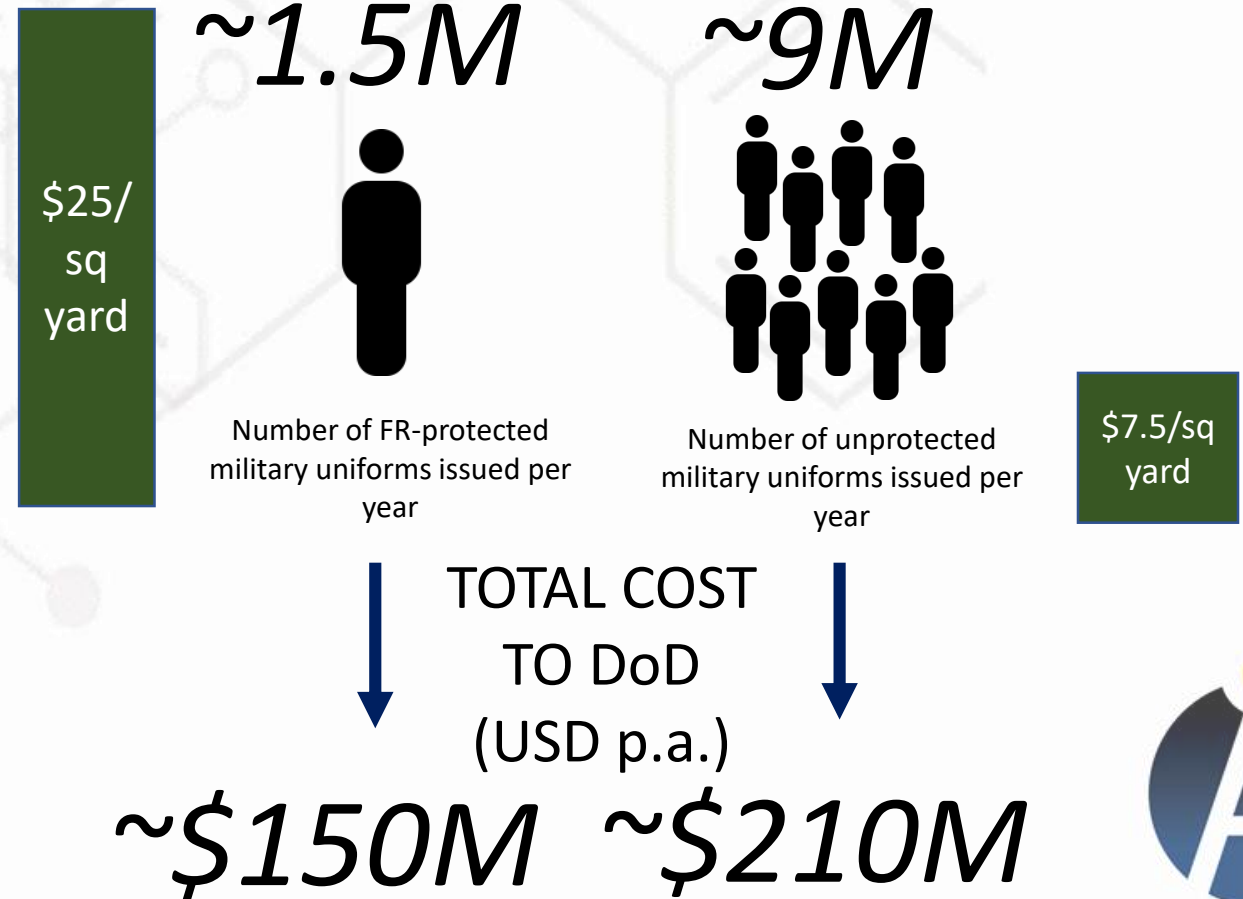
MILITARY UNIFORM FABRICS FLAME PROTECTION FOR ALL

Alexium has active engagements with several large suppliers to the DoD to:

- Reduce cost of FR-treated uniforms
- Add FR protection to non-treated uniforms

\$40-\$60M

*in estimated potential annual chemical sales for Alexium (USD) if engagements lead to contracts



2018 Alexium Key Growth Silos

ALEXIFLAM NF

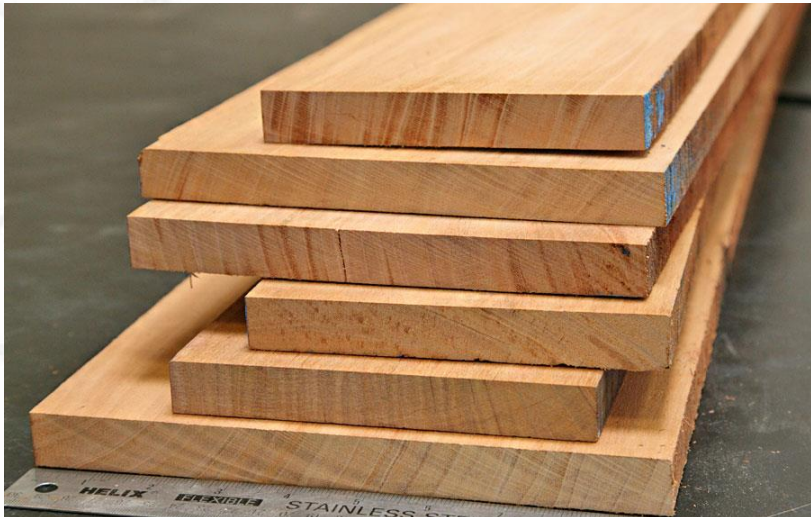
GROUNDBREAKING NEW CELLULOSIC FR

Incumbent materials used to FR treat cotton typically suffer from:

- Being **very difficult to process uniformly** – high rework and variable cost
 - Very high levels of **free formaldehyde**, a known carcinogen

Worker advocacy groups putting significant pressure to find alternatives

~\$100M-150M ANNUAL GLOBAL MARKET IN
NEED OF A SOLUTION



ALEXIFLAM NF provides:

- Alexium currently working with potential licensees to bring this product to the EU market with **significant sales expected in 2018**
- Fully REACH registered for sale into Europe and Asia with scale-up trials currently ongoing with **multiple potential customers** in Europe and Asia
- Alexium research currently developing a salt-free version for use in structural lumber
- Alexiflam NF could enable the first FR-cotton fleece, an innovation which would alleviate the amount of polymer entering the environment



2018 Alexium Key Growth Silos



ALEXIFLAM NF provides:

- **Extremely high level of uniformity** for similar product cost
- Can be processed with simple, common application methods
- Has no reportable **free formaldehyde**
- Expected TSCA compliance in 2018 for sale into US
- Alexiflam NF could enable the first FR-cotton fleece, an innovation which would alleviate the amount of polymer entering the environment



2018 Alexium Key Growth Silos



ALEXICOOL

A REVOLUTION IN BEDDING

- Alexium has quickly grown into a trusted supplier in the mattress cooling chemistry market. Even with recent growth, **significant upside exists**.
- Alexicool has cooling, flame retardant and anti-odor functionalities
- Alexium is **leading innovator** in thermal regulation metrics and methods
- Alexium **launching new products** which dramatically increase performance-to-cost ratio beyond current market leadership position

2017 Key Statistics

Mattress Units Sold

17M

Linear Yards Shipped

34M

Alexicool Market Saturation

4.1%

Potential Product Opportunity on Additional Components

3x

61M

122M

<1%



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Financial Analysis

Key Financial Figures

AU\$ Millions	H1 2018	H2 2017	% Change	H1 2017	% Change
Sales	8.7	12.4	↓ -30%	11.4	↓ -24%
Gross Profit	2.2	0.2	↑ 1000%	0.1	↑ 2100%
Operating Expenses	4.7	5.8	↑ -19%	5.9	↑ -20%
Operating Income	(2.5)	(5.6)	↑ -55%	(5.8)	↑ -57%
Net Income	(2.1)	(6.5)	↑ -68%	(5.8)	↑ -64%
Net Cash from Operations	(2.7)	(8.2)	↑ -67%	(4.5)	↑ -40%
Average Monthly Burn	(0.45)	(1.37)	↑ -67%	(0.75)	↑ -40%
Cash & Cash Equivalents	17.2	3.4	↑ 406%	12.4	↑ 39%

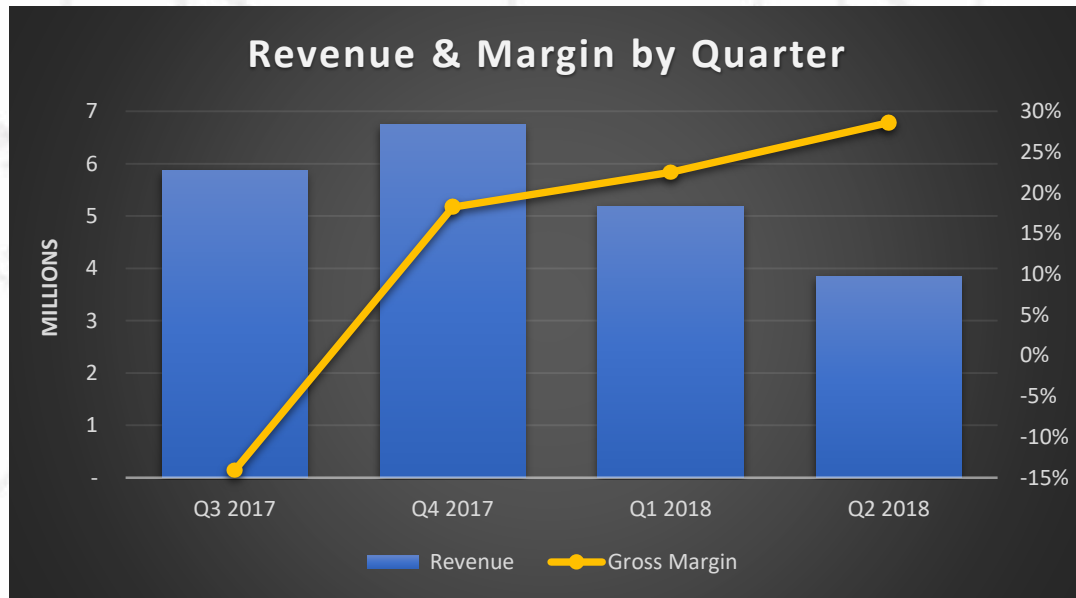
- Execution of strategic focus on higher margin growth
- Greatly increased gross margins along with relatively flat SG&A costs resulted in much improved Net Income for the period
- Focus on higher margin sales have also contributed to drastically reduced monthly cash burn which is complimented by strong cash position
- Cash reserves in place to facilitate further growth as Alexium targets large customer opportunities



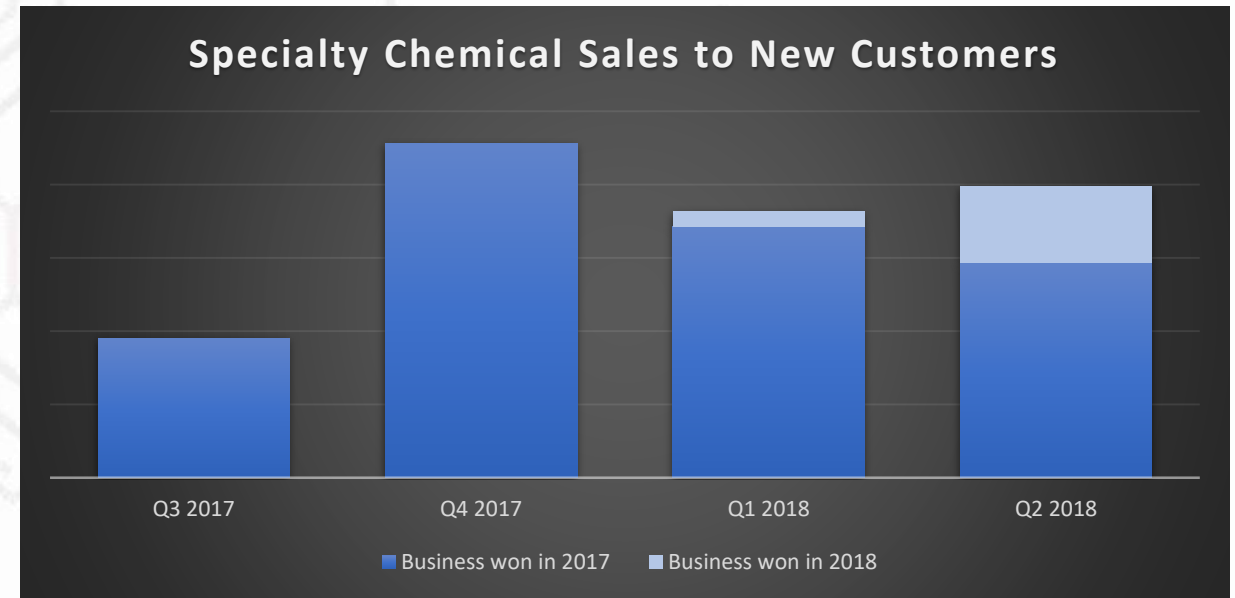
Financial Analysis

Primary Financial Drivers

Revenue & Gross Profit



- Movement away from low margin sales into H2, resulting in **GPM increase from 1% to 25%**
- Shipments to new customers up 50,000 lbs per month, representing **over \$500k in Q2 FY18**



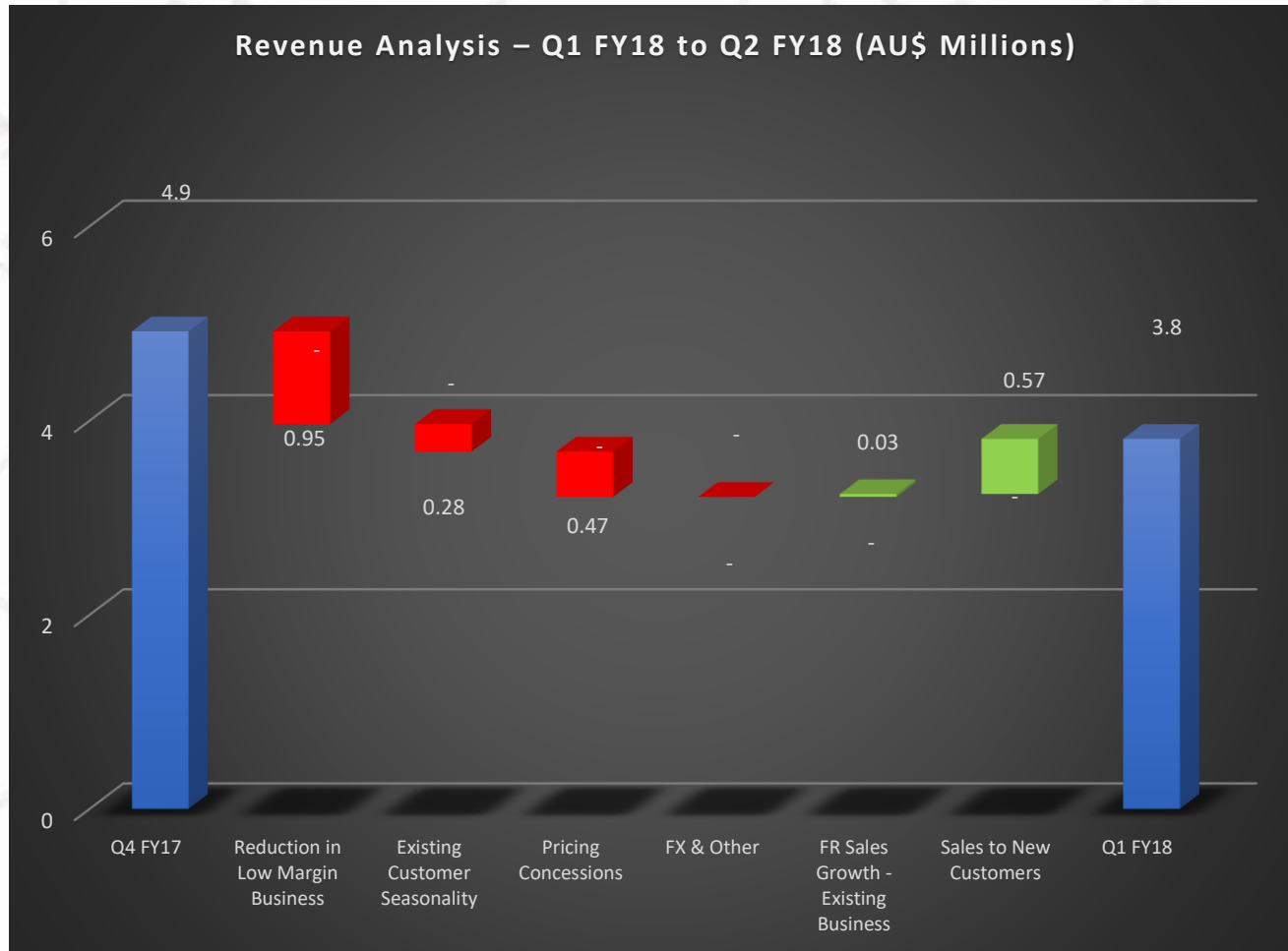
- Several customers still in scale-up, representing **future upside potential**
- Seasonality in bedding began to return to normal at the end of Q2



Financial Analysis

Primary Financial Drivers

Sales



- Movement away from low margin sales into H2
 - Resulted in a planned \$2M phased reduction in revenue from H1 to H2
- Seasonality in Bedding
 - Sales volumes of Alexicool dropped from peak of 455,000 lbs shipped per quarter to an average 381,000 lbs shipped per quarter in H2



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Executive Management



Dirk Van Hying - Chief Executive Officer

Dr. Van Hying received his BS in Chemical Engineering from North Carolina State University before receiving his MS and Ph.D. in Chemical Engineering from The University of Illinois at Urban-Champaign studying the role of colloidal forces in the formation mechanisms of nanoscale particles. Dr. Van Hying joined Milliken Research Corporation in 1999 and had numerous roles covering fundamental research, leading teams to transition research into manufacturing, developing next-generation military fabrics and is a certified Six Sigma Black Belt.



Aaron Krech - Chief Financial Officer

Mr. Krech serves as the Chief Financial Officer at Alexium International Group Limited. Mr. Krech has previous experience in corporate treasury analysis and risk management at Blue Cross and Blue Shield. He has earned a BA in Accounting and MBA in International Finance from the Darla Moore School of Business at the University of South Carolina.



Robert Brookins - Vice President of Research and Product Development

Dr. Robert (Bob) Brookins- Ph.D., M.A.E. B.A. B.Sc is Vice President of Research and Product Development. 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.



Scott Hunter - Vice President of Sales and Marketing

Mr. Hunter holds a Bachelor of Science in Chemistry from the University of Dayton in Ohio. He possesses over 20 years' experience in solution sales and leadership within the specialty chemical field. Mr. Hunter has a successful track record within both Fortune 500 and mid-cap privately held organizations. Mr. Hunter is a versatile leader who is passionate about identifying root-barriers impeding success while establishing strategic processes, partnerships, and innovative approaches to unlock growth within companies.



Board of Directors



Gavin Rezos – Non Executive Chairman

- Extensive international investment banking experience
- Held CEO and Board positions in successful technology companies in Australia, the UK, US & Singapore
- Former Non Executive Director of Iluka Resources, Department 13, Metalysis PLC and a former Investment Banking Director at HSBC



Congresswoman Karen Thurman, (D-FL) – Non Executive Director

- Congresswoman Karen Thurman served in the United States House of Representatives from 1993 to 2003
- Served on the influential Congressional House Ways and Means Committee (United States Federal Budget)
- Prior to being elected to Congress in 1992, Thurman served in the Florida State Senate for 10 years



Craig Metz – Non Executive Director

- Partner at Nelson, Mullins, Riley and Scarborough LLP with over 20 years experience in legislative and regulatory affairs
- Served as Chief of Staff to the late Congressman Floyd Spence (R-SC) and Held staff positions in the United States Senate and House of Representatives
- Appointed to senior positions in the Executive Branch of the Federal Government



Board of Directors



Claire Poll – Non Executive Director

- Founding Executive for the October listing of Verona Pharma plc (Nasdaq:VRNA)
- Worked as a Director and general counsel in listed companies in the US, UK, and Australia
- Holds a post graduate diploma in Applied Corporate Finance, M&A and Advanced Industrial Equity Analysis



Brigadier General Stephen Cheney – Non Executive Director

- Former Inspector General of the Marine Corps and Commanding General of Parris Island Marine Base
- Former Deputy Executive Secretary to U.S. Defense Secretary Dick Cheney under President George H.W. Bush
- Was on the Secretary of State’s Foreign Affairs Policy Board and his International Security Advisory Board
- Currently CEO of the American Security Project in Washington, DC

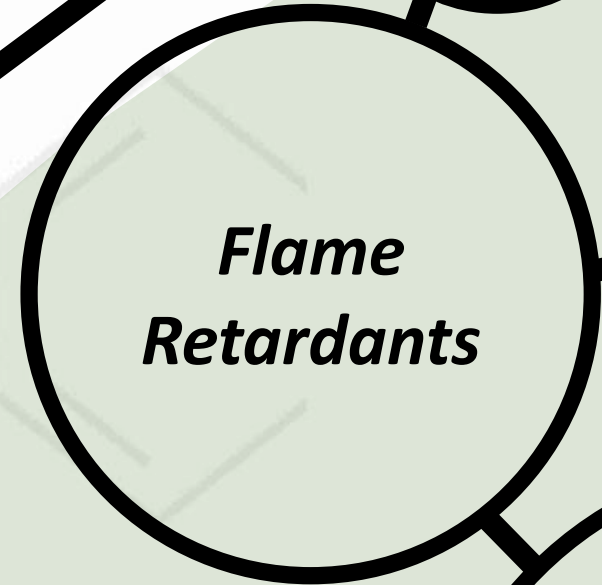
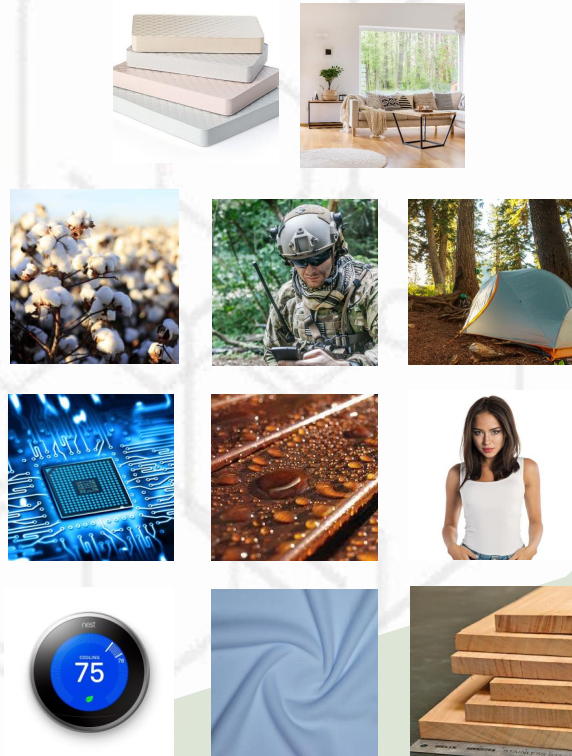
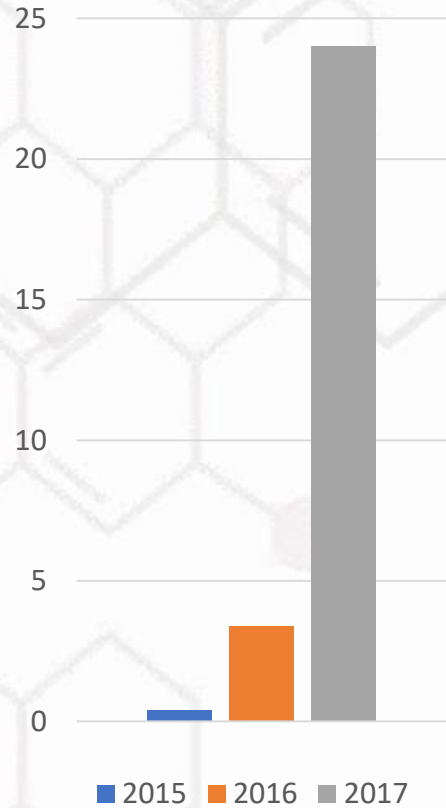


Sue Thomas – Non Executive Director

- Former Director and Chair of Audit and Risk at Grant Thornton Australia Limited from 2011 to 2016
- Current Chair of the Audit & Risk Committee of PEXA Limited and of Temple & Webster Limited (ASX:TPW)
- Senior Executive Coach since 2011 at Foresight Global Coaching, having successfully coached C Suite executives at ASX top 50 companies



The Alexium Trajectory



- Customer-focused
- Differentiated products
- Market-driven R&D
- Agile manufacturing

- Growing product offering
- Rapidly growing addressable market
- Market-driven R&D
- Agile manufacturing

- \$10B current markets
- Platform products
- Expandable business model





ALEXIUM

SPECIALTY CHEMICALS AND SOLUTIONS

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