



Alexium International Group Ltd (AJX.ASX)

Eco-friendly fire retardant heading into combat

Event:

- We initiate research coverage on Alexium International Ltd (AJX).

Investment Highlights:

- Operations established in the US Flame Retardant (FR) market:** based in South Carolina USA, Alexium is focused on the licensing of proprietary FR chemicals into the US, EU and Asian markets.
- Transition from R&D to commercialisation well underway:** over the last 18mths, Alexium has successfully transitioned from the R&D phase to full scale-up of commercialisation with over 20 commercial customers signed for testing and maiden supply contracts signed, including working with US Department of Defense on the next generation army combat uniform.
- US\$7b global commercial FR market growing at 5% CAGR to 2019:** global economic recovery in manufacturing, stringent fire safety regulations and bans on brominated and halogenated chemicals are all drivers that provide FR market growth towards US\$10b in 2019.
- US regulatory change drives customers to eco-friendly FR products:** Legislative push continues to ban a number of toxins still sold by its competitors and not present in Alexium's chemistry. Key driver for customers seeking new FR solutions to eradicate brominated and/or halogenated FR products, the traditional mainstay of FR.
- Sales pipeline could deliver 10x growth in FY16 revenue:** the target commercial industries for textiles, automobiles and transport, flooring and furnishing represent a US\$2.2b market in 2019. A conservative 3% market share would see revenue jump from US\$5m to US\$55m in one year alone with the company's sales pipeline experiencing weekly growth to support our estimates.
- Contracted to develop next generation US army combat uniform:** working with US Department of Defense on next generation army combat uniform. Success case in 2015 would open up immediate US\$300m market and significant long-term annualised contract opportunity across US and NATO defense agencies as well as validate company's FR chemistry globally.
- Capital light, long-term annualised revenue with high margins:** typical supply contracts will be a minimum of 5-7yrs with healthy EBITDA margins of 30-35%. Toll manufacture of FR chemicals supports a capital light operating model and allocates growth capital to the customer engagement process and sales pipeline vs capex for facilities and distribution.
- Blue-sky valuation potential could exceed US\$1 billion within 4 years:** we estimate a conservative 10-15% market share over a 4yr period would generate ~US\$250m in annualised revenue and ~US\$90m and US\$60m EBITDA and NPAT respectively where the US equity markets would apply 20x PER multiple.

Recommendation

- We initiate on Alexium with a **BUY** recommendation with a price target of **\$1.10/share** based on our EV/EBITDA valuation range of 13-15x FY16.
- Catalysts for the stock will include ongoing contract wins in the commercial sector, the inclusion in the US Army's next generation FRACU program and demonstration of quarterly revenue growth.

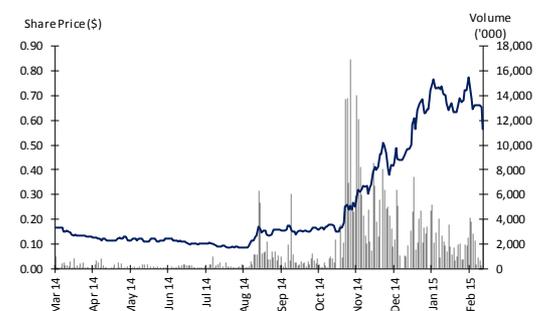
Rating	BUY
Previous	n/a
Price Target	\$ 1.10
Previous	n/a

Share Price (A\$)	\$ 0.59
52 week low - high (A\$)	0.08 - 0.80
Valuation (A\$/share)	1.10
Methodology	EV/EBITDA
Risk	High

Capital Structure	
Shares on Issue (m)	238
Shares on Issue diluted (m)	275
Free Float (%)	90%
12mth Av Daily Volume ('000)	1,513
Market Cap (\$m)	161
Cash (\$m)	5.3
Debt (\$m)	0.0
EV (\$m)	156

Key Metrics	2014a	2015e	2016e	2017e
Revenue (\$m)	0	5	55	97
EBITDA (\$m)	-4.2	1.6	17.7	30.9
NPAT (\$m)	-4.4	0.6	17.0	30.2
EPS (c)	-0.02	0.00	0.07	0.13
Revenue Growth (%)	n/a	1966%	1005%	75%
EBITDA growth (%)	n/a	121%	267%	94%
NPAT margin (%)	n/a	32%	32%	32%
EPS growth (%)	n/a	89%	262%	94%
EV/EBITDA	-37.0x	97.2x	8.8x	5.0x
PER	-31.6x	248.4x	8.2x	4.6x
EV/Revenue	642.9x	31.1x	2.8x	1.6x

Share Price Graph



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BACKGROUND

Alexium is focused on the next generation of FR chemicals that are eco-friendly and hold a cost advantage over its competitors.

Alexium has successfully transitioned from the R&D phase to that of commercialising the FR product portfolio with over 20 customers live in the sales pipeline.

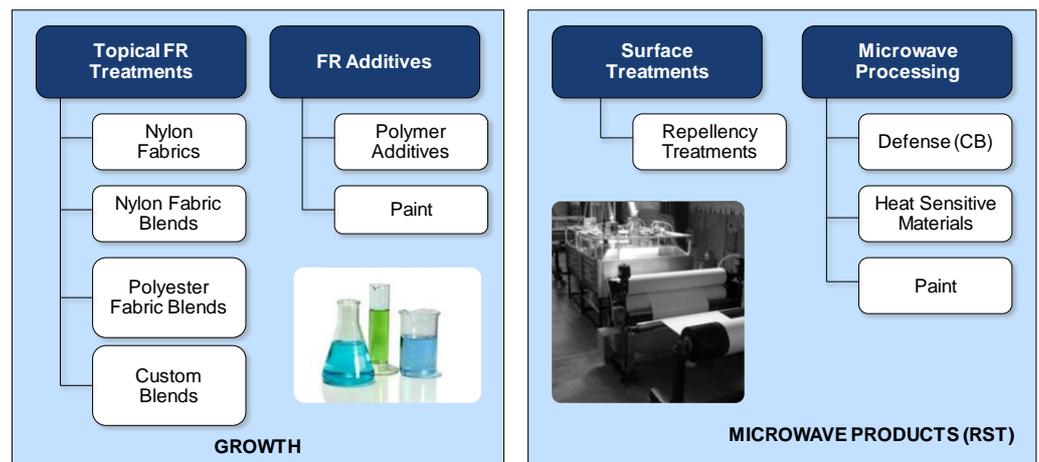
We estimate the immediate addressable market for Alexium in the US and EU is at US\$1.7b growing to US\$2.2b in 2019.

- Alexium International Group Limited (ASX:AJX) (**Alexium**) is a specialty chemicals company focussed on the development and licensing of proprietary flame retardant (FR) chemicals and reactive surface treatment (RST) technologies. The company's operations are located in Greer, South Carolina, USA.
- Listed on the ASX in 2010, the origins of the business followed the acquisition of a Reactive Surface Treatment (RST) platform technology originally developed by the US Air Force in response to the threat from chemical and biological warfare agents. After US\$30m had spent on the technology, Alexium acquired the RST platform in order to deliver solutions to both the military and commercial customers.
- In 2011 the focus switched to the development of a suite of 'next generation' Flame Retardant (FR) chemicals with patented technologies and products that provide a competitive advantage to its end users and displace the incumbent FR suppliers:
 - **Environmentally friendly 'green factor'**: contains no harmful compounds that exist in established FR coating products (bromides, halogens, chlorine, antimony, heavy metals, etc.);
 - **Cost effective** – Alexium's FR chemical portfolio is targeting a cost advantage of up to 50% of its current competitors given ease of application and chemistry set.
 - **Performance enhancing**: production tests have shown to improve adjacent performance attributes of the final fabric (i.e. strength and durability).
 - **Legislative support**: new legislation in the EU and US has led to the restriction or elimination of a number of brominated/halogenated compounds.
- Over the past 12-18mths, the company has successfully transitioned from the R&D phase to that of commercialising the FR product portfolio with initial sales now underway. Alexium expect commercial deals will provide long term recurring revenues and at healthy margins ranging 30-35%. Recent progress includes:
 - Over 20 customers have applied Alexium's FR treatments to textile materials that have passed flame retardant test standards and specifications;
 - 9 customers completed a scale-up phase which have passed all respective fabric performance specifications;
 - 3 customers moved through to commercial production of textiles with the Alexium FR applied;
 - 2 customers entered into supply contracts for sustained revenue to commence in the 2Q 2015. All contracts are expected to be multi-year with ramp up of volumes; and
 - Contracted by the US Department of Defense (DoD) to work with the US Army to develop the next generation Fire Resistant Army Combat Uniform (FRACU).
- Alexium is chasing a share of the global FR market that is expected to reach US\$10 billion by 2019, up from US\$7 billion in 2014, according to independent market analysis by MarketsandMarkets.
- The target commercial industries are: textiles, automobiles and transport, flooring and furnishing. These 3 markets alone represent US\$3.4b in sales by 2019, up from US\$2.5b in 2014 (a growth rate of 5% YoY).
- We estimate the immediate addressable market for Alexium in the US and EU is at US\$1.7b growing to US\$2.2b in 2019. If we assume Alexium can achieve a conservative 10-15% market share over the same period this would equate to annualised revenue >US\$250m, generating very healthy 30-35% EBITDA profit margins.

SPECIALTY CHEMICALS BUSINESS

- While the primary focus for the company is on developing FR chemicals for customers across multiple large market sectors, Alexium retains a platform of specialty chemical solutions beyond FR product range. Product verticals include:
 - Eco-friendly FR treatments for natural and synthetic fabrics.
 - Development of FR polymer additives for non-textile applications (i.e. plastics and paint).
 - Smart surface treatments for high performance materials (i.e. repellency).
 - Multi-functional treatments for military applications.

Figure 1: Summary of Chemicals and Processes



Source: Alexium

Flame Retardant Chemicals

- Focus of the company is now on the commercialisation of its portfolio of halogen and bromide free FR products that offer cost and performance advantages. The development of new products also continues as the interaction and performance testing with end customer’s ramp up. Figure 2 below outlines the FR product set now being commercialised.

Figure 2: FR Products

PRODUCT	TARGET MARKETS	REVENUE TARGET PER YARD (USD)
ALEXIFLAM	FR wool industries represent > 10m yards/yr	\$1.00 – 2.00
FR chemicals for Wool Blends & Natural Fibers	Strong interest from transport industry & decorative fabrics Effective on high natural fibers i.e. wool and cotton	
ASCALON	> 4m yards/yr in Nth America across military clothing, law enforcement, industrial workwear, outdoor textiles, backpacks	\$1.50
FR treatment for Nylon	Industries where halogen-free chemicals preferred due to environmental concerns	
NYCOLON	> 25m yards/yr for standard military uniforms	\$2.50
FR treatment for Nylon blends	> 25m yards/yr for industrial workwear applications Competes with higher cost aramid-blends	

PRODUCT	TARGET MARKETS	REVENUE TARGET PER YARD (USD)
NUVALON	Workwear and Military	\$2.00
FR chemical for Polyester Blends	Polyester is the most-used synthetic fiber globally	
POLYTRON	Multi-million yard global market	\$2.50
FR treatment of Polyester	Suitable for furnishings, upholstery, curtain and contract fabrics	
OMNITRON	Global market over 1 billion yards/yr	\$1.00
FR chemicals for High Natural Fiber Blends	Upholstery and furnishings Effective on natural fabrics such as Cotton Wash durable product up to 20 cleaning cycles	
CUSTOM BLENDS	Back coating to furnishing fabrics and technical textiles for upholstery applications	tbc
FR Package		

Source: Alexium, FSB Research

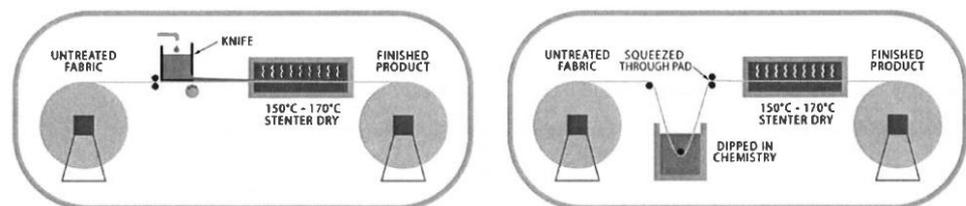
Other FR Product Extensions in the Pipeline – Polymer Additives

- **Plastics:** the company has initiated early development work with a major FR chemical company to develop a new product line with the potential for large volume applications.
- **Paint:** yet to be initiated with a partner, however there are mid-size applications to improve the fire/heat resistance of painted surface.

Non-conventional Applications & Capabilities

- **Chemical & Biological Repellency:** Cleanshell chemistry to offer a new generation of liquid repellency protection in chemical and biological threat scenarios. Independent testing confirms excellent water and oil repellency, but has also dramatically increased the repellency of Chemical Warfare Agent (CWA) simulants (i.e. slows the penetration of CWA).
- **Paint:** yet to be initiated with a partner, however there are mid-size applications to improve the fire/heat resistance of painted surface.

Figure 3: FR Chemical Application Process



Source: Alexium

Figure 4: Alexium’s FR Characteristics and Benefits & Example of NyCo FR treated burn test



Source: Alexium

GROWING INTELLECTUAL PROPERTY PORTFOLIO

- The company has developed patented technology portfolio to include over 20 patents now granted in 9 countries.
- 3 patent applications specifically related to FR chemical treatments and FR emulsions have been lodged that overlap with the existing patent library in addition to a number of trade secrets, trademarks and branding provide protection of the company’s IP and competitive advantage.

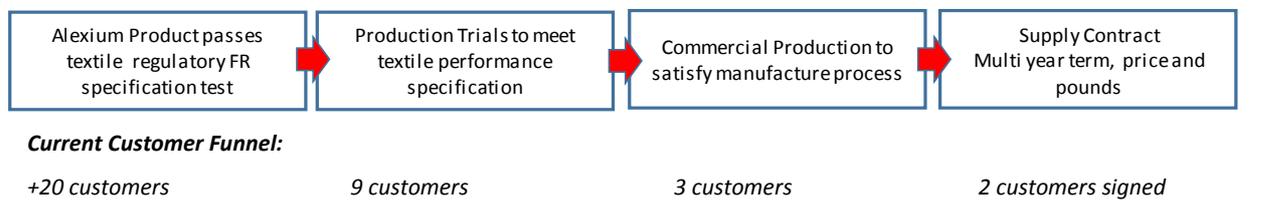
COMMERCIAL PARTNERS

- Given the specialty chemical markets are large and well established, a number of partners have been signed to assist with licensing, distribution and for chemical toll manufacture, providing the company with a global platform.
 - **Duro Textiles** is a US textile finisher and a licensee of the Ascalon product for North America.
 - **iTextiles** is a Pakistani chemical distributor of Alexium’s FR products in Pakistan, UAE, Sri Lanka and Saudia Arabia.
 - **Essex/EuroFlam** is a UK based FR commission finisher specialising in home textiles, furnishings and contact fabrics. EuroFlam is a customer and partner for AJX’s FR products in the UK.
 - **Marlin Inc. & InChem Inc.** are contracted to ‘toll manufacture’ the company’s FR chemicals and ship to the customers. All patented products are branded, manufactured and supplied from North and South Carolina locations.
 - **InnovaNet** are engaged to identify a pipeline of opportunities outside the traditional textile, fabric and floor markets.

REVENUE MODEL & SALES CYCLE

- The key revenue driver for AJX is a function of the volume of FR chemicals required by customers that is sold on a USD/pound of chemicals basis. The quantity of FR chemicals applied in the application process is approximately 0.36 pounds per linear yard of production.
- While pricing of the chemicals for each supply agreement will remain commercial in confidence and the company is in the early stage of revenue generation, guidance has been provided for revenue on USD/linear yard with the range of \$1.00 to \$2.50 (refer Figure 2).
- Healthy margins exist across the product range with guidance of average EBITDA margins of approximately 30-35% across the portfolio. Textile industry margins typically range in the 20-30% mark.
- With respect to the sales process, it is important to understand the introduction of the company’s FR chemistry to the textile finishing process needs to take place with ‘minimal to no change’ in the performance characteristics of manufacturing complexity. Figure 3 outlines the sales process steps required.
- Key driver for an increase in the customer pipeline will be customers looking to eradicate brominated and/or halogenated FR products, the traditional mainstay of FR.
- Management have indicated up to 3 new leads are being generated from targeted sales calls by the company. Sales team consists of 3 full-time employees.
- While the company has partnered with groups to license the Alexium product, the most effective route to a sales contract is to work with a prime contractor responsible for supplying the end product (i.e. a uniform) or textile.
- A typical sales cycle from initial fabric test work through to a supply contract can take between 6 and 12mths. Figure 5 outlines the key stages and scale-up process.

Figure 5: FR Chemical Sales Cycle & Scale-up Process



Source: FSB Research, AJX

- We highlight that due to the imbedded nature of the FR product once installed into the end customer’s fabric selection and manufacturing process, we expect the term of supply contracts will have a minimum 5-7 year term, with some contracts that could extend +10yrs.
- An example is the automotive industry when a manufacturer is working on a new model vehicle and is updating its upholstery choice. The car maker will decide on whether to upgrade its selection to meet the new US & EU standards for FR chemicals. In doing so, it will lock into a long-term program for the selected fabric and FR treatment.
- While we acknowledge that mature established industries are often hard to displace competitors, what we like about Alexium’s market opportunity is the fact that legislative change coupled with a ‘greener’ industry provides a customer base that seeks to either:
 - Make a holistic change to their FR chemistry provider; or
 - Select a number of fabric styles within their range to make the change.
- This market driver plays directly into the hands of Alexium where they have a first mover advantage as the only green alternative that meet the new environmental standards.



FRACU program for the US Army would produce 4-6m yards of NyCo fabric per year, which translates to potential revenue of US\$10-16m/yr



Defense Sector Pipeline – Military Uniforms

- In Q4 2014 the company entered a contract with the Batelle Memorial Institute (world's largest non-profit research and development organisation) through the US Army Natick Soldier Systems Centre (**Natick**) and to develop the next generation Fire Resistant Army Combat Uniform (FRACU). Natick are the advisor the US Department of Defense (DoD) and its branches on what fabrics to use that have been 'vetted and proven reliable'.
- To date Alexium has demonstrated its suite of FR chemicals are performance enhancing, cost effective, durable, environmentally friendly and suited to the new generation 50/50 nylon/cotton fabric (NyCo) blends selected by the DoD that target improved durability and performance for its uniform fabrics.
- To date evaluation of the NyCo fabric with the company's FR product has passed the FR specification tests related to strength and durability and now progressing through the next two stages to integrate the FR treated NyCo fabric into the FRACU program.
- **Based on historical volumes, the FRACU program for the US Army would produce 4-6m yards of NyCo fabric per year, which translates to potential revenue of US\$10-16m/yr for AJX.**
- **Successful outcome would see a supply agreement signed and revenue commence late 2015.**
- We highlight a success case in the FRACU program could lead to significant new business all of the military branches that includes uniforms and equipment. New opportunities will extend to NATO countries who tend to rely on the US to spend money on R&D and then replicate. This bodes well for a cascade effect to other nations should Alexium be successful in this program.
- In the Defence sector, Alexium estimates the market in the US alone could be a ~US\$360m business.

Commercial Sector Pipeline

15 customers are now engaged across the transportation and decorative fabric markets represent \$20m in sales revenue potential.



- The sales pipeline for the commercial sector continues to grow with significant steps to have over 15 customers committed to the scale up process. Commitment includes resources in the form of time, personnel and funding.
- Atlanta based Innovanet has been engaged to help identify the company's pipeline of opportunities outside the traditional textile, fabric and floor covering markets.
- **Transportation Upholstery:**
 - **5 customers engaged that represent potential annual sales revenue of US\$10m, with scope to expand.**
 - 3 customers under trial production, includes minor revenues.
 - Submarkets include: public transportation fabrics, automotive bodycloth, and airplane fabrics.
 - Traditionally a market that consumes halogenated FR chemicals and now requiring eco-friendly FR solution.
- **Decorative Fabric Markets for Upholstered Furniture:**
 - **3 customers engaged that represent potential annual sales revenue of US\$10m, with scope to expand.**
 - 3 customers under trial production, includes minor revenues
 - 1 customer converted to recurring supply contract for an initial annualised revenue of US\$1-1.5m.
 - Second customer converted to supply contract for the Alexiflam product with revenues to ramp up over 2015.
 - Additional supply contracts to be announced in 2Q CY15.
 - Traditionally a market that consumes halogenated FR chemicals and now requiring eco-friendly FR solution and passes tough new Californian laws (TB 117-2013).
- **In summary, 2 supply contracts have been signed to have the company on track for an exit rate in FY15 of circa \$5 million in revenue. We have made an estimate of what the FY16 and FY17 revenue and profitability could deliver in Figure 7.**



GLOBAL MARKET OVERVIEW

- Alexium recently updated the market with the results of an independent research firm's analysis on the global FR market. MarketsandMarkets, who is US based, details the industries, regions and types of chemistries represented across the world to help AJX prioritise the company's market opportunities.

Factors Driving the FR Market

- **Global Economic Recovery:** in recent year's economic recovery has led to an increase in manufactured goods being produced that require FR treatments, in particular: textiles, apparel, automotive and transport, and construction.
- **Stringent Fire Safety Regulations:** industries are implementing stringent fire safety regulations leading companies to look at more effective performance in their FR solutions.
- **Bans on brominated and halogenated chemicals:** one the biggest drivers for change will be the banning of some chemicals used in the FR treatments. Specifically, bans on brominated and halogenated chemicals will drive the growth in eco-friendly chemistries and new solutions. Organophosphorus FR products are expected to have the highest rate of growth in FR treatments used.

Regulatory Changes are a Key Driver for Sales in 2015/16

- **US Legislators supporting Eco-friendly FRs to eradicate noxious chemicals used on today's FR chemistries:** Senators in Washington are working to submit a bill to ensure that noxious FRs from upholstered furniture and children's products are removed. Proposed legislation would call for the elimination of the top ten most toxic chemicals used in the market that make up a number of brominated/halogenated compounds. Alexium's competitive advantage that it does not use any of the chemicals proposed to be banned. A number of key Congressman from Washington have been to visit Alexium's facility.
- **President Obama has signed the 2015 National Defense Authorization Act:** signed in December 2014, the Bill calls on the Secretary of Defence to study emerging FR technologies to confirm cost-effective protection can be provided to a wider range of service members. While the current FR requirements are OK and do not need modification, the prohibitive cost of FR materials has meant FR uniform requirements currently extend only to specific military occupational specialties or deployed to hostile environments. This legislation is perfectly timed to coincide with Alexium's work with Natick to develop the next generation of uniforms for the DoD given Alexium's cost benefits that are material to existing products and higher performing.
- **Legislation in Europe (EU) adopted to reduce or halt the sale of brominated FRs:** In the EU the use of certain BFRs is banned or restricted on plastics, textiles, electrical equipment, etc.

FR Markets Growing at +5% CAGR

- The headline numbers from the study are as follows and support the company's ambitions to transition to a significant revenue generating company in 2015 and into 2016, and also demonstrate the blue sky in this business should it execute on its plan.
 - Global chemical FR market was US\$7 billion in 2014 and increasing by an average CAGR of 5.7% per year, rising to US\$10 billion in 2019. This includes all markets and industries.
 - This growth is highlighted by organophosphorus FRs having the highest rate of annual growth of 7.5% over the period and driven by the push for eco-friendly products and use of natural fibres. We highlight the company's Alexiflam product falls into the category.

Global chemical FR market was US\$7 billion in 2014 and increasing by an average CAGR of 5.7% per year, rising to US\$10 billion in 2019.

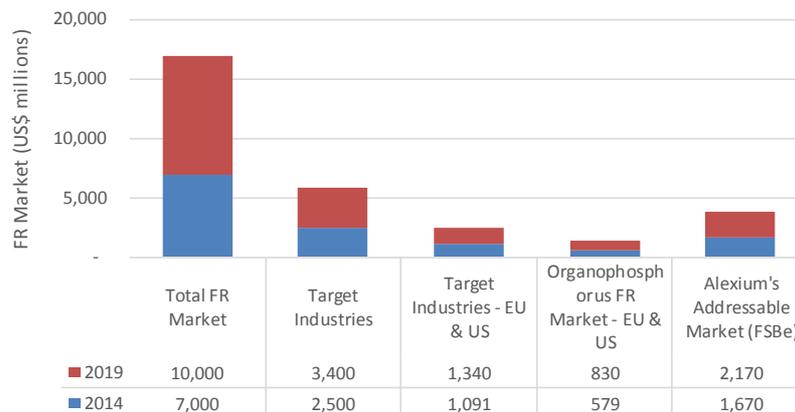


- The commercial industries that Alexium is now focussed account for approximately 25% of the global market (US\$2.5 billion in 2019) and include: Automotive and Transportation, Flooring and Furnishings and Textiles.
- Specifically in the target markets across North America and EU that are now highly driven by regulatory change to eco-friendly FR chemicals, the market amounts to US\$1.34 billion in 2019, up from US\$1b and a growth rate of 5%.
- In North America the organophosphorus FR market is increasing from US\$267m in 2014 to \$391m in 2019, with the growth rate to increase as new regulations come into place. Likewise in EU, the market is increasing from \$312m in 2014 to \$439m in 2019.
- **In conclusion, key legislative change along with a shift to eco-friendly FR chemicals across the industries that Alexium is targeting, provides the company with enormous scope for rapid growth and revenue aspirations.**

Figure 6: FR Global Market vs Alexium’s Addressable Market (US\$m)

Addressable Market	2014	2019
Total FR Market	7,000	10,000
Target Industries	2,500	3,400
Target Industries - EU & US	1,091	1,340
Organophosphorus FR Market - EU & US	579	830
Alexium's Addressable Market (FSBe)	1,670	2,170

We estimate Alexium’s addressable market in the US and EU alone is at US\$1.7-2.2b, including defense uniforms.



Source: MarketsandMarkets, FSB Research

Competitor Landscape

- Over the last 20-25 years, the global textile industry (ex-China and the third world) has witnessed a scaleback in R&D with a clear focus on short-term financial targets vs spend on new product innovation. That in turn has led to a vacuum of resources inside textile manufacturers with specialist R&D, chemistry and finishing knowledge. With the future growth coming in textile manufacturing, customers are now looking to solution partners to assist with the development of new durable and low cost products.
- The existing market for FR products is based on a ‘catalogue approach’ of chemistry products who include Chemtura, ICL, Huntsman.
- Most competitors are still producing brominated or halogenated products, both durable and non-durable, with many chemistries requiring specialist machines for application (i.e. higher cost).
- Alexium’s selling proposition to customers is based on the unique combination of:
 - i. Unique set of proprietary chemistries that no one else has;

With the future growth coming in textile manufacturing, customers are now looking to solution partners to assist with the development of new durable, environmentally friendly and low cost products.



- ii. Formulation expertise to make solutions work at almost any price point (i.e. flexibility);
- iii. Integration with existing manufacturing facility and/or process; and
- iv. Textile knowledge to help our customers make their products work.

EARNINGS FORECAST

If we assume Alexium can achieve a conservative 10-15% market share over 4yrs this would equate to >US\$250m in annualised revenue

Applying a growth stock EV/EBITDA multiple of 10-12x to our FY16 EBITDA of US\$22m, this yields a valuation range of A\$1.00 -1.20/sh.

- Given Alexium is in its early stages of growth and management is yet to provide meaningful guidance we have made an estimate of the future revenue and earnings on the basis of growth in market share using our estimate of the addressable FR market size for Alexium’s products in the US and EU markets (Figure 6).
- We have used a conservative assumption in market share ramp from 3% to 5% to 8% to 13% starting in FY16 through to FY19.
- Using company guidance of 30-35% we estimate EBITDA margins at 32%.
- We also highlight that supply contracts will typically be for >5-7yrs with the potential for ramp up in price with scale.
- Given FY15 is the first year of sales, we highlight the US\$5m revenue is based on the start of initial contracts commencing in the final quarter of FY15.
- In figure 6 estimate the immediate addressable market for Alexium at US\$1.7b growing to US\$2.2b in 2019. If we assume Alexium can achieve a conservative 10-15% market share over the same period this would equate to >US\$250m in annualised revenue generating an average 30-35% EBITDA profit margin.
- Figure 7 below highlights the unrisks valuation potential could exceed US\$1 billion within 4yr years of operations with blue sky remaining given our conservative market share assumptions.
- **Applying a growth stock EV/EBITDA multiple of 12-15x to our FY16 EBITDA of US\$18m, this yields a valuation range of A\$0.96 – 1.21/sh.**
- We have previously outlined our drivers for strong YoY revenue growth to be: 1) legislative and end-user shift to eco-friendly FR products; 2) end user cost advantages; & 3) superior product performance.

Figure 7: Profit & Loss (FSBe)

Profit & Loss (USDm)	FY14a	FY15e	FY16e	FY17e	FY18e	FY19e
Addressable Market	1,670	1,754	1,841	1,933	2,030	2,131
Market Share			3%	5%	8%	13%
Revenue	0.2	5	55	97	162	277
Revenue Growth	n/a		1005%	75%	68%	71%
EBITDA	-4.2	2	18	31	52	89
EBITDA Margin	n/a	32%	32%	32%	32%	32%
D&A	0.8	0.8	0.7	0.7	0.7	0.6
EBIT	-4.2	1	17	30	51	88
EBIT Margin	n/a	16%	31%	31%	32%	32%
Tax	0.2	0	0	0	17	30
NPAT	-4	1	17	30	34	58
12x EBITDA (USDm)		16	212	371	624	1,064
15x EBITDA (USDm)		19	265	464	779	1,330
Valuation range per share	(A\$)		0.96	1.69	2.83	4.84
	(A\$)		1.21	2.11	3.54	6.05
USD:AUD	0.80					
Shares on issue (fully diluted)	275					
Tax rate	34%					

Source: FSB Research



BALANCE SHEET & CASH FLOWS

- As at 31 December 2014, cash on hand was \$5.3m.
- Quarterly cash burn has averaged just under \$1.0m, which equates to an annual run rate of \$4m. Management guidance is for the existing cash, combined with a build up in revenues, will see the company achieve a cash flow breakeven milestone in the 2HCY15.
- Any material change in staff costs, marketing, R&D, and other working capital will be aligned with the scale up of operations to service growth in the customer pipeline of opportunities. Timing for an uplift in sales revenue and cash receipts from new contracts sold is expected in the 2H 2015.
- Given the company contract 'toll manufacturers' for its chemicals, it is a capital light business and does not require growth capex for new facilities or large inventory build of products as the sales pipeline scales up.
- The company has no debt, however we note convertible notes outstanding amount to \$0.7m. Terms include a maturity date 30/3/16, 12% coupon, conversion at lesser of 10c or 87.5% 30-day VWAP.

VALUATION

Figure 8: Equity Valuation

Description	A\$m	\$/sh
Enterprise Value	298.3	1.08
Net Cash	5.0	0.02
Corporate	-4.0	-0.01
Equity Value	303.3	1.10

Source: FSB Research

RECOMMENDATION & PRICE TARGET

We initiate with a BUY recommendation with \$1.10 price target

- We initiate on Alexium with a BUY recommendation with a price target of \$1.10/share based on our valuation range of \$0.96 – \$1.21. We believe the stock offers investors exposure to a significant global market driven by change, strong yoy growth and a shift to eco-friendly products.
- Alexium's product is perfectly timed to meet this change whilst delivering a low-cost high-performance product.
- Catalysts for the stock will include ongoing contract wins in the commercial sector, the inclusion in the US Army's next generation FRACU program and demonstration of quarterly revenue and earnings growth.

We initiate with a Buy recommendation and \$1.10/share price target

CAPITAL STRUCTURE & SHAREHOLDERS

- Alexium’s fully diluted capital base is 275m shares, which includes outstanding convertible notes and various options that are in the money (including 13m at 15c). Ordinary fully paid shares is 237.7m shares.

Figure 9: Significant Shareholders and Shareholder Mix

Significant Shareholders	
Gavin Rezos (Non-Exec Chairman)	9%
RAB Capital Holdings Ltd	7%
Piper Buchanan Ltd	6%
Shareholder Mix	
Top 20 Shareholders	44%
Directors, Management & Founders	20%
Institutional Investors	16%

Source: FSB Research, Alexium

RISKS

- **Financing risk.** Alexium may face issues with obtaining sufficient funding to further develop its business, including for acquisitions, hiring staff, rolling out new products, and research and development.
- **Currency risk.** While Alexium mostly receives revenues in US\$, both its reported earnings and share price are denominated in A\$. Any strengthening in the A\$ vs the US\$ may result in reduced earnings and/or a fall in the Alexium share price.
- **Competitor & Technology risk.** Alexium may face increased competition from competitors that may cause it to lose or suffer a slowdown in its company revenues. New and superior technologies from competition could render Alexium’s technology redundant and or place pressure on future pricing
- **Regulatory risk.** Unfavorable change to regulation or legislation could impact demand for supply of Alexium’s products. Operations for the company include: Europe, North America, Middle East, Asia, all of which have different regulatory requirements that could undergo change..

BOARD OF DIRECTORS

- **Gavin Rezos (Executive Director & Chairman).** Extensive international investment banking experience. Held CEO positions in companies in Australia, the UK, US and Singapore. Non Executive Director of Iluka Resources
- **Nicholas Clark (Executive Director & CEO).** Degree in Economics and Law with a postgraduate MBA and PhD in Management. Qualified Lawyer in NSW and with the NY State Bar Assoc. CPA with AICPA. Over 8 years of board level experience and representation
- **Criag Smith-Gander (Non-Executive Director).** Graduate Royal Military College Duntroon, 10 years military service. Former Director Investor Banking CIBC World Markets. Experienced company director, entrepreneur
- **Craig Metz (Non- Executive Director).** Partner at Nelson, Mullins, Riley and Scarborough LLP with over 20 years of experience in legislative and regulatory affairs. Served as Chief of Staff to the late Congressman Floyd Spence (R-SC). Held staff positions in the United States Senate and House of Representatives. Appointed to senior positions in the Executive Branch of the Federal Government.



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