



Initiating Coverage of Alexium with a BUY Rating & \$4.75/ADR Price Target

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Key Metrics

Price:	\$2.75
Price Target:	\$4.75
52-Week Range:	\$2.75-\$4.65
Cash (M):	\$0.9
Debt (M):	\$0.0
Book Value/Share:	\$2.59
<i>Book Value/Share: Book Value per ADR</i>	

Market Data

Market Cap (M):	\$9.6
Enterprise Value (M):	\$8.7
Shares Out (M):	3.4
Float (M):	1.2
30-Day Avg. Vol:	0.0
<i>Shares Out (M): ADR outstanding shares</i>	

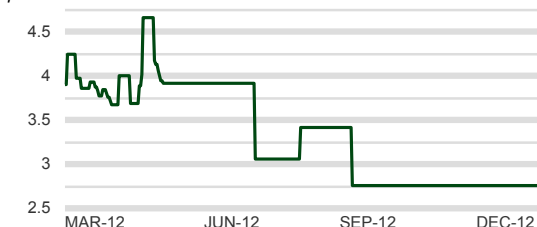
Merriman Estimates

	FY12A	FY13E
Sales (M)		
1Q	NA	NA
2Q	\$0.1	\$0.1
3Q	NA	NA
4Q	\$0.1	\$0.5
FY (Dec)	\$0.2	\$0.6
EV/S	43.5x	14.5x
EPS		
1Q	NA	NA
2Q	\$(0.44)	\$(0.41)
3Q	NA	NA
4Q	\$(0.42)	\$(0.32)
FY (Dec)	\$(0.86)	\$(0.72)
P/E	NM	NM

EPS: 1 OTC ADR = 40 common shares O/S

Company Description

Alexium International Group Limited develops and licenses its proprietary Reactive Surface Treatment (RST) technology. Its RST technology allows for the surface modification and attachment of nano particles or multiple chemical functional groups to provide functions, such as water proofing, oil proofing, anti-microbial, non-stick, and UV protection.



Investment Conclusion

Alexium International is pioneering patented eco-friendly and flame-retardant (FR) technologies that enhance the durability of many day-to-day textiles. The company is leveraging its relationship with the U.S. Department of Defense (DoD) to help implement its technology in a wide array of military textile distributors. We believe the expanding FR market is continually looking for green solutions, which should help Alexium acquire several high-margin, recurring revenue streams. Recently, the company struck a multi-million dollar partnership with Duro Textiles, which in itself could lead Alexium to profitability. **Today we're initiating coverage of Alexium shares at Buy. Our \$4.75 price target per ADR is based on 6-times multiple of our FY2014 revenue estimate.**

Investment Summary

Alexium is a pioneer in FR chemical development. The company's product portfolio and production processes leverage its powerful patented reactive surface treatment (RST) technology to apply coatings to many non-reactive (non-bondable) and easily flammable textiles, essentially transforming them into durable flame resistant fabrics. Alexium has also developed a green FR treatment for reactive (bond-able) materials and has begun leveraging its technology to coat materials that could eventually protect military and governmental personnel from the dangers of chemical warfare.

- **Alexium's recent partnership with Duro Textiles should accelerate near-term growth.** Duro produces nearly four million yards of nylon annually and is one of the military's largest suppliers of textiles. We believe licensing RST treatment to Duro for a nominal licensing fee of \$1 per square yard will result in a meaningful top-line growth for Alexium leading ultimately to profitability.
- **Reactive FR technology substantially increases market opportunity.** The company is finalizing its testing with reactive materials which will allow the company to provide FR to NyCo (cotton nylon blends) and polyester. We anticipate this could result in an additional 25-million yards of annual licensing fees from U.S. military uniforms alone.
- **The company's coating processes** often require unique microwave curing techniques it has patented, while at other times, normal oven-baking processes suffice, depending on the reactive nature of the fabrics employed.
- **Massive and growing FR chemical market.** MarketAndMarkets estimates global FR chemical sales will grow to \$7.1 billion by 2017, up from \$4.8 billion in 2011. We believe this growing market will be a primary driver in increasing Alexium's distribution channels going forward.
- **Potential commercialization and global distribution offer Alexium a long-term growth horizon.** Many industrial materials such as carpet use petroleum-based materials. But new stringent fire regulations make RST an appealing solution for the construction industry.
- **DoD investment creates an intrinsic value baseline for Alexium.** The DoD has invested over \$30 million to help develop Alexium's powerful coating portfolio. We anticipate large specialty chemical companies could be intrigued by Alexium's product line and may attempt to acquire the company to secure its valuable IP.

In short, Alexium is an emerging niche leader in the fire retardant chemical development industry and has partnered with leading military textile manufacturers which should result in accelerated revenue growth in the coming calendar year and potential profitability in 2H2014. **We like these shares at current prices and consequently initiate coverage of them at BUY. See page 6 for Valuation & Risks**

PLEASE SEE IMPORTANT DISCLOSURES ON PAGE(S) 9 - 10 OF THIS REPORT



Company Overview

Headquartered in Perth, Australia, Alexium is a pioneer in fire retardant and specialty chemicals. The company was founded as a developmental stage company in 2009 to test powerful RST technology developed by the DoD. RSTs primary function has been non-reactive materials but since then the company has expanded its product-line to include FR features for reactive materials and its *Cleanshell* chemical repellent technology to further leverage its brand and market opportunity.

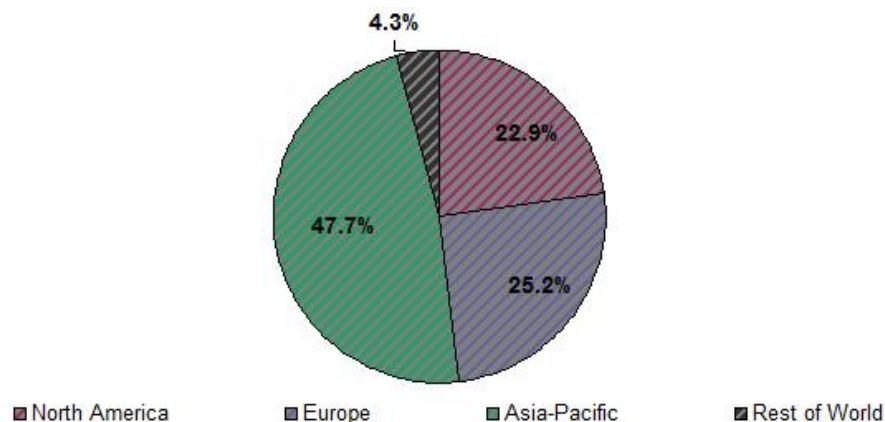
Due to its early stage, Alexium is not currently generating any notable revenue. However, we anticipate Alexium could strike deals with major textile manufacturers (think Duro) which will enable the company to generate revenue through the sale of initial start up equipment and more importantly through royalties and license fees on materials produced with their technology.

Market Opportunity and Overview

In recent decades population growth has resulted in global shortages of raw materials (metals, wood, etc.) to fill the needs of these people. As a result, synthetic petroleum-based polymers such as nylon have become a growing popular substitute for natural raw materials necessary for apparel; unfortunately, these materials are easily combustible. Thus, development of flame-retardant materials has become a focal point of large chemical companies such as Albemarle Corp. (ALB, \$59.20, NR), AkzoNobel N.V. (AKZA, \$44.90, NR), Chemtura Corp. (CHMT, \$20.61, NR), Clariant AG (CLN, CHS11.44, NR), Daihachi Chemicals (private) and LANXESS AG (LXS, €67.42, NR),

According to MarketsAndMarkets (private), flame-retardant chemical sales continue to grow globally with spending expected to reach \$7.1 billion in 2017, up from \$4.8 billion in 2011--a CAGR of 6.9%. The global market for FR chemicals is quite diverse with North America making up only 22.9% of global sales. However, the emerging markets of the Asia-Pacific more than double the current domestic market at 47.7%. Exhibit 1 more closely examines the global flame retardant chemicals market.

Exhibit 1: 2011 Global Market Share for Flame Retardant Chemicals



*Source: ICIS, Flame Retardants Online, Swerea IVF, Plastics Engineering, PINFA, MarketsandMarkets

Even with continued market growth, there have been significant recent regulatory set backs, particularly among developed nations within North America and Europe. Indeed, many FR chemical products have been under extensive scrutiny and their respective companies have been sent back to the drawing board due to the use of brominated, chlorinated, and other halogenated chemicals in their products. These FR chemicals are bio-accumulative and when burned, release dioxons and furans, both of which have major environmental and health concerns. Due to its inexpensive nature the U.S. alone produces over 40,000 tons of such chemicals. But environmental concerns are leading to a market shift to more eco-friendly chemicals.

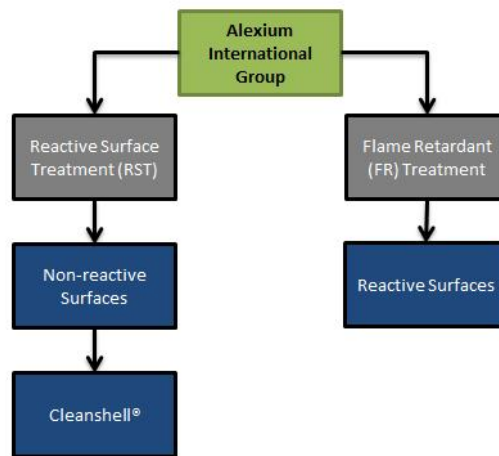
Alexium takes a green approach to FR chemical production and does not use any known toxic substances. Moreover, the company's relatively inexpensive product-line (discussed below), which targets both reactive and non-reactive materials should position the company to capture a notable share of the FR chemical market in the years to come.

Product Portfolio

Alexium's powerful niche chemical portfolio (see Exhibit 2) has the potential to gain significant traction and capture market share away from FR and specialty chemical producers. The company's business strategy calls for developing new polymer IP and coating processes, and then licensing these techniques to manufacturers and chemical producers around the world.



Exhibit 2: Alexium's Product Portfolio

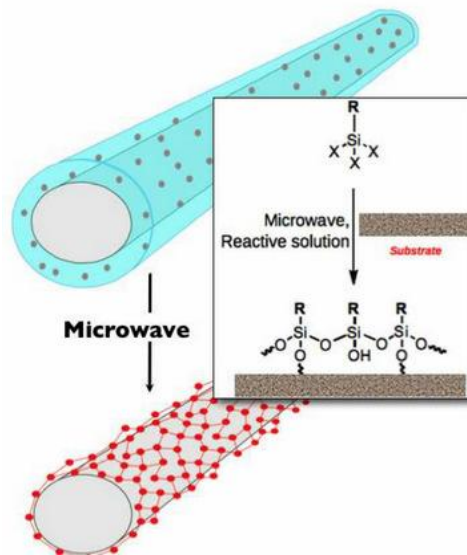


*Source: Company reports

REACTIVE SURFACE TREATMENT (RST) TECHNOLOGY

With \$30 million dollars of government funding behind its development, Alexium's patented RST technology is the backbone behind its business model. RST uses sophisticated microwave technology to coat or "shrink wrap" non-reactive and heat-sensitive textiles (such as polyolefins and petroleum based materials) with various silicon -based chemical compounds enhancing their capabilities and most importantly enabling them to become more resistant to igniting.

Exhibit 3: RST Microwave "Shrink Wrap" Technology



*Source: Company presentation

Alexium recently succeeded in expanding its RST distribution line by striking a deal to license its technology to Duro Textiles. The current arrangement requires the textile manufacturer to purchase proprietary equipment and silicon-based compounds from Alexium for use in coating nylon fabrics for the U.S DoD. Eventually, we anticipate that Duro will be coating about 4-million square yards of nylon material annually and that Alexium will receive a license fee of \$1 per square yard for the material shipped.



Alexium's RST technology has other applications aside from FR treatment for non-reactive materials; for instance, it can also provide water proofing, oil proofing, anti-microbial protection, non-stick surfaces, UV protection and bio-chemical protection (see Exhibit 4). The U.S. military is leveraging the company's RST to create bio-hazardous suits to protect troops against chemical warfare threats such as anthrax, soman and mustard nerve agents. This technology, branded as Cleanshell®, has already resulted in a preliminary \$200- thousand contract for testing with the Air Force.

Results have shown vast improvements compared to traditional chemical and biological suits, which typically offer only minutes of protection. Cleanshell® can provide protection for days. While the deployment of Alexium's technology on a wide scale in this program can not be assured, we do know that the U.S. military purchases 200,000 biological suits annually. Clearly, this could lead to a substantial licensing agreement for Alexium.

Exhibit 4: **Cleanshell® Treated Cotton**



*Source: Company reports

FR LOW TREATMENT CURING

In a similar fashion to RST, FR Alexium's low-temperature curing affords the ability to eliminate toxic halogens with safe silicon compounds. The company is in the process of completing testing for FR treatment which uses a low temperature oven (see exhibit 5) to apply a topical FR coat to reactive substances such as cotton and polyester blends. We believe this is the largest opportunity for Alexium and anticipate the company could land a 25-million-yard licensing contract for military uniforms, which surprisingly do not currently offer FR capabilities. The company is in the process of patenting its powerful low-temp IP.

Exhibit 3: **Low Temperature Curing Equipment**



*Source: Company website



Ancillary Opportunities

Alexium is primarily positioning its technology to service the needs of the U.S. military; however, the company has no licensing restrictions. We expect the coming months to reveal a fundamental shift in Alexium's sales methodology with efforts being redirected to new regions and sectors. We believe Alexium's chemical portfolio can be applied to the vast majority of materials in need of FR treatments and anticipate stringent global environmental regulations could result in the company gaining distribution channels into Europe and eventually the emerging markets of Asia. With the international market opportunity at well over \$5 billion, expansion could be a lucrative proposition.

We also believe large industrial textile manufacturers particularly within the U.S. construction industry are in need of "green" standout technologies that will differentiate their products while still enabling them to meet the qualification for LEED certified buildings. Companies such as Shaw Industries Inc. (a subsidiary of Berkshire Hathaway [BRK,\$87.33, NR]) have billions in annual sales and could acquire particular IP rights from Alexium adding more potential to the company's growing P&L.

Management*

Gavin Rezos, President and Executive Chairman: Mr. Rezos joined Alexium in 2010 and has had over 25 years of financial and executive management experience. Prior to working for Alexium Mr. Rezos was a Director for HSBC's Investment Banking division, a co-founder of pSivida Inc, a bio-nanotechnology company and Chairman of Halcyon Limited a specialty pharma company. Mr. Rezos was also non-executive director of Antares Energy Ltd., Mr. Rezos is currently a Principal at Viaticus Capital (private) and serves as a non-executive director of Iluka Resources Ltd., an ASX top 50 company and Niuminco Limited a Papua New Guinea based mineral exploration company.

Stefan Susta, COO and Executive Director: Mr. Susta joined Alexium in December of 2009 and is in charge of day-to-day operations and DoD business development efforts. He has over 10 years of technology and business development experience with the DoD. Mr. Susta received his bachelors in Chemical Engineering and Chemistry from Virginia Tech and his MBA from Wright State University.

Nicholas Clark, Chief Financial Officer and Company Secretary: Mr. Clark joined Alexium in November of 2011 and is in charge of the company's financial reporting, compliance, treasury and corporate finance. He has nearly 20 years of commercial and management experience. Prior to working for Alexium Mr. Clark held a senior management position with Citic Pacific Mining and has held numerous such positions in various parts of the world in a range of industries. Mr. Clark is a CPA and a CFTP with the Finance and Treasury Association Australia.

Robert Brookins, PhD, CTO: Dr. Brookins joined Alexium in August of 2010 and is in charge of product development. Dr. Brookins has vast experience with organic synthesis and materials chemistry. Prior to working for Alexium he worked in research for the U.S. Air Force where he developed decontamination methods for chemical and biological threats and novel synthetic routes for functional surfaces. Dr. Brookins received his PhD from the University of Florida.

*Source: Company reports

Financial Analysis

FY2012 Recent Results

Alexium reported FY2012 revenue of \$200 thousand, up 162% yr/yr primarily due to the company increasing its test launches with potential partnerships. The gross margin was 34.8% in FY2012, but it should rise in the months ahead as new, high-margin licensing deals are struck.

The company's opex declined nearly \$200 thousand to \$3.1 million for the year which highlights the operating leverage that can be obtained through Alexium's current business model. FY2012 EPS of (\$0.86) was up from (\$1.15). Alexium currently has \$906 thousand in cash and no debt.

FY2013 and Forward Estimates

We're projecting Alexium's FY2013 revenues could rise nicely to \$570 thousand for the year, up 185% from 2012. Indeed, the company has already announced publicly that it has received a \$200 thousand contract for Cleanshell® testing with the Air Force and anticipates licensing fee revenue from its partnership with Duro to be recognized in the spring of 2013.

Meanwhile, we're expecting the gross margin to rise to 67.2% due to high-margin licensing fees out pacing revenue from testing and equipment sales. Opex on the other hand should stay relatively stable since the company's products are already developed with the only increases being an additional sales team member and engineer, increasing FTE's to 11. Taken together, we estimate the company may post a \$2.7 million net loss or 72 cents a share. ADRs outstanding are expected to be about 3.8 million for the year.

In FY2014 we expect revenues to rise to \$3.4 million reflecting continuing growth in Alexium's licensing agreement with Duro. With Duro potentially coating close to 4-million yards of nylon by year's end, the company's gross margin could top out at 89.3% for the year. As such, the company could turn profitable in the second-half of the year.



In 2015, we fully expect to see the company post GAAP earnings in the black across both reporting periods along with continued growth in cash flow. Our projections are predicated on management's ability to innovate, market and deploy its technology in military-grade protective chemical and biological suits and uniforms.

Valuation

Alexium is positioning itself to be a high-margin growth company. As such, we feel comfortable applying a 6x multiple to our FY2014 revenue estimate of \$3.4 million and arriving at our \$4.75 price target.

Our valuation implies a market cap of \$18.2 million, which is only a fraction of the \$30 million in R&D that Alexium's has employed to develop its RST technology. **In our opinion, Alexium deserves a good look from aggressive investors; therefore, we're initiating coverage of the equity with a BUY rating today.**

Risks

Limited Capital: Alexium is a small company with limited resources which may force the company to scale back on aggressive sales and marketing efforts. Alexium may also need to raise capital to continue operation if there are delays with expected product launches.

Brutal competition: There are many chemical companies that are much larger than Alexium and have been leaders in FR industry for decades affording them the opportunity to build necessary relationships and contracts which could lead to delays in the launch of Alexium's products.



Alexium International Group Limited, (AXXIY)

FYE: June

Income Statement (\$000s except per share data)	2010A	1H11A	2H11A	2011A	1H12A	2H12A	2012A	1H13E	2H13E	2013E	1H14E	2H14E	2014E
Revenues	44	65	11	76	99	101	200	120	450	570	1,400	2,000	3,400
Cost of goods sold	149	187	38	225	62	68	131	87	100	187	155	210	365
Gross Profit	(105)	(122)	(27)	(148)	37	33	70	33	350	383	1,245	1,790	3,035
<i>Gross margin</i>	-241.3%	-186.1%	-244.0%	-194.4%	37.4%	32.3%	34.8%	27.5%	77.8%	67.2%	88.9%	89.5%	89.3%
Operating expense													
Employee benefits expense	372	597	795	1,392	482	489	971	510	555	1,065	600	700	1,300
Depreciation and amortization	205	373	469	842	405	421	826	410	415	825	420	430	850
Share-based payments	639	52	112	164	75	166	241	125	155	280	135	165	300
Impairment	2,969	2	24	26	102	1	104	0	0	0	0	0	0
Other expenses	695	473	434	907	444	503	947	500	500	1,000	500	500	1,000
Total operating expense	4,880	1,497	1,834	3,331	1,508	1,581	3,089	1,545	1,625	3,170	1,655	1,795	3,450
Total expense	5,029	1,684	1,872	3,556	1,570	1,649	3,219	1,632	1,725	3,357	1,810	2,005	3,815
Other income (expense)													
Finance income	36	0	84	84	0	45	45	40	40	80	40	40	80
Total other income (expense)	36	0	84	84	0	45	45	40	40	80	40	40	80
Net income (loss) from continuing operations before taxes	(4,949)	(1,619)	(1,777)	(3,395)	(1,471)	(1,503)	(2,974)	(1,472)	(1,235)	(2,707)	(370)	35	(335)
Income tax provision (benefit)	0	0	(291)	(291)	(102)	(105)	(207)	0	0	0	0	0	0
Net income (loss) from continuing operations	(4,949)	(1,619)	(1,486)	(3,104)	(1,369)	(1,398)	(2,767)	(1,472)	(1,235)	(2,707)	(370)	35	(335)
Net income (loss) from discontinued operations	0	0	0	0	0	0	0	0	0	0	0	0	0
Net income (loss)	(4,949)	(1,619)	(1,486)	(3,104)	(1,369)	(1,398)	(2,767)	(1,472)	(1,235)	(2,707)	(370)	35	(335)
Foreign currency translation	(28)	(173)	(40)	(214)	23	(1)	22	0	0	0	0	0	0
Total comprehensive income (loss)	(4,977)	(1,792)	(1,526)	(3,318)	(1,346)	(1,399)	(2,745)	(1,472)	(1,235)	(2,707)	(370)	35	(335)
Diluted EPS	(3.40)	(0.60)	(0.55)	(1.15)	(0.44)	(0.42)	(0.86)	(0.41)	(0.32)	(0.72)	(0.09)	0.01	(0.08)
Diluted share count (1 ADR to 40 ordinary)	1,455	2,697	2,712	2,705	3,086	3,365	3,226	3,625	3,875	3,750	4,125	4,500	4,313
EBITDAS													
Net Income before taxes	(4,949)	(1,619)	(1,777)	(3,395)	(1,471)	(1,503)	(2,974)	(1,472)	(1,235)	(2,707)	(370)	35	(335)
Depreciation and amortization	205	373	469	842	405	421	826	410	415	825	420	430	850
Interest	(36)	0	(84)	(84)	0	(45)	(213)	(40)	(40)	(80)	(40)	(40)	(80)
EBITDA	(4,780)	(1,246)	(1,391)	(2,638)	(1,066)	(1,127)	(2,361)	(1,102)	(860)	(1,962)	10	425	435
Stock based compensation	639	52	112	164	75	166	241	125	155	280	135	165	300
EBITDAS	(4,140)	(1,194)	(1,280)	(2,474)	(991)	(961)	(2,120)	(977)	(705)	(1,682)	145	590	735
Y-O-Y revenue growth				17%	52%	826%	162%	21%	125%	185%	1067%	251%	496%

All values have been converted to U.S. dollars for the closing day of each period

*Source: Company filings & Merriman estimates



Balance Sheet (\$000s except per share data)	1H11A	2H11A	2011A	1H12A	2H12A	2012A
Assets						
Cash & cash equivalents	2,005	2,091	2,091	837	921	921
Total cash	2,005	2,091	2,091	837	921	921
Trade and other receivable	20	20	20	62	108	108
Other assets	38	39	39	89	56	56
Total current assets	2,062	2,150	2,150	987	1,086	1,086
Property and equipment	4	4	4	4	4	4
Other financial assets	349	364	364	376	347	347
Intangible assets	11,281	11,764	11,764	10,849	10,499	10,499
Total assets	13,696	14,283	14,283	12,215	11,936	11,936
Liabilities						
Trade and other payable	181	188	188	143	103	103
Current tax liability	0	0	0	2	0	0
Provisions	11	11	11	20	19	19
Other-deferred income	64	67	67	67	67	67
Total current liabilities	255	266	266	231	188	188
Deferred tax liability	3,243	3,382	3,382	3,144	3,036	3,036
Other-deferred income	64	67	67	33	0	0
Total liabilities	3,562	3,715	3,715	3,408	3,223	3,223
Contributed equity	18,817	19,623	19,623	18,787	20,020	20,020
Reserves	166	173	173	266	307	307
Accumulated other comprehensive income	(8,849)	(9,228)	(9,228)	(10,246)	(11,615)	(11,615)
Total shareholders' equity	10,134	10,568	10,568	8,807	8,712	8,712
Total liabilities and shareholders' equity	13,696	14,283	14,283	12,215	11,936	11,936

All values have been converted to U.S. dollars for the closing day of each period

*Source: Company filings & Merriman estimates



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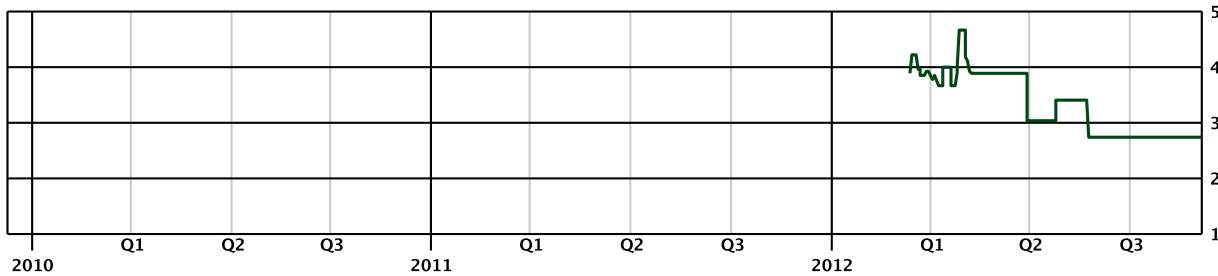
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Rating and Price Target History for: Alexium International Group Limited (AXXIY) as of 12-05-2012



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Key to investment Rankings (expected total share price return inclusive of dividend reinvestment, if applicable)

Buy : Merriman Capital, Inc. expects the stock price to appreciate 10% or more over the next 12 months. Initiate or increase position.

Neutral: Merriman Capital, Inc. believes the stock price is fairly valued at current levels. Maintain position or take no action.

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Ratings Distribution & Investment Banking Disclosure

Table with 5 columns: Rating, Count, Ratings Distribution, Count, *Investment Banking. Rows for Buy, Neutral, and Sell.

* Percent of companies under research coverage from which Merriman Capital, Inc. received compensation for investment banking services provided in the previous 12 months or expects to receive or intends to seek in the next three months

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