



Altech Chemicals
Limited

ASX ANNOUNCEMENT AND MEDIA RELEASE

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ALTECH GENERATES INTEREST AT CHINA INTERNATIONAL BATTERY FAIR

Highlights

- Interest generated by Altech as emerging HPA supplier for lithium-ion battery separators
- Electric vehicle manufacturers are demanding lithium-ion batteries with 99.99% HPA-coated separators
- HPA-coated separators improve battery safety and stability
- HPA supplied to China is priced in the range of US\$27 to US\$30 per kilogram
- Altech's bankable feasibility study HPA price assumption is US\$23 per kilogram

Altech Chemicals Limited (Altech/the Company) (ASX: ATC) is pleased to advise that it generated strong interest as an emerging high purity alumina (HPA) producer during its recent attendance at the 12th China International Battery Fair (CIBF) in Shenzhen, China (May 24-26, 2016). The CIBF is held every two years and is a significant event for the lithium-ion battery industry.

Figure 1. The 12th China International Battery Fair (CIBF) in Shenzhen, China



There is a growing application for HPA in lithium-ion batteries, where it is used as a coating on the ceramic separator sheets that divide the cathode and anode electrodes within the battery. The lithium-ion battery separator sheet membrane acts as a critical safety barrier inside the battery. HPA-coated separators withstand unusually high temperature incursions, increase battery separator shrinkage temperatures, reduce flammability during thermal runaways and thus make lithium-ion batteries much safer. HPA-coated separators also increase battery discharge rates, lower self-discharge, and lengthen battery life cycles.

The use of HPA lithium-ion battery separators is growing rapidly. Based on discussions with various lithium-ion battery separator sheet manufacturers at the CIBF, electric vehicle manufacturers are demanding lithium-ion batteries with 99.99% (4N) HPA-coated separators. These manufacturers are reporting usage of between 40-120g of HPA per battery kilowatt-hour (kWh).

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According to CIBF delegate sources, 99.99% (4N) HPA is currently being supplied to Chinese lithium-ion battery separator sheet manufacturers at RMB180 to RMB200 per kilogram (US\$27 to US\$30 per kilogram). This confirms the long-term price assumption for HPA in Altech's bankable feasibility study (BFS), which adopted a conservative estimate of US\$23 per kilogram. The particle size of the HPA product is required to be ultra-fine, less than 2 microns, which Altech's proposed HPA plant in Malaysia is designed to achieve. Given the global push for electric vehicles and energy storage, lithium-ion batteries are expected to be increasingly significant for HPA demand.

Figure 2. HPA-coated lithium-ion battery separator sheet



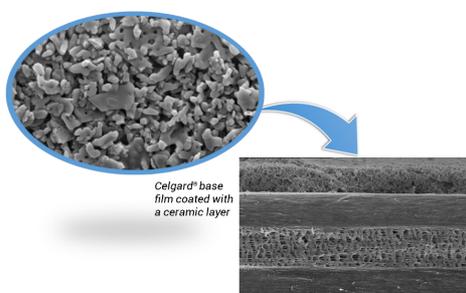
Figure 3. HPA-coated separator sheets on display at the CIBF



Altech managing director Mr Iggy Tan said, "The timing for construction of Altech's proposed HPA plant in Malaysia appears perfect, with two parallel streams of near-term HPA demand growth now apparent.

"HPA demand growth in the LED sector has long been acknowledged and understood; this growth is however now complemented by HPA demand growth in the lithium-ion battery industry, specifically from battery separator sheet manufacturers. This is an extremely exciting development for Altech. The Company expects that HPA from its proposed Malaysian plant will be a highly sought after product," Mr Tan concluded.

Figure 4. An Illustration of a Celgard Membrane Coated with 2 to 5 µm Thickness Ceramic



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About Altech Chemicals (ASX: ATC)

Altech Chemicals Limited (Altech/the Company) is aiming to become one of the **world's leading suppliers of 99.99% (4N) high purity alumina (HPA) (Al₂O₃)**.

HPA is a high-value, high margin and highly demanded product as it is the critical ingredient required for the production of artificial sapphire. Artificial sapphire is used in the manufacture of substrates for LED lights, semiconductor wafers used in the electronics industry, and scratch-resistant artificial sapphire glass used for wristwatch faces, optical windows and smartphone components. There is no substitute for HPA in the manufacture of artificial sapphire.

Global HPA demand is approximately 19,040tpa (2014) and demand is growing at an annual rate of 28%, primarily driven by the growth in worldwide adoption of LEDs. As an energy efficient, longer lasting and lower operating cost form of lighting, LED lighting is replacing the traditional incandescent bulbs. HPA demand is expected to at least double over the coming decade.

Current HPA producers use an expensive and highly processed feedstock material such as aluminium metal to produce HPA. Altech has completed a Bankable Feasibility Study (BFS) for the construction and operation of a 4,000tpa HPA plant at Tanjung Langsat, Malaysia. The plant will produce HPA directly from kaolin clay, which will be sourced from the Company's 100%-owned kaolin deposit at Meckering, Western Australia. Altech's production process will employ conventional "off-the-shelf" plant and equipment to extract HPA using a hydrochloric (HCl) acid-based process. Production costs are anticipated to be considerably lower than established HPA producers.

The Company is currently in the process of securing project financing with German KfW IPEX-Bank.



Forward-looking Statements

This announcement contains forward-looking statements which are identified by words such as 'anticipates', 'forecasts', 'may', 'will', 'could', 'believes', 'estimates', 'targets', 'expects', 'plan' or 'intends' and other similar words that involve risks and uncertainties. Indications of, and guidelines or outlook on, future earnings, distributions or financial position or performance and targets, estimates and assumptions in respect of production, prices, operating costs, results, capital expenditures, reserves and resources are also forward looking statements. These statements are based on an assessment of present economic and operating conditions, and on a number of assumptions and estimates regarding future events and actions that, while considered reasonable as at the date of this announcement and are expected to take place, are inherently subject to significant technical, business, economic, competitive, political and social uncertainties and contingencies. Such forward-looking statements are not guarantees of future performance and involve known and unknown risks, uncertainties, assumptions and other important factors, many of which are beyond the control of our Company, the Directors and management. We cannot and do not give any assurance that the results, performance or achievements expressed or implied by the forward-looking statements contained in this announcement will actually occur and readers are cautioned not to place undue reliance on these forward-looking statements. These forward looking statements are subject to various risk factors that could cause actual events or results to differ materially from the events or results estimated, expressed or anticipated in these statements.

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