



**Altech Chemicals**  
Limited

## ASX ANNOUNCEMENT AND MEDIA RELEASE

27 February 2018

# ALTECH LODGES NEW PROVISIONAL PATENT APPLICATION

### Highlights

- Provisional patent application lodged with the Australian Patent Office
- Incorporates finished product technology
- Global Intellectual Property search completed
  - Altech's kaolin to HPA HCL processing route is unique
  - There is no risk of patent infringement by Altech
- Altech's patent applications afford international protection for its HPA production method

Altech Chemicals Limited (Altech/the Company) (ASX: ATC) (FRA: A3Y) is pleased to announce that it has lodged a new provisional patent application with the Australian Patent Office (IP Australia), which incorporates the finished product HPA technology developed by it for its high purity alumina (HPA) project.

The new patent application expands on a previously lodged patent application titled 'A Method for the Preparation of Alumina', which was filed by Altech in October 2014. The existing patent application describes Altech's method of preparing alumina from aluminous material, including kaolin. The new patent application incorporates various refinements made to the Company's HPA processing route during project due diligence, and incorporates the Company's latest invention, the flexible finished product line that is capable of producing HPA product for both the synthetic sapphire industry (high density pellets) and HPA for the lithium-ion battery industry (powder at sub-micron particle size).

The new patent application covers the following steps:

1. treating aluminous material to reduce particle size and increase the alumina content;
2. calcining the aluminous material;
3. leaching the aluminous material with hydrochloric acid;
4. solid liquid separation to provide a pregnant liquor;
5. crystallising aluminium chloride hexahydrate by adding hydrogen chloride gas;
6. precipitating and separation of aluminium chloride hexahydrate;
7. dissolving the aluminium chloride hexahydrate in water and repeating the crystallisation process;
8. roasting and calcining aluminium chloride hexahydrate to provide alumina; and
9. finishing alumina in either a high density bead or fine alumina powder

In addition, Altech is pleased to report that as part of project due diligence initiated by KfW IPEX-Bank, a global freedom to operate search was conducted to confirm that the Company will be free to produce, market, sell or otherwise distribute HPA manufactured by its unique process. The search involve the detailed review of

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existing alumina manufacturing patents and was conducted by Wrays Patent and Trade Mark Attorneys (Wrays), a highly regarded Australian firm specialising in patent and trade mark law.

The search was conducted across a database covering over 100 patent authorities containing over 60 million patent records. It involved identifying all patents or patent applications in the field of alumina preparation and all patents and patent applications covered by the World Intellectual Property Organisation. The search covered key market countries and areas such as Australia, People's Republic of China, Canada, Federal Republic of Germany, Europe, United Kingdom of Great Britain and Northern Ireland, Japan, Republic of India, Korea, Russian Federation, Taiwan, United States of America and Malaysia.

The results of the global search confirmed Altech's unique manufacturing process (Intellectual Property). Wrays did not identify any patent or patent application that could assert to prevent the production of HPA by Altech using its unique process in Malaysia, nor prevent the marketing, selling or distributing its HPA, or products containing its HPA, globally.

The search confirmed Altech's view that its IP for producing HPA from kaolin/aluminous material using its hydrochloric acid-based processing technology is unique, and that any other party that employs a similar process to produce HPA would most likely be in breach of Altech's patent applications.

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*Wir sprechen Deutsch.*

**About Altech Chemicals (ASX:ATC) (FRA:A3Y)**

**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)** ( $Al_2O_3$ ).

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

Global HPA demand is approximately 25,315tpa (2016) and demand is growing at a compound annual growth rate (CAGR) of 16.7% (2016-2024), 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.

Current HPA producers use expensive and highly processed feedstock materials such as aluminium metal to produce HPA. Altech has completed a Final Investment Decision Study (BFS) for the construction and operation of a 4,500tpa HPA plant at the Tanjung Langsat Industrial Complex, Johor, 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 the aim of commencing project development in mid 2018.



**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 the 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.