16 October 2018

ALTECH – PATENT GRANTED FOR KAOLIN TO HPA PRODUCTION PROCESS

Highlights

- Patent granted to Altech for its kaolin to HPA production process
- Affords protection to Altech and its unique 8 step production method
- Altech now in a strong position to defend its intellectual property rights

Altech Chemicals Limited (Altech/the Company) (ASX: ATC) (FRA: A3Y) is pleased to announce that it has received the Certificate of Grant for an Innovation Patent from the Australian Patent Office (IP Australia), for the Company's process of producing high purity alumina (HPA) from kaolin (aluminous clay). Altech originally filed the patent titled 'A Method for the Preparation of Alumina' in October 2014.

The granted patent covers the production of alumina from all types aluminous clay including kaolin, using hydrochloric acid and includes the following steps:

1. treating kaolin or aluminous material to reduce particle size and increase the alumina content;
2. calcining the kaolin or 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; and
8. roasting and calcining aluminium chloride hexahydrate to provide alumina.

The grant of the patent acknowledges that Altech's process for producing HPA from aluminous material such as kaolin is unique. Other potential new entrants into the HPA industry that have publicised the proposed use of a process similar to Altech's for the production of HPA from kaolin, will need to take extreme care not to breach the Company's patent.

Altech Chemicals managing director Iggy Tan said, *"The journey to patent grant was quite arduous. We commenced the process in 2014 and have now received the Certificate of Grant – 4 years later. The patent will help protect the Company's unique HPA production process and the technology that we have developed.*

Over the past 18 months it has been quite frustrating to read a number public announcements from other companies aiming to be HPA producers that have included HPA process flow diagrams that appeared to be blatant copies of Altech's process – some even using the same unique icons developed by the Company. Now that this patent is granted, Altech is in strong position to defend its intellectual property rights with the assistance of WRAYS, our patent attorney", he said.

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Australian Government
IP Australia

CERTIFICATE OF GRANT
INNOVATION PATENT

Patent number: 2018101228

The Commissioner of Patents has granted the above patent on 12 September 2018, and certifies that the below particulars have been registered in the Register of Patents.

Name and address of patentee(s):

Altech Chemicals Australia Pty Ltd of Se 8 295 Rokeby Rd SUBIACO WA 6008 Australia

Title of invention:

A METHOD FOR THE PREPARATION OF ALUMINA

Name of inventor(s):

Liu, Jingyuan and Tan, Ignatius Kim Seng

Term of Patent:

Eight years from 24 August 2018

NOTE: This Innovation Patent cannot be enforced unless and until it has been examined by the Commissioner of Patents and a Certificate of Examination has been issued. See sections 120(1A) and 129A of the Patents Act 1990, set out on the reverse of this document.

Priority details:

Number	*Date*	*Filed with*
2017903868	22 September 2017	AU

COMMONWEALTH OF AUSTRALIA AUSTRALIA PATENT OFFICE

Dated this 12th day of September 2018

Commissioner of Patents

PATENTS ACT 1990

The Australian Patents Register is the official record and should be referred to for the full details pertaining to this IP Right.

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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 (FIDS) 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 and has announced the execution of an agreement with its appointed EPC contractor SMS group for the commencement of stage 1 construction of its HPA plant in Johor, Malaysia.

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.