



2 November 2018

SCHEDULE OF PATENT APPLICATIONS TO PROTECT ALTECH HPA PROCESS

Highlights

- Total of seven (7) Patent Applications lodged for Altech HPA Process
- Five (5) Patent Applications lodged in Australia
- Two (2) Patent Applications lodged in Malaysia
- One (1) Innovation Patent granted in Australia – currently in examination

Altech Chemicals Limited (Altech/the Company) (ASX: ATC) (FRA: A3Y) is pleased to provide an update on the numerous patent applications (pending) that it has lodged for its kaolin to high purity alumina (HPA) production process (Altech HPA Process), and the status of its recently granted Innovation Patent 2018101228.

The Company is committed to placing itself in a strong position to protect its intellectual property rights. Accordingly, Altech has so far lodged seven (7) Patent Applications for the Altech HPA Process. Five (5) Patent Applications have been lodged in Australia, with one (1) application granted – Innovation Patent 2018101228. Two (2) Patent Applications have been lodged in Malaysia. The Patent Applications have been lodged in the name of Altech's wholly owned subsidiary, Altech Chemicals Australia Pty Ltd. Details of each Patent Application are summarised in Table 1, below.

Table 1 – Schedule of Patent Applications

Number	Country	Type	Title	Description	Priority Date	Status
2014253487	Australia	Standard Patent Application	A Method for the Preparation of Alumina	Including, Kaolin beneficiation, calcination, leach, ACH precipitation by HCl, ACH Purification, ACH Decomposition, alumina calcination	26/02/2014	Pending Application
2018233001	Australia	Standard Patent Application	A Method for the Preparation of Smelter Grade Alumina	Including, Kaolin beneficiation, calcination, leach, ACH precipitation by HCl, ACH Purification, ACH Decomposition, alumina calcination	22/09/2017	Pending Application
PI2018704039	Malaysia	Standard Patent Application	A Method for the Preparation of Smelter Grade Alumina	Including, Kaolin beneficiation, calcination, leach, ACH precipitation by HCl, ACH Purification, ACH Decomposition, alumina calcination	20/09/2018	Pending Application
2018900572	Australia	Provisional Patent Application	A Method for the Preparation of Alumina	Including, Kaolin beneficiation, calcination, leach, ACH precipitation by HCl, ACH Purification, ACH Decomposition, alumina calcination, bead milling, spray drying, produce high density beads and fine powder	22/02/2018	Pending Application
PI2018700927	Malaysia	Standard Patent Application	A Method for the Preparation of Alumina	Including, Kaolin beneficiation, calcination, leach, ACH precipitation by HCl, ACH Purification, ACH Decomposition, alumina calcination, bead milling, spray drying, produce high density beads and fine powder	22/02/2018	Pending Application
2018903911	Australia	Provisional Patent Application	A Method for the Preparation of Alumina	Including, Kaolin beneficiation, calcination, leach, ACH precipitation by evaporation, ACH Purification, ACH Decomposition, alumina calcination, bead milling, spray drying, produce high density beads and fine powder	16/10/2018	Pending Application
2018101228	Australia	Innovation Patent	A Method for the Preparation of Alumina	Including, Kaolin beneficiation, calcination, leach, ACH precipitation by HCl, ACH Purification, ACH Decomposition, alumina calcination	22/09/2017	Granted

Granted Innovation Patent 2018101228

On 16 October 2018 the Company announced that it had received the Certificate of Grant for its Innovation Patent 2018101228 from the Australian Patent Office (IP Australia), for the Company's method of producing high purity alumina (HPA) from kaolin (aluminous clay). The prescribed process for an Innovation Patent following grant, is that the patent is examined by IP Australia and once the examination is passed, the Innovation Patent is certified then published. IP Australia recently issued its initial examination report for the Company's Innovation Patent 2018101228 (Examination report No. 1). In the section of the examination report titled "Novelty and Innovative steps", the innovation and novelty of the Altech HPA Process were queried; the Company now has a 6-month period to respond to IP Australia and remove grounds for revocation of the patent, else the Innovation Patent will cease. Interestingly, one of the queries raised in the Examination report was in relation to an innovation step previously filed by the Company, under the former name of its wholly owned subsidiary, Kaolin2alumina Pty Ltd.

The initial examination determination by IP Australia of the Company's Innovation Patent is not final nor binding, and the Company via its Patent Attorney WRAYS will now respond to IP Australia with further clarification and justification as to the innovation and novelty of the Altech HPA Process. It is the view of the Company and WRAYS that a significant and innovative step of the Altech HPA Process described in the Innovation Patent is the recycling and re-use of HCl gas, which previous patents did not deploy. WRAYS has advised Altech that a response to clarify patent innovation and novelty following an initial Innovation Patent examination is not unusual. The Company will keep shareholders updated as to the status of the various Patent Applications and the examination process.

The award of a patent to Altech (and its wholly owned subsidiary) for the Altech HPA process is not a condition precedent to draw-down of the KfW IPEX-Bank senior debt (US\$190m).

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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 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.