

The Manager Companies - ASX Limited
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ASX Announcement
18 October 2023
(4 pages)

PRODUCT MARKETING UPDATE HPA FIRST PROJECT

PRODUCT MARKETING

- Independent Market analysis confirms firmer HPA pricing environment
- Al-Nitrate qualification completed with global chemical company
- Ultra-Coat testwork expands to include 13 LiB anode end-users
- Continued HPA sales to South Korea semiconductor sector @ US\$35/kg
- Second stage testwork commenced for large volume ATH application
- Expansion of test sampling of low-carbon ATH to existing HPA producers
- ISO9001 audit complete
- Current production focus on:
 - Expanding HPA production from Stage 1 to meet sales demand
 - HPA tablets for sapphire glass
 - Multiple nano-HPA orders from semi-conductor CMP sector
 - Multiple Al-Sulfate orders for LiB cathode manufacturers
 - Multiple gamma HPA orders for LiB cathode manufacturers

The Board of Alpha HPA Limited ('Alpha' or 'the Company') is pleased to provide an update on product marketing activities for its HPA First Project representing the commercialisation and production of critical high purity aluminium products driving de-carbonisation.

Alpha is servicing a wide range of product orders across a number of high-technology sectors, namely:

- **Lithium-ion battery (LiB) sector:** With a focus on cathode coating & dopants and anode coatings
- **LED Lighting sector:** With a focus on HPA for synthetic sapphire substrates and LED phosphors
- **Semi-conductor sector:** With a focus on materials for Chemical Mechanical Polishing (CMP) and thermal interface materials for semi-conductor packaging

Alpha is utilising capacity from both the Stage 1, Precursor Production Facility (PPF) in Gladstone, QLD and also the Company's Product Development facility in Brisbane. Product orders are servicing various stages of market outreach:

- Servicing existing sales orders
- Delivering into tonnage scale orders for end-user production testwork
- Servicing technical qualification, usually multiple test orders
- Delivering initial orders to demonstrate capability



PRODUCT MARKETING

Independent market analysis confirms firmer HPA pricing environment

Alpha has received an updated, independent analysis of the high purity alumina (HPA) and related products market, commissioned as part of the HPA First Project financing requirements.

The updated market analysis, completed by the CM Group, has confirmed a firmer pricing environment for >4N purity (>99.99%), a thematic that is consistent with Alpha's own observations from its most recent product marketing activities and sales discussions, and consistent with Alpha's capability.

The CM Group price forecasts are set out below, noting the forecast:

- is specific to the >4N purity markets targeted by Alpha;
- specific for sales to ex-China markets only, and;
- specific to approved and qualified commercial HPA suppliers.

Calendar Year	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
High Purity Alumina (HPA)										
HPA Spec 1 - Unmilled	10 - 28	15 - 20	25 - 30	30 - 40	30 - 40	30 - 40	30 - 40	30 - 40	30 - 40	30 - 40
HPA Spec 2 - Milled	20 - 30	20 - 30	30 - 35	35 - 45	35 - 45	35 - 45	35 - 45	35 - 45	35 - 45	35 - 45
HPA Spec 3 - Custom	45 - 60	45 - 60	45 - 80	45 - 80	45 - 80	45 - 80	45 - 80	45 - 80	45 - 80	45 - 80
High Purity Alumina (HPA) Pucks										
Standard	15 - 25	20 - 25	30 - 35	35 - 40	35 - 40	35 - 40	35 - 40	35 - 40	35 - 40	35 - 40
High Density	30 - 60	30 - 60	45 - 55	50 - 60	50 - 60	50 - 60	50 - 60	50 - 60	50 - 60	50 - 60
Gamma Alumina										
Gamma Spec 1	15 - 25	15 - 25	20 - 25	25 - 30	25 - 30	25 - 30	30 - 35	30 - 35	30 - 35	30 - 35
Gamma Spec 2	8 - 15	12 - 18	20 - 25	25 - 35	25 - 35	25 - 35	25 - 35	25 - 35	25 - 35	25 - 35
Gamma Spec 3 - Milled	10 - 20	15 - 25	15 - 25	25 - 30	25 - 30	25 - 30	25 - 30	25 - 30	25 - 30	25 - 30
Spherical Gamma	n/a									
Alumina Trihydrate (ATH)										
ATH - Milled	7 - 12	12 - 18	20 - 25	25 - 35	25 - 35	25 - 35	25 - 35	25 - 35	25 - 35	25 - 35
ATH - Unmilled	5 - 10	7 - 10	12 - 15	15 - 20	15 - 20	15 - 20	15 - 20	15 - 20	15 - 20	15 - 20
Nano Alumina										
NAP - Spec 1	40 - 60	40 - 60	40 - 60	40 - 60	40 - 60	40 - 60	40 - 60	40 - 60	40 - 60	40 - 60

CM Group pricing forecast for > 4N purity materials to ex-China markets - all prices in US\$/kg (real 2023)

Al-Nitrate qualification completed with global chemical company

Alpha is very pleased to have confirmed technical qualification with a European based global chemicals company for the use of its high-purity Al-Nitrate in the manufacture of a high-volume catalyst.

Alpha has advanced commercial supply discussions and is hopeful of concluding these within one month.

Alpha is already certified with European Union's Regulation (EC) 1907/2006 ('REACH') for the export of Al-Nitrate to the EU.

Ultra-Coat testwork expands to include 13 LiB anode end-users

Alpha continues to expand the uptake in the testing of Al-oxide coated graphite anode materials using ultra high purity Al-Nitrate precursors (Alpha's 'UltraCoat' process).

Testwork has now expanded to include 13 LiB anode manufacturers and developers including the coatings on natural graphite, synthetic graphite and silicon based LiB anode materials.

As noted in July, Alpha has already passed first round qualification for this process with a US-based anode developer.

The UltraCoat process provides for higher capacity, faster cycling LiB cells, and replaces the traditional carbon-pitch coat which represents the incumbent graphite anode coating process.

South Korean semiconductor sector sales

In line with the LOI received in July 2023, Alpha has continued to allocate a proportion of its HPA production into sales to the South Korean semi-conductor sector.

Since July, Alpha has completed 90kg of HPA sales at US\$35/kg.

The LOI confirms the manufacturer's interest in:

- the purchase of 1 metric tonne per month of bespoke HPA powder from January 2024, to be serviced from Stage 1 PPF; and
- the purchase of up to 1,000 metric tonnes per year of bespoke HPA powder from March 2026, to be serviced from the full scale Stage 2 HPA First Project.

Testwork advances for large volume ATH application

Alpha has advanced to second stage testwork for a large volume application using its high purity alumina trihydrate (ATH) for the manufacture of direct lithium extraction (DLE) adsorbents.

The Company is now preparing larger volume samples to service second stage testwork, which will ship this week.

Expansion of test sampling of low-carbon ATH to existing HPA producers

Alpha continues to service test order requests for a range of established manufacturers of HPA. The focus of the testwork is the Company's high purity ATH ($\text{Al}(\text{OH})_3$), and high-purity pseudo-boehmite (Al-O-OH), which are both produced inside the same process area.

The testwork is based on Alpha potentially supplying a high-purity HPA-precursor product with a lower CO_2 footprint to assist the manufacturers in providing lower carbon final product.

ISO9001 audit complete

As an international speciality chemicals supplier, Alpha is now in the final stages of ISO (International Organization for Standardization) certification with respect to:

- ISO9001:2015: Quality Management
- ISO14001:2015: Environmental Management
- ISO45001:2018: Occupational Health and Safety management

Documentation, systems and site audit are now complete, with no non-conformances, with Alpha hopeful of achieving these certifications in the next month.

Production Focus

Alpha continues to service multiple product orders, (both new and follow-on) from numerous counterparties.

Alpha is utilising capacity from both the Stage 1 Precursor Production Facility (PPF) in Gladstone, and the Company's Product Development facility in Brisbane.

Alpha's production focus is set out below:

Expanding HPA production from Stage 1 to meet sales demand

Per the Stage 1 market update provided to the ASX on 12 October 2023, the HPA production line within Stage 1 is nearing completion. This is of particular focus as it will enable Alpha to fulfil existing large-scale sales orders, including:

- 1 tonne production order for the South Korean semiconductor sector, from January 2024
- 1 tonne production order for St Gobain (US)
- 1 tonne production order for C4V (US)

HPA tablets for sapphire glass

Alpha continues to manufacture custom HPA tablets for ongoing technical qualification with the Ebner-Fametec sapphire growth units, as well as to start building an HPA tablet stockpile ahead of the commissioning of the Alpha Sapphire growth units in March quarter 2024.

In addition, Alpha is servicing tablet orders for a niche, high value sapphire glass production for an end-user in Japan.

Multiple nano-HPA orders from semi-conductor CMP sector

Alpha is servicing multiple orders for a total of 60kg of nano HPA material, most of which are second stage orders following successful first stage testwork.

Multiple Al-Sulfate orders for LiB cathode manufacturers

The Company is completing high purity Al-Sulfate orders for LiB cathode manufacturers. In three cases these are second round test orders. A further two end-users in the catalyst sector are awaiting Al-Sulfate orders.

Multiple gamma HPA orders for LiB cathode manufacturers

The Company is completing multiple second round test orders for high purity gamma HPA for three LiB cathode manufacturers.

About the HPA First Project

The Company's HPA First Project represents the commercialisation of the production of high purity aluminium materials using the Company's proprietary licenced solvent extraction and HPA refining technology. The disruptive, low-carbon process technology provides for the extraction and purification of aluminium from an industrial feedstock to produce 4N (>99.99% purity) and 5N (>99.999% purity) aluminium materials for sale into high technology markets including the semiconductor, lithium-ion battery and LED lighting sectors.

Alpha completed a Definitive Feasibility Study in March 2020 following a successful pilot plant campaign in 2019.

Alpha is now in production at its Stage 1, Precursor Production Facility. The Stage 1 facility is also now being expanded to produce the full range of Alpha's high-purity aluminium materials with \$15.5M grant funding from the Australian Government.

The Company is now in the mature phases of market outreach and project financing with respect to the full scale Stage 2 HPA First Project, with the expectation of positioning Stage 2 to Final investment Decision.

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