

## ASX ANNOUNCEMENT

6 September 2023

### Testwork delivers HPA flowsheet enhancements and HPM market update

- **High Purity Alumina (HPA)**
  - **Pilot Plant flowsheet optimised following further operational testwork success of HPA Micro Plant.**
  - **Pilot Plant to allow for intermediate HPA products for qualification with battery separator manufacturers.**
  - **CMX's 100%-owned HiPurA® HPA International Patent progressing on track**
  - **Pilot Plant equipment first deliveries to ChemX expected this month.**
- **High Purity Manganese (HPM)**
  - **Maiden Mineral Resource Estimate for Jamieson Tank Manganese Project on the Eyre Peninsula, South Australia to be finalised in consultation with CSA Global this month.**

**ChemX Materials (ASX:CMX) (ChemX or the Company)**, an Australian based high purity critical materials business, is pleased to announce significant progress in both HPA and HPM business streams.

ChemX Materials has been advancing the development of its 100%-owned HiPurA® HPA Pilot Plant, to be located at its dedicated facility in O'Connor Perth, Western Australia to deliver the required volumes of HPA for product qualification with Battery Separator manufacturers and consumers of high purity aluminous products and synthetic sapphire producers. As a result of marketing activities and industry discussions, ChemX has identified markets for intermediate high purity aluminous products, which offer potential volume increases in addition to the markets for 4N and 5N HPA.

**Chief Executive Officer Peter Lee commented:**

*"The Micro Plant has proven extremely effective in delivering the process data required to improve the design and optimise the operation of the Pilot Plant ahead of time. This has resulted in a significant reduction in capital costs and reagent requirements.*

*Importantly, the resized pilot plant will still meet expected customer demand in producing sufficient product to complete qualification with battery separator makers, synthetic sapphire growers and other burgeoning markets".*

Following recent strategic investment in high precision analytical equipment and dedicated human resources for high purity analysis, the HPA Micro Plant has experienced increased operational performance, with these enhancements being fed directly into the HPA Pilot Plant flowsheet design.

The step-change in performance of the HPA Micro Plant has been a key highlight and success of the scaled development approach, which has provided added confidence and reduced the risk associated with scaling up high purity metallurgical processes, which is common under continuous operation for novel technologies.

### **HPA Update**

CMX's 100%-owned HiPurA® process is a disruptive flowsheet which converts aluminous chemical feedstocks through selective refining to high purity alumina. Ultimately, CMX aims to achieve the delivery of 4N high grade and potentially 5N HPA products for the electric vehicle battery separator and synthetic sapphire markets, LEDs, semi-conductor and optical lenses.



Figure 1. HPA Micro Plant Production

In July 2022, the Company lodged an international patent application, with a recent preliminary international report indicating ChemX's claims complied with requirements for novelty, inventive step and industrial applicability. The patent approval process is ongoing. The progression of the HiPurA® patent is a significant step for the Company in the protection of its intellectual property and competitive advantage against incumbent operators who rely on non-novel, licenced, energy and reagent intensive technologies to produce high purity alumina.

As the HiPurA® HPA process is modular, scalable and independent of direct mine production, this will enable ChemX to locate key production facilities close to customers. Ongoing customer engagement has led to the identification of new intermediate products. The inclusion of these requisite flowsheet process enhancements and alternative product pathways will now add several weeks to the construction timeframe and result in a robust pilot plant design, negating the requirement to build additional plant(s) to produce alternative intermediate products for customer qualification.

With the success of the Micro Plant under continuous operation, it will be modified to take feedstock from the Pilot Plant to produce premium products such as 5N (99.999%) HPA, used for synthetic sapphire production.

## **HPM Update**

The Company has been working with ERM Australia Consultants Pty Ltd, (trading as CSA Global) toward a maiden Mineral Resource estimate (MRe). This work is in its final stages and the Company expects to release the results this month.

ChemX's manganese deposit is strategically located on the Eyre Peninsula, South Australia, approximately 150km west of Whyalla, an important regional industrial and steel manufacturing town capable of supporting a skilled local workforce with excellent multi-commodity processing, having significant road, rail, port logistics infrastructure already in place.

The Company has been in discussions with relevant parties for local sourcing of chemical reagents required to produce battery grade Manganese Sulphate for the electric vehicle battery cathode market. The project's manganese mineralisation is near surface and has demonstrated the ore can be upgraded via beneficiation (ASX 11 May 2022), which can then be processed into High Purity Manganese Sulphate Monohydrate (HPMSM).

In early 2022, the Company secured a Non-Binding MoU with US based C4V, a leader in battery technology and is involved in some of the world's largest gigafactory developments to progress ChemX's High Purity Manganese Project and work towards HPM offtake following the qualification process.

ChemX is investigating using the Eyre Peninsula Manganese deposit as a feedstock for a high purity manganese sulphate production facility to be located in Whyalla, South Australia, which boasts an abundance of renewable energy in the region within a tier-one sovereign jurisdiction, offering potential customers superior ESG credentials.

The Company continues to advance its marketing efforts to enter early qualification with electric vehicle battery manufacturers and cathode chemical companies. The Company's pending initial manganese resource estimate, internal development and metallurgical studies to follow will be key milestones to advance discussions with entities seeking to secure Australian sourced manganese sulphate supply.

This Announcement has been authorised for release by the Board.

### ***For enquiries:***

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## Directors

Warrick Hazeldine	Non-Executive Chair
Alwyn Vorster	Non-Executive Director
Tara Berrie	Non-Executive Director (US Based)
Stephen Strubel	Executive Director & Company Secretary

## Management

Peter Lee	Chief Executive Officer
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## Reporting confirmation

11 May 2022 ChemX Battery Materials Strategy Moves Forward

The Company confirms that it is not aware of any new information or data that materially affects the information included in the market announcement.

## About ChemX Materials (ASX: CMX)

*ChemX is an advanced materials company focused on providing high purity critical materials for the battery industry. The Company's vision is to become a leading supplier of sustainable and ethically sourced critical materials to support the global energy transition.*

*ChemX is applying its high purity expertise to advance its Manganese project located on the Eyre Peninsula in South Australia. Metallurgical test work has indicated the manganese ore is amendable to upgrade through beneficiation and being processed into a high purity manganese sulphate to supply the Lithium-ion battery industry.*

*Developed in-house, ChemX's HiPurA® Process is capable of producing high purity alumina (HPA) and high purity aluminium cathode precursor salts for lithium-ion batteries. Initial test work has indicated that the process is low cost and low in energy consumption, compared to alternative methods. A key competitive advantage is that the HiPurA® process modular, scalable and is not tied to direct mine production, instead utilising chemical feedstock.*

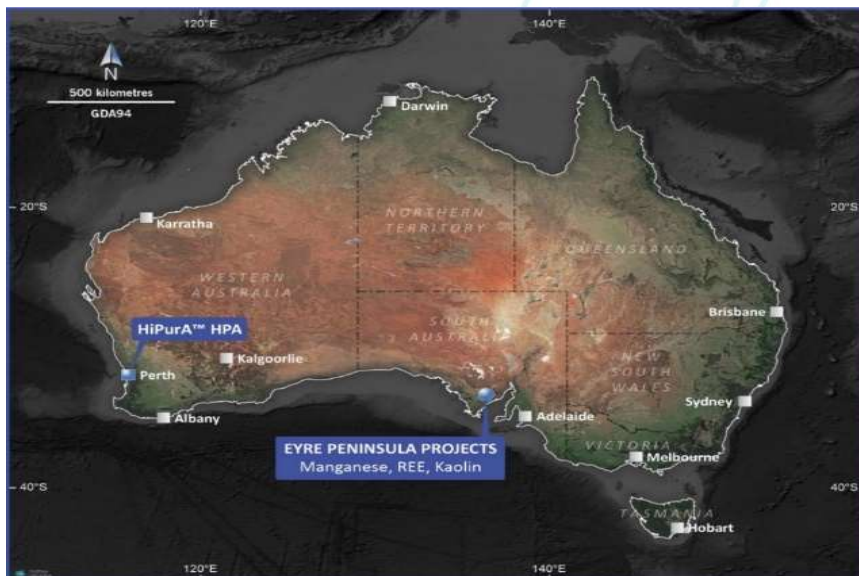


Figure 2 – ChemX Project Locations