

## ASX ANNOUNCEMENT

9 November 2022

### Integrated HPA Facility in Perth Commissioned

- HPA Micro Plant accelerating towards 5kg/day nameplate production
- Targeting 4N (99.99%) High Purity Alumina (HPA)
- HiPurA® HPA Pilot Plant preliminary detailed design work commenced
- US Inflation Reduction Act, creates opportunities for Australian suppliers of critical materials

*ChemX Materials Ltd (ASX:CMX) (ChemX or the Company)*, a materials technology company focused on providing the critical materials required for electrification and decarbonisation, is pleased to update Shareholders on its newly secured integrated High Purity Alumina (HPA) Production facility in Perth, Western Australia.

#### Integrated HPA Facility in Perth Commissioned

ChemX Materials is pleased to advise that its dedicated HPA production facility in Perth, Western Australia is now commissioned. The Company secured a 1200sqm warehouse facility with adjacent 1200sqm hardstand external space which is capable of housing both the HPA Micro Plant and HiPurA® HPA Pilot Plant to be constructed in CY2023.

HPA is a high value critical material used in lithium-ion batteries as a coated ceramic separator. Placed between the anode and the cathode, the ceramic separator provides increased thermal insulation for improved safety, charging and performance.

#### HPA Micro Plant

The Company has recently completed relocation reassembly of the Micro Plant and installed a demineralised water system to ensure high purity process outcomes. The Microplant will now move through carefully planned staged re-commissioning, aiming to achieve name plate production of 5kg/day HPA at 4N (99.99%) by late 2022. The Micro Plant will be run with internal optimisation and samples despatched to external laboratories for verification analysis on rolling cycles to feed data for final calibration of the purification steps to produce 4N HPA. Following steady state production of sufficient 4N HPA, ChemX will begin optimisation of the process to 5N (99.999%) HPA. 5N HPA is used to produce Synthetic Sapphire, a high value material with applications, in semiconductor manufacturing, advanced optical lenses, LED lights, and medical devices. The HPA Micro Plant is a continuous process based on the laboratory scale flow sheet which produced 4N HPA as detailed in the Company's Prospectus. Upon

successful production of 4N HPA, the Company will be able to begin submitting samples to potential customers for early-stage qualification testwork.

### **HiPurA® HPA Pilot Plant**

The HiPurA® HPA processing design is a novel technology for which ChemX has applied for patent protection in July 2022. The technology is independent of mine production and uses a chemical feedstock sourced from Australian suppliers. The system removes the need for complex and expensive off-gas reagent and recovery. Together these advantages dramatically lower the capital and operating costs of the HiPurA® design in comparison with traditional mining dependent feedstocks.

ChemX recently confirmed the potential of the HiPurA® HPA technology, following a prefeasibility study (PFS) completed by Primero Group, which confirmed the metallurgical flow sheet design, mass and energy balances with no fatal flaws identified. The 50tpa Pilot Plant was costed at \$2.5m (-/+ 30%) in line with initial estimates in the Company's Prospectus. The HiPurA® HPA technology is scalable and modular allowing modifications to be made as per customer requirements and for the production of a variety of high purity aluminous based products. Co-location of the plants allows for further R&D with Pilot Plant output to be fed into the micro plant as a high purity feedstock (4N) to produce potentially new high value aluminous materials (5N).

Following detailed design work and Pilot Plant construction which is expected to be completed in calendar year 2023. The Company will be able to supply increased quantities of HPA for final stages of product qualification with customers in the lithium-ion battery supply chain.

**Managing Director, Stephen Strubel**, commented: *"Having the dedicated HPA Production facility in Perth operational is a major step forward for the Company, which provides strategic opportunities to leverage the first class in-house metallurgical expertise at ChemX to produce HPA and further high value critical materials. The Company will now be able to increase the operational tempo of the organisation as we seek to leverage our networks in supply chains to become a leading Australian producer of critical materials to participate in the energy transition. "*

### **High Purity Aluminium Sulphate**

Following sufficient production of HPA, the Company will continue to use the Micro Plant to produce High Purity Aluminium Sulphate as a precursor cathode active material (pCAM) for lithium-ion batteries.

Cathode chemistries are rapidly evolving with focus aimed at reducing the amount of cobalt in the batteries. One chemistry of major interest is the Nickel Manganese Aluminium (NMA) which requires high purity aluminium salts, sulphate or nitrate as one precursor material.

### **US Inflation Reduction Act**

The United States Congress passed The Inflation Reduction Act, (**IRA**) in August 2022. The passing of the Act opens up opportunities for companies focused on delivering critical materials technology such as ChemX, for supply to the US electric vehicle (EV) industry. To qualify for certain incentives, US electric vehicle manufacturers must process a percentage of the value of the critical materials used in EV batteries in the United States or in a country which has a free trade agreement with the US such as Australia. Percentages start at 40% before 2024, increasing to 80% after 2026.

As a Company with considerable in-house metallurgical and chemical processing expertise, ChemX is rapidly moving to take advantage of these substantial opportunities and has completed a management restructure providing dedicated business development and marketing focus to secure early offtake agreements for the various critical materials in ChemX's portfolio.

*This Announcement has been authorised for release by the Board.*

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## About ChemX Materials (ASX: CMX)

ChemX is a materials technology company focused on providing critical materials required for electrification and decarbonisation. The Company's vision is to support the energy transition with materials and technology that provide real solutions to lowering carbon emissions.

Developed in-house, ChemX's HiPurA® Process is a unique technology that is capable of producing high purity alumina (HPA) and high purity aluminium cathode precursor salts for lithium-ion batteries. Initial testwork has indicated that the process is low cost and low in energy consumption, compared to alternative technologies. A key competitive advantage is that the HiPurA® process is not tied to mine production, with the feedstock being a widely available chemical.

The Company has projects in South Australia and Western Australia.

The South Australian Eyre Peninsula projects include the Kimba Kaolin-REE Project and the Jamieson Tank Manganese Project. The ChemX HiPurA® Project is located in Western Australia.

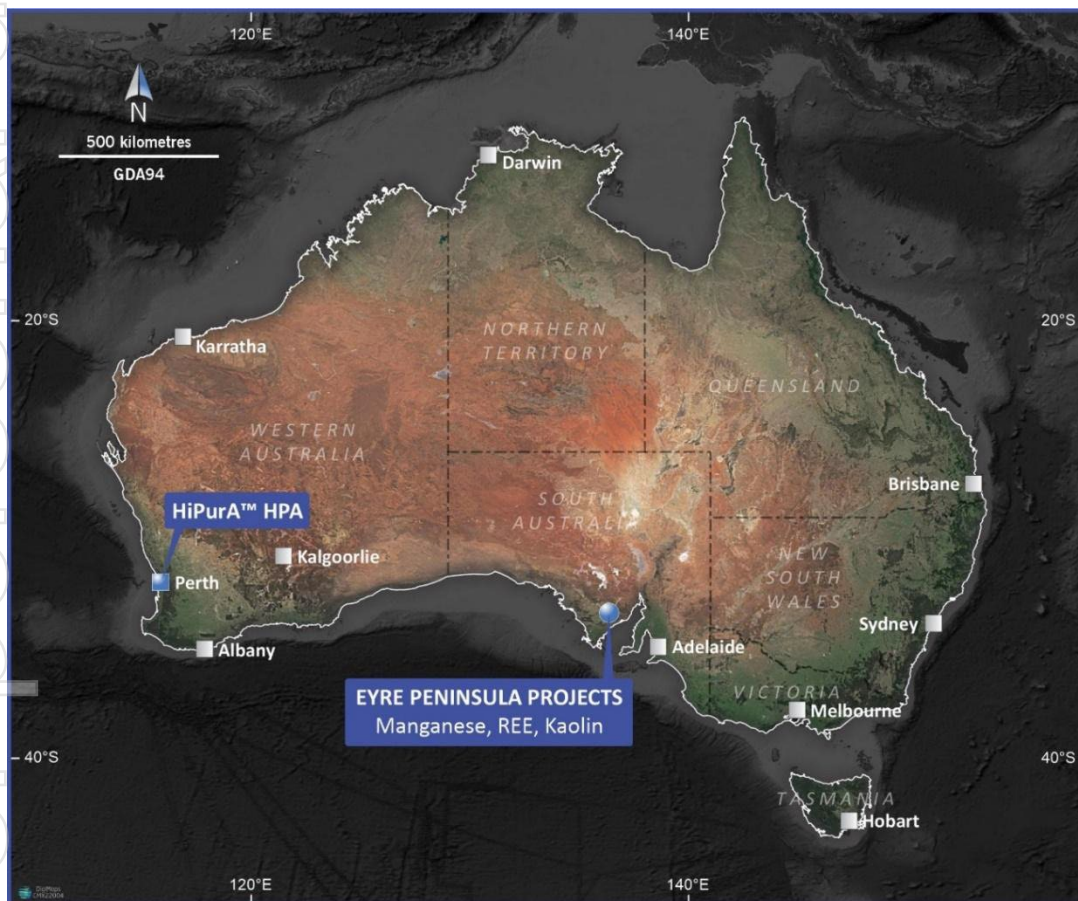


Figure 1 - ChemX Project Locations

[www.chemxmaterials.com.au](http://www.chemxmaterials.com.au)

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### Directors

Kristie Young	<b>Non-Executive Chair</b>	Warrick Hazeldine	<b>Non-Executive Director</b>
Stephen Strubel	<b>Managing Director</b>	Alwyn Vorster	<b>Non-Executive Director</b>