CHEMX MATERIALS

3 October 2023

Clarification Announcement

ChemX Materials (ASX:CMX) (ChemX or the Company), an Australian based high purity critical materials business provides further information to the previously released announcement on 29th September 2023, Micro Plant Delivers Critical 4N HPA Milestone.

The additional information JORC Table 1 is provided from page 7 of the release.

This announcement has been authorised for release by the Board.

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ASX ANNOUNCEMENT

29 September 2023

Micro Plant Delivers Critical 4N HPA Milestone

Assay confirms 4N (99.99%) HPA across an impressive 66 elements

- **Micro Plant achieves 4N (99.99%) purity High Purity Alumina (HPA) across 66 elements critical for the global battery and energy transition market.**
- **ChemX products on the pathway to deliver high purity materials to the global battery industry, the synthetic sapphire markets, LEDs, semi-conductor and optical lenses for testing and qualification, subject to suitable quantities of HPA being produced.**
- **ChemX's 100%-owned HiPurA® technology delivers key milestone within 12 months since commissioning HPA facility.**
- **The HiPurA® process is modular, scalable and independent of direct mine production, which enables ChemX to locate key future production facilities close to customers in a just-in-time customised approach.**

ChemX Materials Limited (ASX:CMX) (ChemX or the Company), an Australian based high purity critical materials developer, is delighted to announce recent results from its High Purity Alumina (HPA) Micro Plant operations, located in Perth, Western Australia.

ChemX's 100%-owned HiPurA® chemical feedstock process has delivered an outstanding 4N (99.99%) HPA result across an impressive 66 element spectrum. The Company is now working to ensure repeatability of this result through continued plant optimisation as it seeks to scale up the process to pilot plant scale.

Importantly, achieving a 4N product involves a sample quality with impurities of less than 100 parts per million and this quality is what is required for testing and qualification to commence for the global battery separator market.

In late CY2022, ChemX commissioned its Integrated HPA Facility with the goal of advancing the scale up of the HiPurA® HPA flowsheet from laboratory scale to continuous operation.

Chief Executive Officer, Peter Lee commented:

"The Company is extremely proud to have achieved an outstanding result from our Micro Plant, with detailed logged data from feedstock delivery through each stage of the process being achieved.

"I'd like to acknowledge our best-in-class team who have succeeded in calibration of the novel HiPurA® process with highly effective removal of deleterious elements.

"This is a proud day for CMX shareholders and the team," Mr Lee said.

"Today's break through validates the disruptive nature of the HiPurA® process and ChemX views that the ability to achieve bespoke high purity (4N) outcomes in a locally-based, scalable, modular format may be a game-changer for gigafactory feedstock management".

"Importantly, data obtained during the optimisation of the Micro Plant will be included in the current Pilot Plant (design) which will produce sufficient sample volumes for global customer qualification," Mr Lee said.

Next steps:

The World Intellectual Property Organisation (WIPO) issued an International Preliminary Report on Patentability for the HiPurA® process, finding that claims 1-26 complied with requirements for novelty, inventive step and industrial applicability. The International Patent Application process is ongoing.

The Company is moving forward to make further strategic investments in high purity analytical equipment and necessary resources to speed process iteration and optimisation. Process control data logged during production will work to ensure robust repeatability.

The Company has achieved solid results which satisfy known commercial specifications for HPA, but has been driving the HiPurA® process beyond this distinction to instead achieve an outstanding result across an impressive 66 element spectrum, validating the exceptional efficacy of the HiPurA® process.

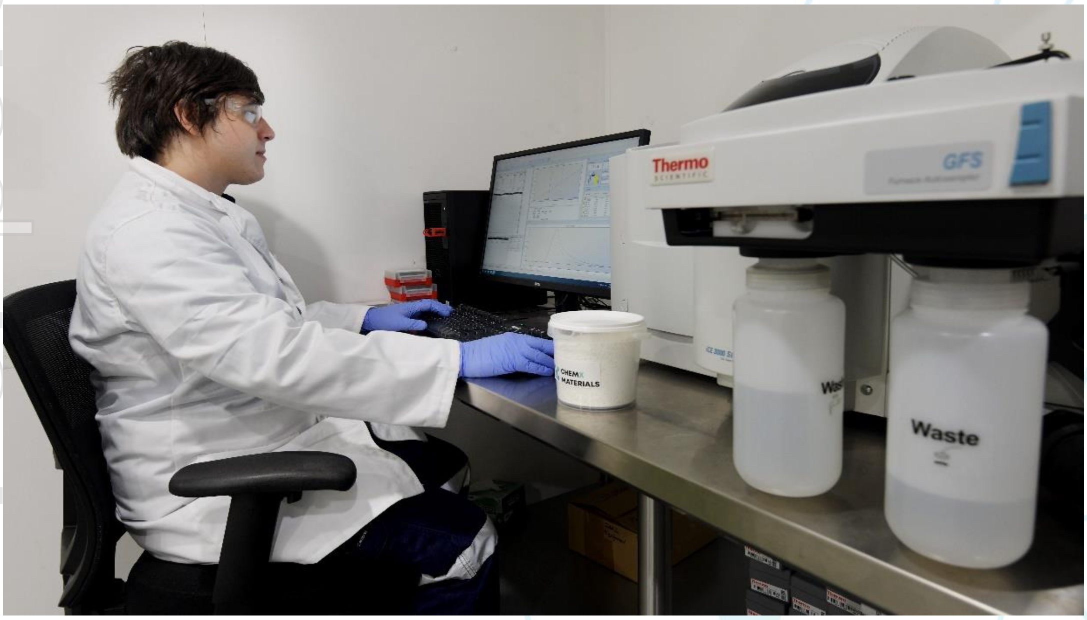

Figure 1. ChemX Chemist with Atomic Absorption Spectrometer (AAS)

Table 1. Results of HPA Analysis

Element	Sample A
	Conc. (ppm)
Ca	2.7
Cr	0.2
Cu	0.3
Fe	6.1
Ga	2.4
K	1.7
Mg	1.2
Mn	0.1
Na	1.9
Ni	0.4
Si	9.9
Sn	0.6
Ti	0.2
Zn	2.1
TOTAL, Major Elements (ppm)	**29.8**
B	26.9
S	22.0
P	9.0
All others	0.7
TOTAL (ppm)	**88.4**
% Purity	**99.99**

Notes:
1) 'Major Elements' listed represent the 14 elements most commonly reported within commercial HPA specifications.
2) Analysis conducted by LabWest Minerals Analysis Pty Ltd. (NATA accredited Laboratory)
2) Analysis Method – Microwave Digest, HF/Multiacid, 66 Elements including REE's by ICP-MS/OES.
3) Complete analysis provided in Appendix A

About the HiPurA® 100% owned process

CMX's HiPurA® process is a disruptive flowsheet which converts aluminous chemical feedstocks through selective refining to HPA. Ultimately, CMX aims to achieve the delivery of 4N high grade and potentially 5N (99.999%) HPA products for the electric vehicle battery separator and synthetic sapphire markets, LEDs, semi-conductor and optical lenses.

The HiPurA® process is modular, scalable and independent of direct mine production, which enables ChemX to locate key future production facilities close to customers in a just-in-time customised approach.

This Announcement has been authorised for release by the Board.

ENDS

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COMPETENT PERSON STATEMENT – Metallurgy

Mr Steven Hoban is a Principal Metallurgist with a Bachelor of Mineral Science degree and Member of the AusIMM institute with more than 25 years of experience. Steven's expertise lies across many fields in the minerals industry with a key role in the development, design and interpretation of laboratory testwork with significant recent experience in high purity applications such as silica, lithium and alumina. Mr Hoban has sufficient experience relevant to the type of processing and analysis under consideration and the activity undertaken to qualify as a Competent Person as defined by the AusIMM.

Mr Hoban deems these results as true and correct at the time of reporting and representative of the product produced from the HiPurA® process pilot plant by ChemX Materials.

Mr Hoban consents to the inclusion in this announcement of the matters based upon the information in the form and context in which it appears.

Appendix A

Complete Elemental HPA Analysis

Element	Sample A Conc. (ppm)	Element.	Sample A Conc. (ppm)
Ag	0.002	Nb	0.01
As	<0.01	Nd	0.003
Au	<0.001	Ni	0.4
B	26.7	P	9.0
Ba	0.03	Pb	0.1
Be	0.002	Pd	<0.001
Bi	0.001	Pr	0.001
Ca	2.7	Pt	<0.001
Cd	0.002	Rb	0.001
Ce	0.004	Re	0.002
Co	0.01	S	22.0
Cr	0.2	Sb	0.02
Cs	<0.001	Sc	<0.001
Cu	0.3	Se	<0.02
Dy	<0.001	Si	9.9
Er	0.001	Sm	0.001
Eu	<0.001	Sn	0.6
Fe	6.1	Sr	0.02
Ga	2.4	Ta	0.01
Gd	<0.001	Tb	<0.001
Ge	0.02	Te	0.003
Hf	0.01	Th	0.004
Hg	<0.001	Ti	0.2
Ho	<0.001	Tl	<0.001
I	0.02	Tm	<0.001
In	<0.001	U	0.01
K	1.7	V	0.5
La	0.004	W	<0.01
Li	0.04	Y	0.01
Lu	<0.001	Yb	<0.001
Mg	1.2	Zn	2.1
Mn	0.1	Zr	0.1
Mo	0.03	**TOTAL (ppm)**	**88.4**
Na	1.9	**Purity (%)**	**99.99**

Reference: LabWest Analysis Report No. ALW008153

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 testwork 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 testwork has indicated that the process is low costs and low in energy consumptions, compared to alternative methods. A key competitive advantage is that the HiPurA® process is modular, scalable and is not tied to mine production, with the feedstock being a widely available chemical.

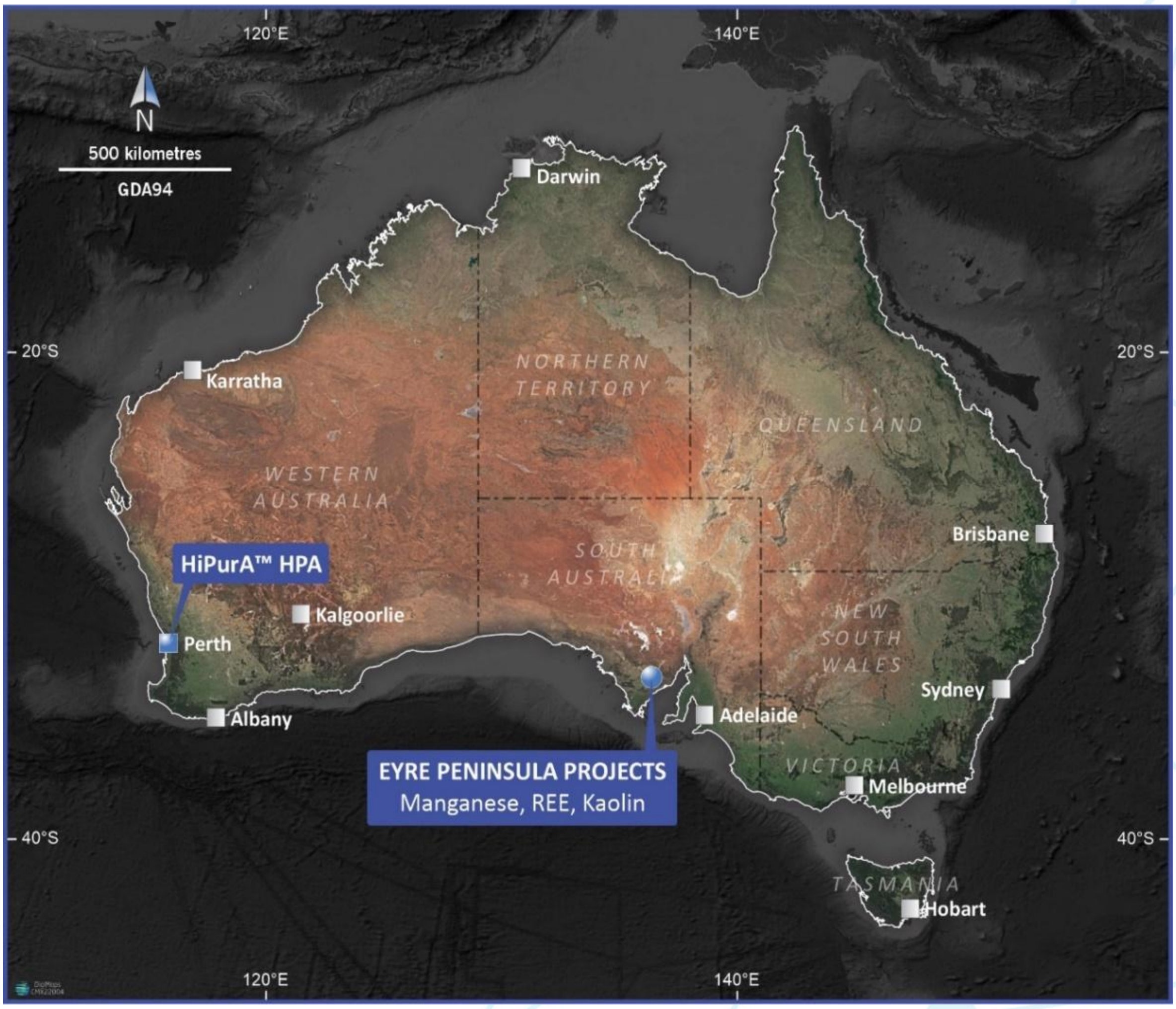

Figure 1: ChemX Project Locations

www.chemxmaterials.com.au [LinkedIn]

Appendix A JORC Code (2012 Edition) Table 1 – High Purity Alumina

Section 1: Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections)

Criteria	JORC Code explanation	Commentary
Sampling techniques	*Nature and quality of sampling (e.g., cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.* *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g., "RC drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay"). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g., submarine nodules) may warrant disclosure of detailed information.*	Final HPA product (post calcination material) is obtained from several areas within the crucible volume to provide a representative composite sample mass of approximately 50 grams. Robust testwork with external laboratories (predominantly Intertek Perth and LabWest Perth) has resulted in sufficient confidence within the reported results. Predominant analytical methods included ICP-MS and Microwave Digest Methods (both NATA Accredited) to analyse 66 elements with sub parts per million (ppm) precision achieved. The Competent Person (CP) considers that the sample techniques adopted by ChemX are appropriate for the intended purpose and aforementioned analytical methods.
Drilling techniques	*Drill type (e.g., core, RC, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g., core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).*	Not Applicable. Samples were obtained from ChemX's Micro Plant employing a novel process, using an industrial sourced feedstock.

Criteria	JORC Code explanation	Commentary
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.* *Measures taken to maximise sample recovery and ensure representative nature of the samples.* *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	Not Applicable.. Not Reporting exploration Results.
Logging	*Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.* *The total length and percentage of the relevant intersections logged.*	Not Applicable. Not Reporting exploration Results.
Subsampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all core taken.* *If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.* *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* *Quality control procedures adopted for all subsampling stages to maximise representivity of samples.* *Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling.* *Whether sample sizes are appropriate to the grain size of the material being sampled.*	Samples presented as a homogenised high purity crystalline alumina, obtained from precipitation, followed by filtration, drying and final calcination processes. The nature of the precipitation and filtration stages results in this homogenised product, which is split into four crucibles for removal of crystalline water via calcination. This material is then parcelled to 100 to 500g allotments for batch storage within ChemX's production sample archive. With the high level of precision within the analytical methods applied, there is no evidence the sample sizes are inadequate or inappropriate for subsampling using the techniques adopted. The CP does not consider there is any bias in the ChemX sampling process.
Quality of assay data and laboratory tests	*The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* *For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.*	LabWest completed internal quality assurance/quality control (QAQC) assay procedures comprising appropriate reference samples and standards. No material issues were identified in the laboratory QAQC. LabWest is NATA accredited in accordance with ISO/IEC 17025, and obtained this certification 16/9/2011 (#17061). The CP considers that a reasonable level of confidence can be placed in the accuracy and precision of the assay data used in the preparation of the reported results.

Criteria	JORC Code explanation	Commentary
	Nature of quality control procedures adopted (e.g., standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.* *The use of twinned holes.* *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* *Discuss any adjustment to assay data.*	ChemX uses third party 5N reference material to provide benchmark on selected assay submissions. The CP considers the verification of sampling and assaying appropriate for the high purity nature of HPA.
Location of data points	*Accuracy and quality of surveys used to locate drillholes (collar and downhole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* *Specification of the grid system used.* *Quality and adequacy of topographic control.*	Not applicable. Not Reporting exploration Results.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.* *Whether the data spacing, and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* *Whether sample compositing has been applied.*	Not applicable. Not Reporting exploration Results.
Orientation of data in relation to geological structure	*Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	Not applicable. Not Reporting exploration Results.
Sample security	*The measures taken to ensure sample security.*	Samples as captured from the calcination crucibles are kept within 100 to 500g allotments to provide batch verification capability as may be deemed warranted.

Criteria	JORC Code explanation	Commentary
		Submitted samples (nominally 50g) are held securely (and registered within Laboratory Information Management System (LIMS) upon arrival) by the responsible external laboratory to ensure ability to verify analysis as deemed necessary. Sample bottles are sampled and sealed immediately to prevent inadvertent contamination with incorrect sampling or foreign matter. The CP considers the sample security does not pose any risk for the reporting of these results.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	ChemX has conducted several visits to LabWest's facilities with no concerns being identified.

Section 2: Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	*Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	Not applicable. Not Reporting exploration Results.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Not applicable. *Not Reporting exploration Results.*
Geology	*Deposit type, geological setting and style of mineralisation.*	Not applicable. Not Reporting exploration Results.
Drillhole information	*A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drillholes:* • *Easting and northing of the drillhole collar* • *Elevation or RL (Reduced Level – Elevation above sea level in metres) of the drillhole collar* • *Dip and azimuth of the hole* • *Downhole length and interception depth* • *Hole length.*	Not applicable. Not Reporting exploration Results.

Criteria	JORC Code explanation	Commentary
	If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	
Data aggregation methods	*In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g., cutting of high grades) and cut-off grades are usually Material and should be stated.* *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	Not applicable. Not Reporting exploration Results.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drillhole angle is known, its nature should be reported.* *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g., "downhole length, true width not known").*	Not applicable. Not Reporting exploration Results.
Diagrams	*Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drillhole collar locations and appropriate sectional views.*	Not applicable. Not Reporting exploration Results.
Balanced reporting	*Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	Not applicable. Not Reporting exploration Results.

Criteria	JORC Code explanation	Commentary
Other substantive exploration data	*Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	Not applicable. Not Reporting exploration Results.
Further work	*The nature and scale of planned further work (e.g., tests for lateral extensions or depth extensions or large-scale step-out drilling).* *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	The Company is continuing optimisation activities within its Micro Plant with the objective to achieve higher purity HPA targets. The optimised Micro Plant learnings will be applied to the larger Pilot Plant, which is to be constructed within Q4 CY2023.