28th October 2020

COMMERCIAL GRADE ZEOLITE TYPE A PRODUCED FROM LITHIUM REFINERY PROCESS RESIDUE

Metalsearch Limited (ASX: "MSE", "Metalsearch" or "the Company") an emerging industrial kaolin and mineral processing technology Company is pleased to announce the successful synthesis of commercial grade zeolite Type A also known as Linde Type A ("LTA") from leached spodumene process residue using patent-pending technology ("IP") developed by the University of Queensland ("UQ"). This promising result is the product of a dedicated accelerated mine-tailings and process residues research program currently underway.

Highlights

- MSE has received coal tailings and lithium refinery process residue ("Li Process Residue") from two Australian mining companies, and coal gangue from a Chinese synthetic zeolite producer.
- Lab-scale testwork undertaken by UQ confirms the successful synthesis of pure zeolite LTA from Li Process Residue using patent-pending technology.
- Zeolite LTA produced has been evaluated against commercial grade Type A zeolite and found to be comparable in terms of quality and impurity levels.
- MSE has engaged an in-house senior process engineer to work in unison with UQ to aid economic understanding of flowsheet and enhance potential commercial outcomes.

MSE has been actively seeking mine tailings and process residues for testing under conditions of patent-pending technology developed by UQ to aid the development of a potential commercial remediation solution for the mining industry.

To date interest has surfaced from two Australian mining companies and a leading synthetic zeolite producer in China to assess the potential of MSE mineral processing technologies to convert mine tailings and process residue streams into commercially-saleable zeolites. To date MSE has received the following potential feed materials:

- coal tailings;
- Li Process Residue; and
- coal gangue.

On 1st August MSE executed an accelerated research program with the UQ School of Chemical Engineering, focused on processing mine tailings and process residues under the conditions of MSE patent-pending technologies to produce high value zeolites. The mine waste and process residue to zeolite research program is running in parallel with the Company's core research agreement with UQ which commenced on the 1st June 2020[1].

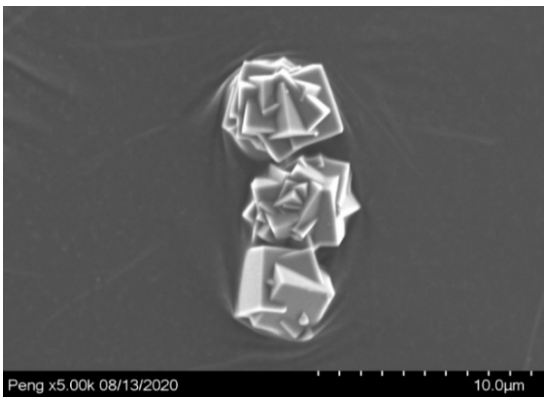
During this dedicated research program UQ developed a novel process (flowsheet) for the manufacture of synthetic zeolites from Li Process Residue (leached spodumene). A provisional patent application for the manufacturing (synthesising) of zeolites from Li Process Residue was lodged on the 21st October 2020.[2]

[1] ASX announcement 07/05/20 "Synthetic Zeolite Research Agreement signed with the University of Queensland"

[2] ASX announcement 21/10/20 "Patent Application lodged for the Synthesis of Zeolites from Lithium Refinery Process Residues"

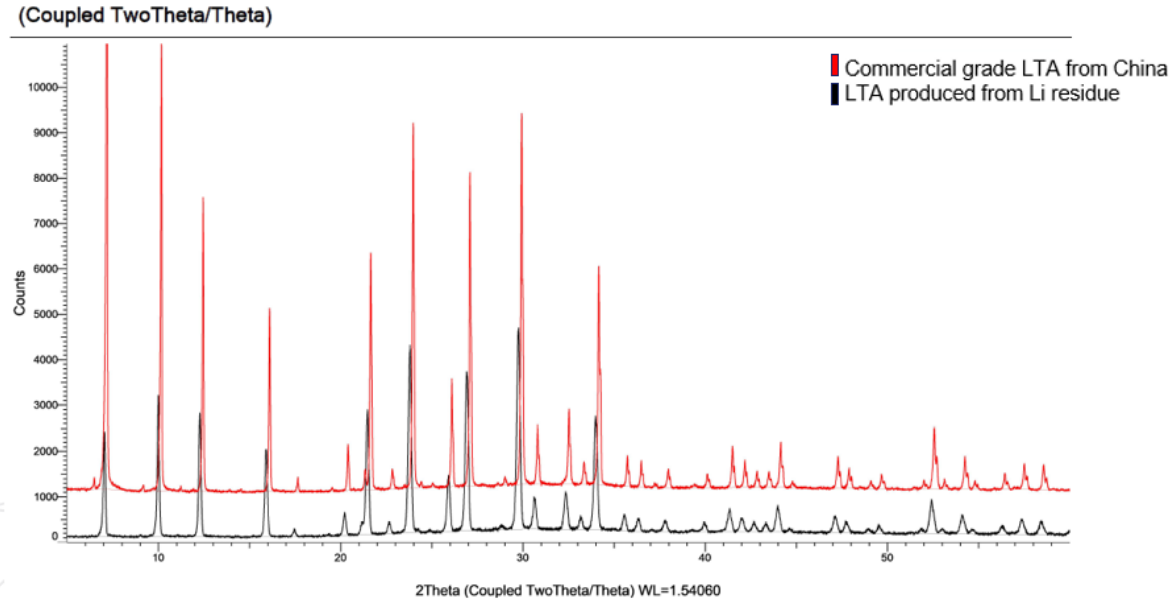
MSE has engaged a senior process engineer to work in unison with the UQ lab team during the accelerated research program to develop detailed metallurgical simulation models to aid economic understanding and development of the zeolite process flowsheet and enhance potential for future commercial outcomes.

Initial UQ lab-scale testwork targeted establishing the ability to convert leached spodumene residue under MSE technology conditions into commercial grade zeolite. During this program UQ successfully produced pure Linde Type A zeolite ("LTA") under a novel patent-pending process flowsheet from leached spodumene residue.



picture courtesy of Dr. Hong (Marco) Peng - The University of Queensland

UQ analysis confirms XRD pattern (below) for zeolite LTA produced from Li Process Residue mirrors signature of commercial grade zeolite from one of China's leading zeolite manufacturers.



The ability to apply suitable mine and/or process residue streams as a zero-cost feed in the production of high value zeolites offers an integrated approach that can potentially improve a mining project's margins by adding downstream revenues.

UQ has confirmed that the potential exists to optimise the novel and proprietary zeolite LTA flowsheet to enable the synthesis of a range of zeolite Type A molecular sieve products cost effectively.

Zeolite Type A

Zeolite A is a sodium aluminosilicate and is utilized as a builder in tablets and detergent powders for the water-softening in washing process. This type of zeolite is also known as Linde Type A (LTA), which belongs to the aluminosilicate molecular sieves family. There are various zeolite type A products, which include:

- 4A applications include detergent builder and polyvinyl chloride (PVC) heat stabiliser. 4A molecular sieve can be used for the deep drying of air, natural gas, alkaline, refrigerants and other gases and liquids.
- 3A is a molecular sieve that has a pore size that is 3 angstroms (3A), hence it will not adsorb any molecules larger than 3A. It is a very effective and reliable desiccant (drying agent) and is used in a wide variety of commercial applications, some of which include, natural gas drying, refrigerant drying, moisture removal in polyurethane plastic/paint, static drying of insulating glass units and is also applied in method of drying that is used by fuel ethanol producers.
- 5A is a molecular sieve that has a pore size that is 5 angstroms (5A). It cannot adsorb any molecules smaller than 5A and primary applications are separation of alkane types, co-adsorption of carbon dioxide and moisture, along with pressure swing adsorption (PSA) for gases.

The 2019 global synthetic zeolite market was estimated at USD $5.58 billion[3]. Zeolite A accounted for the largest proportion of the global market share at 62.9% in 2019, with a market value of USD $3.51 billion[4].

Mr. Peter Zardo, Managing Director, Metalsearch commented:

"I'm delighted with the promising results UQ has achieved in converting a Li refinery by-product into commercial grade zeolite Type A product.

It is understandable that the potential to convert mine tailings and process residues into downstream product revenues, presents a compelling proposition and is garnering attention.

MSE is excited to be partnering with UQ, one of Australia's leading schools in environmental engineering, in continuing to develop a cleantech solution for the mining sector"

Dr. Hong (Marco) Peng, Advance Queensland Industry Research Fellow (mid-career), The University of Queensland commented:

" Zeolites are an exciting and versatile commercial material, and it is pleasing to be leading the UQ team, in achieving successful production of pure zeolite LTA from lithium processing residue.

I am confident, the potential of our mineral processing technology will continue to grow and hopefully aid progress of commercial opportunities that involve the reduction of mine tailings and process residues"

[3] Verified Market Research Report "Global Synthetic Zeolite Market Size & Forecast to 2026"
[4] Verified Market Research Report "Global Synthetic Zeolite Market Size & Forecast to 2026"

This Announcement has been approved by the Board.

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About Zeolites

Zeolites play an important role in a cleaner and safer environment.

- zeolites are an effective substitute for harmful phosphates in powder detergent, now banned in many parts of the world because of blue green algae toxicity in waterways;
- as catalysts zeolites increase process efficiencies = decrease in energy consumption;
- zeolites can act as solid acids and reduced the need for more corrosive liquid acids;
- zeolites adsorbent capabilities see them widely used in water treatment i.e. heavy metal removal including those produced by nuclear fission; and
- as redox catalysts sorbents zeolites can help remove exhaust gases and CFC's.

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About Metalsearch

Metalsearch is an emerging industrial kaolin and mineral processing technology Company.

We are working with the University of Queensland to commercialise novel and proprietary zeolite mineral processing technology. Whilst continuing to develop our Queensland based Abercorn Project, acquired in August 2019.

The Abercorn Project is a large-scale kaolin prospect, which has the potential to underpin the production of industrial kaolin mineral product for global markets and new age materials manufactured using our novel and proprietary mineral processing technologies.

Metalsearch aspires to improving environmental outcomes by building on the potential of our zeolite mineral processing technology to be applied as a commercial remediation solution by a using suitable mine waste and process residues streams as zero-cost feed for low cost production of high value zeolites.

Forward-looking Statements

This release may contain certain forward-looking statements with respect to matters including but not limited to the financial condition, results of operations and business of Metalsearch and certain of the plans and objectives of Metalsearch with respect to these items.

These forward-looking statements are not historical facts but rather are based on Metalsearch current expectations, estimates and projections about the industry in which Metalsearch operates, and its beliefs and assumptions. Words such as "anticipates," "expects," "intends," "plans," "believes," "seeks," "estimates", "guidance" and similar expressions are intended to identify forward looking statements and should be considered an at-risk statement.

[5] Verified Market Research Report “Global Synthetic Zeolite Market Size & Forecast to 2026”

Such statements are subject to certain risks and uncertainties, particularly those risks or uncertainties inherent in the process of developing technology and in the endeavour of building a business around such products and services.

These statements are not guarantees of future performance and are subject to known and unknown risks, uncertainties and other factors, some of which are beyond the control of Metalsearch, are difficult to predict and could cause actual results to differ materially from those expressed or forecasted in the forward looking statements. Metalsearch cautions shareholders and prospective shareholders not to place undue reliance on these forward-looking statements, which reflect the view of Metalsearch only as of the date of this release. The forward-looking statements made in this announcement relate only to events as of the date on which the statements are made. Metalsearch will not undertake any obligation to release publicly any revisions or updates to these forward-looking statements to reflect events, circumstances or unanticipated events occurring after the date of this announcement except as required by law or by any appropriate regulatory authority.