

20 January 2020

## High Purity Lithium Hydroxide Produced

- Lithium hydroxide monohydrate grading **>56.5% LiOH** produced from recent LOH-Max™ pilot plant batch trial
- Impurity levels for all deleterious elements for existing producer battery grade product were below required levels for most benchmark specifications
- LOH-Max™ process design revised for batch trial findings and to be incorporated into Phase 1 Plant engineering
- Batch production of lithium hydroxide samples for initial qualification purposes has commenced

Lepidico Ltd (ASX:LPD) (“Lepidico” or “Company”) is pleased to advise that assay results from the recent pilot plant lithium hydroxide monohydrate batch trials have been received, with a purity of >56.5% LiOH achieved, which is consistent with a nominal battery grade reference purity of 56.5% LiOH. Importantly, impurity levels of the deleterious elements for battery grade specifications were below required levels and often below detection limits. These results confirm the viability of LOH-Max™ at pilot plant scale as a new process for the production of high purity lithium hydroxide from a lithium sulphate intermediate, importantly without the production of potentially problematic sodium sulphate as a by-product.

Product	Lepidico Pilot Plant	Livent	Albemarle	Tianqi
LiOH (% min)	<b>&gt;56.5</b>	56.5	56.5	56.5 (99.0% LiOH.H <sub>2</sub> O)
<b>Impurity</b>				
SO <sub>4</sub> (wt%)	<b>&lt;0.005</b>	0.010	0.05	0.01
CO <sub>2</sub> (wt%)	<b>0.25</b>	0.35	0.30	0.30
Na + K (wppm)	<b>22</b>	30	70	80
Ca (wppm)	<b>&lt;15</b>	15	30 (CaO)	20
Fe (wppm)	<b>&lt;5</b>	5	10 (Fe <sub>2</sub> O <sub>3</sub> )	7
Chloride (wt%)	<b>&lt;0.01</b>	0.002	0.03	0.002

Source: company websites, Lepidico

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Joe Walsh, Managing Director of Lepidico said, “Production of a high purity lithium hydroxide monohydrate with very low levels of deleterious elements is a clear endorsement of the LOH-Max™ process. In addition to being compatible with Lepidico’s L-Max® process technology, LOH-Max™ also represents an alternative final process step in the conventional conversion of spodumene concentrates, without the generation of costly and potentially problematic sodium sulphate. Lepidico is now focused on generating samples of all products from the Phase 1 Project for qualification purposes.”

Stockpiled lithium sulphate liquor from Campaign 1 of the continuous L-Max® pilot plant were used as feed to the LOH-Max™ pilot. The LOH-Max™ trial was conducted in a series of large-scale batch operations, performed in sequence to match the process flowsheet. Key recycle streams were introduced back into the LOH-Max™ process in order to properly account for any build-up of impurities. Given the relatively benign nature of the materials in the process, no exotic materials of construction were required and the major equipment employed was sourced from the existing L-Max® pilot plant.

The process involves generation of an initial crude lithium hydroxide followed by refining into a high purity lithium hydroxide monohydrate product. Optimisation testing, conducted in parallel to the LOH-Max™ pilot identified a number of improvements to the process that have led to modifications to the previous design for the Phase 1 Plant.

Carbon dioxide represents a challenge in the refining and sampling of high purity lithium hydroxide monohydrate due to its affinity to absorb CO<sub>2</sub> from the air. A method for sampling high purity LiOH.H<sub>2</sub>O immediately after production was developed by Strategic Metallurgy and successfully trialled in early January 2020.

Work has now started on refining a larger sample of high purity lithium hydroxide monohydrate, which is planned to be used to start the product qualification process with prospective customers.

### **Further Information**

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### **About Lepidico Ltd**

Lepidico Ltd is an ASX-listed Company focused on exploration, development and production of lithium chemicals. Lepidico owns the technology to a metallurgical process that has successfully produced lithium carbonate from non-conventional sources, specifically lithium-rich mica minerals including lepidolite and zinnwaldite. The L-Max® Process has the potential to complement the lithium market by adding low-cost lithium carbonate supply from alternative sources. More recently Lepidico has added LOH-Max™ to its technology base, which produces lithium hydroxide from lithium sulphate without by-product sodium sulphate. The Company is currently conducting a Feasibility Study for a 5,000 tonne per annum (LCE) capacity Phase 1 lithium chemical plant, planned to be constructed in Abu Dhabi and targeting commissioning in late 2021. Work is currently being undertaken to incorporate LOH-Max™ into the Phase 1 Plant Project design and engineering. Feed to the Phase 1 Plant is planned to be sourced from the Karibib Lithium Project in Namibia, 80% owned by Lepidico, where a Mineral Resource of 8.8 Mt grading 0.56% Li<sub>2</sub>O and 59ppm Ta<sub>2</sub>O<sub>5</sub> is estimated (ASX announcement of 16 July 2019) and/or the Alvarrões Lepidolite Mine in Portugal under an ore access agreement with owner-operator Grupo Mota (ASX announcement of 7 December 2017).

### **Forward-looking Statements**

All statements other than statements of historical fact included in this release including, without limitation, statements regarding future plans and objectives of Lepidico, are forward-looking statements. Forward-looking statements can be identified by words such as "anticipate", "believe", "could", "estimate", "expect", "future", "intend", "may", "opportunity", "plan", "potential", "project", "seek", "will" and other similar words that involve risks and uncertainties. These statements are based on an assessment of present economic and operating conditions, and on a number of assumptions regarding future events and actions that are expected to take place. Such forward-looking statements are not guarantees of future performance and involve known and unknown risks, uncertainties, assumptions and other important factors, many of which are beyond the control of the Company, its directors and management of Lepidico that could cause Lepidico's actual results to differ materially from the results expressed or anticipated in these statements.

The Company cannot and does not give any assurance that the results, performance or achievements expressed or implied by the forward-looking statements contained in this release will actually occur and investors are cautioned not to place any reliance on these forward-looking statements. Lepidico does not undertake to update or revise forward-looking statements, or to publish prospective financial information in the future, regardless of whether new information, future events or any other factors affect the information contained in this release, except where required by applicable law and stock exchange listing requirements.