

Avalon's Lithium Hydroxide Product Successfully Tested as Lithium Ion Battery Cathode Material

July 6, 2017

Toronto, Ontario--(Newsfile Corp. - July 6, 2017) - [Avalon Advanced Materials Inc.](#) (TSX: AVL) (OTCQX: AVLNF) ("Avalon" or the "Company") is pleased to report on the results from laboratory testing of its lithium hydroxide product conducted recently by the National Research Council of Canada ("NRC"). The lithium hydroxide product was made from petalite concentrate using Avalon's proprietary hydrometallurgical process developed for the Separation Rapids Lithium Project, Kenora, ON.

The product sample, technically referred to as Lithium Hydroxide Monohydrate ($\text{LiOH}\cdot\text{H}_2\text{O}$), was evaluated by NRC as a potential feed material for lithium ion battery cathodes. Elemental analysis of Avalon's lithium hydroxide product confirmed that it was of high purity with very minor amounts of non-lithium metal impurities within the range reported by commercial suppliers of battery grade lithium hydroxide materials.

A lithium and manganese-rich nickel manganese cobalt oxide (LMR-NMC) cathode material was synthesised using Avalon's lithium hydroxide product and demonstrated "excellent electrochemical performance" exhibiting a high capacity rate (209 mA/h/g), high initial coulombic efficiency (86%) and very little capacity fade (<1% after 60 cycles): all comparable to the performance of material synthesised from a reference lithium hydroxide product.

NRC reported that the Avalon lithium hydroxide product would be a suitable precursor for the synthesis of lithium and manganese-rich NMC-type cathode materials. Avalon has also identified opportunities to further improve the purity of its initial lithium hydroxide product and will be following up with further testwork in the near future. This work will be supported by funding received from *Northern Innovation Program* of the Northern Ontario Heritage Fund Corporation ("NOHFC") as disclosed in the Company's news release dated [June 27, 2017](#). The *Northern Innovation Program* is designed to support the development and commercialization of new technologies that will contribute to future prosperity in Northern Ontario.

The Company's Preliminary Economic Assessment ("PEA") disclosed in the news release dated [September 27, 2016](#), outlined a scenario for economic production of a high purity lithium hydroxide product from its concentrate of the lithium mineral petalite using its proprietary hydrometallurgical process. Avalon is now in the process of preparing an updated technical report to reflect the revised mineral resource estimate following the recent drilling program, updated product pricing and modifications to the process flowsheet.

Avalon is now planning to develop a Phase 1 demonstration plant in the Kenora area to not only confirm the efficiency of its proprietary petalite flotation and lithium hydroxide production processes but also to provide large volume trial samples for customers interested in its lithium hydroxide product and other lithium mineral by-products. Avalon is targeting an initial production capacity for the demonstration plant of between 650 and 1,300 tonnes of lithium hydroxide per annum.

The technical information included in this news release has been reviewed and approved by the Company's Senior Vice President, Metallurgy and Technology Development, David Marsh, FAusIMM (CP), and Donald S. Bubar, P.Geo. both Qualified Persons under NI 43-101.

About Avalon Advanced Materials Inc.

Avalon Advanced Materials Inc. is a Canadian mineral development company specializing in niche market metals and minerals with growing demand in new technology. The Company has three advanced stage projects, all 100%-owned, providing investors with exposure to lithium, tin and indium, as well as rare earth elements, tantalum, niobium, and zirconium. Avalon is currently focusing on its Separation Rapids Lithium Project, Kenora, ON and its East Kemptville Tin-Indium Project, Yarmouth, NS. Social responsibility and environmental stewardship are corporate cornerstones.

For questions and feedback, please e-mail the Company at ir@AvalonAM.com, or phone Don Bubar, President & CEO at 416-364-4938.

This news release contains "forward-looking statements" within the meaning of the United States Private Securities Litigation Reform Act of 1995 and applicable Canadian securities legislation. Forward-looking statements include, but are not limited to, the statement that the Avalon lithium hydroxide product would be a suitable precursor for the synthesis of lithium and manganese-rich NMC-type cathode materials, that Avalon has also identified opportunities to further improve the purity of its initial lithium hydroxide product and will be following up with further testwork in the near future, that this work will be supported by funding received from Northern Innovation Program of the Northern Ontario Heritage Fund Corporation, that Avalon is now in the process of preparing an updated technical report, that Avalon is now planning to develop a Phase 1 demonstration plant in the Kenora area and that Avalon is targeting an initial production capacity for the demonstration plant of between 650 and 1,300 tonnes of lithium hydroxide per annum . Generally, these forward-looking statements can be identified by the use of forward-looking terminology such as "potential", "scheduled", "anticipates", "continues", "expects" or "does not expect", "is expected", "scheduled", "targeted", "planned", or "believes", or variations of such words and phrases or state that certain actions, events or results "may", "could", "would", "might" or "will be" or "will not be" taken, reached or result, "will occur" or "be achieved". Forward-looking statements are subject to known and unknown risks, uncertainties and other factors that may cause the actual results, level of activity, performance or achievements of Avalon to be materially different from those expressed or implied by such forward-looking statements. Forward-looking statements are based on assumptions management believes to be reasonable at the time such statements are made. Although Avalon has attempted to identify important factors that could cause actual results to differ materially from those contained in forward-looking statements, there may be other factors that cause results not to be as anticipated, estimated or intended. Factors that may cause actual results to differ materially from expected results described in forward-looking statements include, but are not limited to market conditions, and the possibility of cost overruns or unanticipated costs and expenses as well as those risk factors set out in the Company's current Annual Information Form, Management's Discussion and Analysis and other disclosure documents available under the Company's profile at www.SEDAR.com. There can be no assurance that such statements will prove to be accurate, as actual results and future events could differ materially from

those anticipated in such statements. Such forward-looking statements have been provided for the purpose of assisting investors in understanding the Company's plans and objectives and may not be appropriate for other purposes. Accordingly, readers should not place undue reliance on forward-looking statements. Avalon does not undertake to update any forward-looking statements that are contained herein, except in accordance with applicable securities laws.