

11 April 2024

CATHODE CONDUCTIVITY ENHANCER

Sarytogan Graphite Limited (ASX: SGA, "the Company" or "Sarytogan") is pleased to report that Sarytogan Ultra-High Purity Fines (UHPF) has been successfully tested as a cathode conductivity enhancer in AA alkaline batteries and in lithium monofluoride (Li/CFx) batteries.

Highlights

- Sarytogan plans to produce three product types in approximately equal proportions:
 - Micro-crystalline 80-85% Carbon (C) for traditional industrial uses,
 - Uncoated Spherical Purified Graphite (USPG) for use in Li-ion battery anodes, and
 - UHPF for advanced industrial uses including the nuclear industry and now as a cathode conductivity enhancer.
- Sarytogan UHPF was added to these primary battery applications with superior results:
 - AA alkaline battery cathode for use in portable household items,
 - AA alkaline battery can lining, and
 - Li/CFx battery cathode for use in medical, aviation, and military applications.
- Next Steps:
 - Long-term charge and discharge cycling of USPG cells previously reported,
 - Testing of Coated Spherical Purified Graphite (CSPG) in Li-ion anodes, and
 - Pre-Feasibility Study (PFS) on track for completion in Q3 2024.

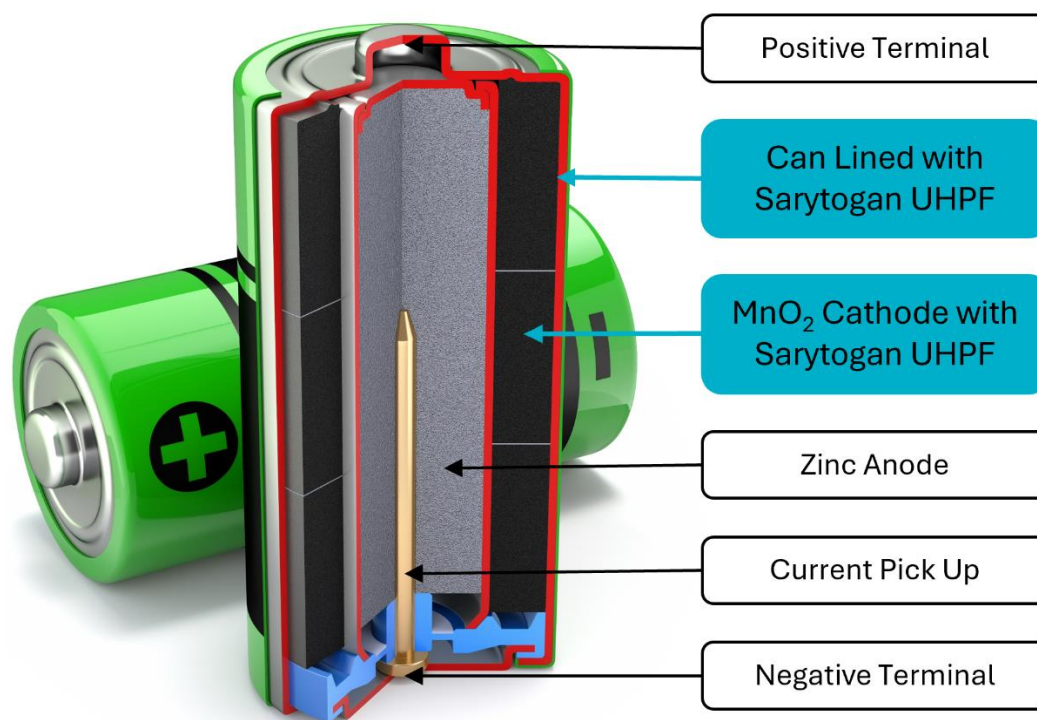


Figure 1 – Cross Section of an alkaline battery illustrating the use of Sarytogan UHPF.

Sarytogan Managing Director, Sean Gregory commented:

"These results demonstrate yet another advanced use for Sarytogan Graphite products. Given the giant size of the Sarytogan Graphite Deposit, the way to maximise value will be to place as many units of carbon into as many markets as possible. Sarytogan's inverted flowsheet thermally purifies the graphite before rather than after spheroidization. This allows Ultra-High Purity Fines to be produced as a high value by-product to the spherical graphite products for the rapidly growing lithium-ion battery market."

Sarytogan Product Mix

Sarytogan plans to produce three product types in approximately equal proportions (Figure 2).

The upstream beneficiation using grinding and flotation is planned to produce microcrystalline graphite at 80-85% C at the mine site (refer ASX Announcement 13 November 2023). Approximately one third of the micro-crystalline graphite will be diverted for sale into traditional industrial uses such as refractories, crucibles, foundries, friction parts, pencils, and lubricants.

The other two thirds of the flotation concentrate will be processed downstream by thermal purification and spheroidization. Sarytogan has demonstrated purification to as high as 99.9992% C (refer ASX Announcement 5 March 2024) and spheroidization at 54% yield (refer ASX Announcement 19 December 2023). The resulting USPG has been demonstrated as suitable for use in the anode of lithium-ion batteries (refer ASX announcement 8 February 2024).

The remaining 46% by-product from spheroidization is UHPF. At the very high 'five-nines' purity achieved, some of the UHPF may be suitable for use in the nuclear industry. This announcement deals with the use of Sarytogan UHPF graphite in the cathode conductivity enhancer market. Specifically in the Li/CFx battery market of 1 billion cells per annum and the alkaline battery market of 12 billion cells per annum.

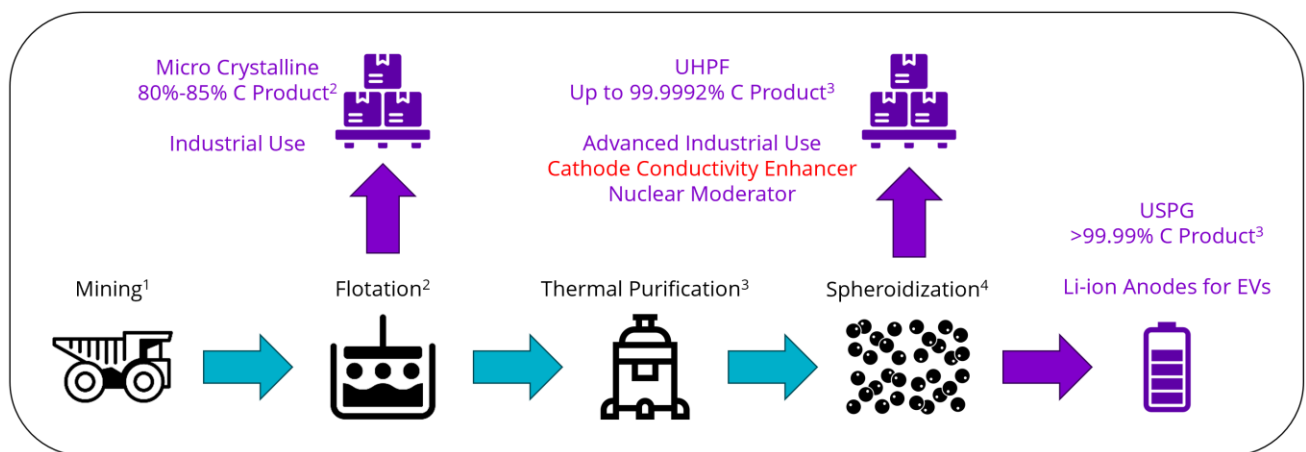


Figure 2 - Sarytogan Proposed Schematic Flowsheet and Product Mix.
 Refer ASX Announcements: ¹ 27/3/23, ² 13/11/23, ³ 5/3/23, ⁴ 19/12/23.

Alkaline Battery

AA alkaline battery cells were manufactured by our American Technology Partner. Sarytogan UHPF was blended with the manganese dioxide cathode and as a lining sprayed onto the inside of the metal can (Figure 1). The battery produced was measured as having higher capacity than uncoated control cells (Figure 5) and higher capacity than cells made from an existing graphite product sold for this use.

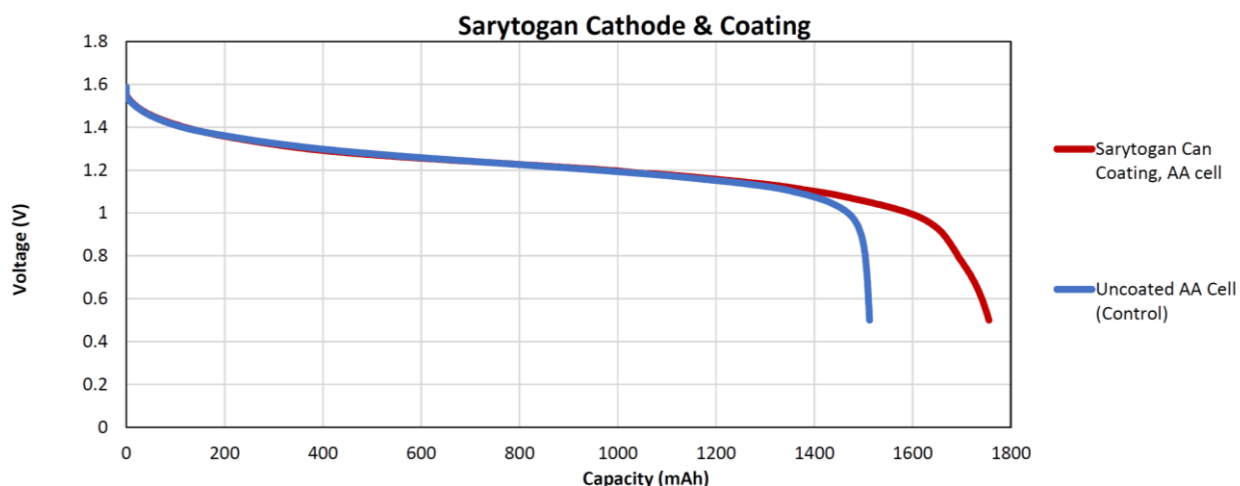


Figure 3 - Discharge curves for AA Alkaline Batteries with and without Sarytogan UHPF additives.

Lithium CFx Battery

Li/CFx Batteries are primary (non-rechargeable) batteries made with a lithium metal anode and a cathode that is a blend of carbon and fluoride at variable ratios (x). The Li/CFx batteries have much higher specific discharge capacity compared to lithium-iron batteries, high energy density (light weight), long storage life, wide operating temperature range and are very rugged and reliable. They are therefore favoured in applications where charging infrastructure is not available, for example implantable medical devices, aviation, and military applications (Figure 4).

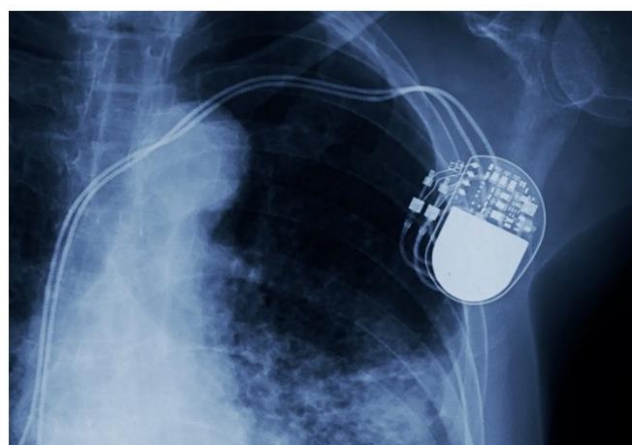


Figure 4 - Example applications of Li/CFx batteries.

Sarytogan UHPF was used in the manufacture of five Li/CFx cells. Two cells were made using the Sarytogan UHPF grading 99.998% C (refer ASX Announcement 7 December 2023) and three using Sarytogan UHPF grading 99.9992% C (refer ASX Announcement 5 March 2024). Both grades produced higher voltage than a control Li/CFx cell made with existing commercial graphite (Figure 5). The results were sensitive to purity with the higher purity Sarytogan UHPF performing better, especially during the initial discharge. This initial discharge is a particularly important performance metric; consider the launch of drones for example.

Furthermore, the results were highly repeatable as shown by the coincident curves from different cells of the same graphite grade (Figure 5).

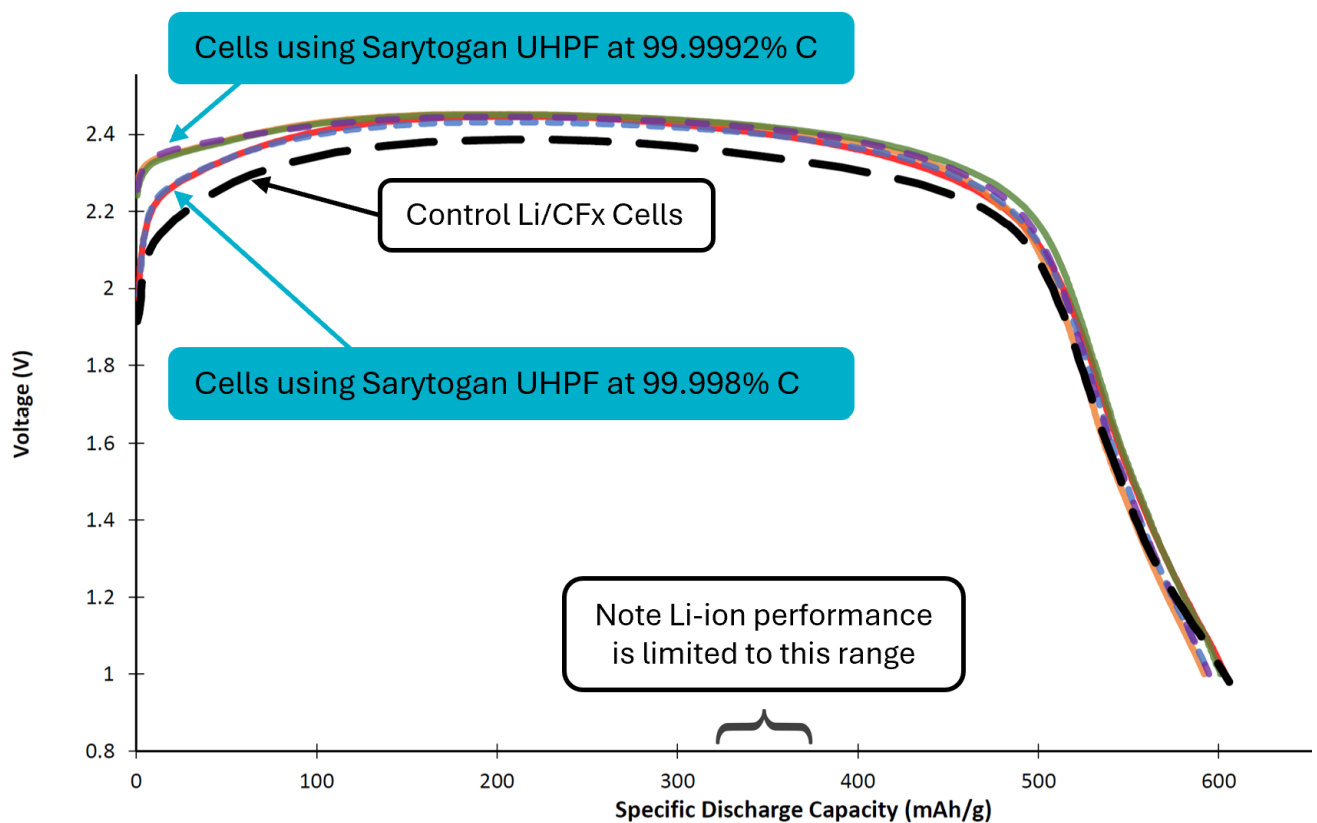


Figure 5 - Discharge curves for Sarytogan Li/CFx batteries.

Next Steps

The USPG lithium-ion cell performance (Refer ASX Announcement 8 February 2024) has continued to cycle through repeated charges and discharges to measure long-term performance. Results after 100 cycles will enable comparison with other existing graphite products. These long-term results will be available in a few weeks.

Coated Spherical Purified Graphite (CSPG) is expected to provide even higher performance in the lithium-ion anode. CSPG has been manufactured by coating Sarytogan USPG with carbon. Battery testing of a coin cell with a Sarytogan CSPG anode will shortly commence.

These tests are all important inputs into the Pre-Feasibility Study which is on-track to be completed in Q3 this year.

This announcement is authorised by:

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About Sarytogan

The Sarytogan Graphite Deposit is in the Karaganda region of Central Kazakhstan. It is 190km by highway from the industrial city of Karaganda, the 4th largest city in Kazakhstan (Figure 6).



Figure 6 - Sarytogan Graphite Deposit location.

The Sarytogan Graphite Deposit was first explored during the Soviet era in the 1980s with sampling by trenching and diamond drilling. Sarytogan's 100% owned subsidiary Ushtogan LLP resumed exploration in 2018. An Indicated and Inferred Mineral Resource has recently been estimated for the project by AMC Consultants totalling **229Mt @ 28.9% TGC** (Table 1), refer ASX Announcement 27 March 2023). Sarytogan has upgraded the mineralisation to **99.87%** purity by chemical purification (refer ASX Announcement 6 December 2022) and to **99.998%** purity by thermal purification, without any chemical pre-treatment (refer ASX Announcement 7 December 2023). Furthermore, spheres of graphite have been made at a high yield (refer ASX Announcement 19 December 2023) and performance lithium-ion batteries has been demonstrated (refer ASX Announcement 8 February 2024). A Pre-Feasibility Study as part of its strategy to supply high-quality anode pre-cursor material for the rapidly growing electric vehicle battery market is well advanced and scheduled for completion in Q3 2024.

Table 1 - Sarytogan Graphite Deposit Mineral Resource (> 15% TGC).

Zone	Classification (JORC Code)	In-Situ Tonnage (Mt)	Total Graphitic Carbon (TGC %)	Contained Graphite (Mt)
North	Indicated	87	29.1	25
	Inferred	81	29.6	24
	Total	168	29.3	49
Central	Indicated	39	28.1	11
	Inferred	21	26.9	6
	Total	60	27.7	17
Total	Indicated	126	28.8	36
	Inferred	103	29.1	30
	Total	229	28.9	66

Compliance Statement

The information in this report that relates to other Exploration Results is cross referenced to the relevant announcements in the text. These reports are available at www.asx.com.au. The information in this report that relates to Sarytogan Mineral Resources was first reported in ASX announcement dated 27 March 2023.

The Company confirms that it is not aware of any new information or data that materially affects the information included in relevant market announcements and, in the case of estimates of Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Persons' findings are presented have not been materially modified from the original market announcements.