

Leclanché achieves significant breakthrough in safety of its lithium-ion battery technology with no compromise to cell performance

- *Company achieves close to 80% reduction of risk of fire with no impact on cell performance*
- *Independent nail penetration tests confirm significantly lowered risk of thermal events with fire*
- *Non-flammable electrolyte additive provides enhanced cell safety option for rail, truck and bus markets*

YVERDON-LES-BAINS, Switzerland and ANDERSON, Indiana, 28th June 2022 – [Leclanché](#) (SIX: LECN) has achieved a significant breakthrough in the safety of its lithium-ion batteries without compromising cell performance.

By adding a special fire-retardant additive to its electrolyte formula composition, Leclanché has lowered the risk of a thermal event by close to 80%. The achievement has been validated by Intertek Germany, a renowned third-party testing lab which conducted a series of industry standard nail penetration tests on Leclanché's 60Ah cell. Despite the test cells being punctured with the resulting internal short circuit, the cells exhibited a far lower risk of fire than the same cells without the flame retardant additives.

Non-flammable lithium-ion cells have major implications to users in the railroad, truck and bus markets, which are accelerating their investment in hybrid and all-electric powered fleets and who are concerned about the risk of fire with passengers aboard. Lithium-ion battery recalls are an expensive problem, let alone the disruption it causes to operations. Leclanché is one of the world's leading energy storage solutions companies.

“While the entire battery industry continues to place considerable R&D resources into the development of solid-state batteries, there’s a critical need to enhance the safety of today’s high energy density lithium-ion cell technology. Most efforts, until now, adversely impact the performance or longevity of cells. Leclanché has been able to develop a high performance and high energy density lithium-ion cell exhibiting high safety characteristics without any negative impact on performance or longevity. As technological advancements continue to be developed, this is a crucial improvement in state of the art cell technology, that does not require breakthrough technology that could still be several years away from commercial availability” **said Pierre Blanc, chief technology officer, Leclanché.**



Non-flammable Electrolytes: The Outgrowth of Leclanché's Water-based Manufacturing Process

Leclanché battery cells are manufactured by Leclanché in its production facility located in Willstätt, Germany. The cells are made using the Company's proprietary production process. Electrodes are manufactured in a water-based process that has been validated in commercial production over the last 10 years – rather than by using organic solvents such as NMP – resulting in a significantly reduced environmental impact and a lower carbon footprint. Leclanché's electrodes produced with the water-based manufacturing steps, show a high stability towards the flame retardant additives contained in the new electrolyte, resulting in the maintenance of cell performance.

According to Anil Srivastava, CEO, Leclanché, "Our breakthrough should encourage manufacturers waiting on the side-lines for next generation solid-state batteries to move forward with their advanced fleet vehicle designs today – safe lithium-ion batteries have arrived and Leclanché has them."

The company's new non-flammable cells will be available for production beginning in the first quarter of 2023. For more information, contact to info@leclanche.com or visit www.leclanche.com.

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About Leclanché

Headquartered in Switzerland, Leclanché SA is a leading global provider of high-quality energy storage solutions designed to accelerate our progress towards a clean energy future. Leclanché's history and heritage is rooted in over 100 years of battery and energy storage innovation. This coupled with the Company's culture of German engineering and Swiss precision and quality, continues to make Leclanché the partner of choice for both disruptors, established companies and governments who are pioneering positive changes in how energy is produced, distributed and consumed around the world. The energy transition is being driven primarily by changes in the management of our electricity networks and the electrification of transport, and these two end markets form the backbone of our strategy and business model. Leclanché is at the heart of the convergence of the electrification of transport and the changes in the distribution network. Leclanché is organised in three business units: energy storage solutions, e-Mobility solutions and specialty battery systems. Leclanché is listed on the Swiss Stock Exchange (SIX: LECN).

SIX Swiss Exchange: ticker symbol LECN | ISIN CH 011 030 311 9

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