

Lithium-Ion Vs Lead Acid Batteries

Just like the iPhone, Lithium-ion (Li-Ion) batteries are all the rage! The Lithium-ion batteries' tolerance to deep discharging, long cycle life and ability to 'ramp up' to provide large volumes of power quickly have made them the battery of choice for electric vehicles (EVs) and a multitude of other applications. Lithium-ion phosphate (LiFePO₄) is the variety of lithium-ion battery that has the broadest appeal thanks to its favourable specification profile, relative safety and affordability.

Lead acid batteries, on the other hand, are often seen as the ugly step-sister to the Li-Ions however not justifiably so! Lead acid batteries have been around for decades. They are commonplace enough that they receive virtually no media attention as being a viable option for home energy storage. That's despite competitive pricing, greater safety, easy recyclability and being well proven and understood by the industry. It's also worth noting that lead acid batteries do not have the same sort of freight and safety restrictions that come with Li-Ion batteries. Lead acid are simply 'easier' to deal with.

Enter the Ecoult Ultra Battery! A fusion of the two technologies.

What makes the Ecoult so "Ultra"?

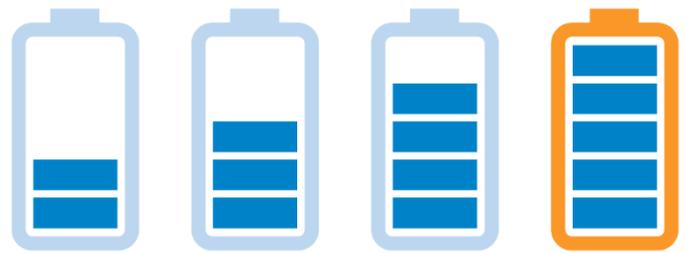
Firstly – and perhaps most importantly – **the UltraBattery has a longer operational life even with deeper regular discharging** than conventional lead acid batteries. The UltraBattery boasts 60% usable energy cycling compared to 30-50% for most lead acid batteries. That means more of the energy stored within the battery is actually accessible for regular use – and for a much longer period of time. *All this at a competitive price point!*

With an UltraBattery system, **it is possible to replace an individual cell without affecting the other cells.** That's a major advancement in battery technology. With traditional lead acid battery systems, if one cell fails, it is recommended that all cells be replaced. You could potentially be throwing away 90% of your cells for the sake of 1 failed cell. The long term cost savings in battery replacement with the UltraBattery are huge.

The UltraBattery has a **fantastic user interface that monitors the system through the internet.** This allows the user to identify any issues early to avoid premature failure.

The **UltraBattery is capable of impressive feats of instantaneous power output**, when required. Conventional lead acid batteries notoriously struggle to satisfy high power demand (e.g. multiple devices operating at once) even if they have enough energy stored within them to meet it. To draw a plumbing analogy, the UltraBattery has a significantly larger 'spout' for delivering and receiving energy than do conventional lead acid batteries. Thanks to its hybrid nature, the UltraBattery can also be occasionally discharged 100% when required to support critical events. So, on top of performing its normal daily application, the UltraBattery can supply even more energy when it is needed most such as in the event of a grid blackout.

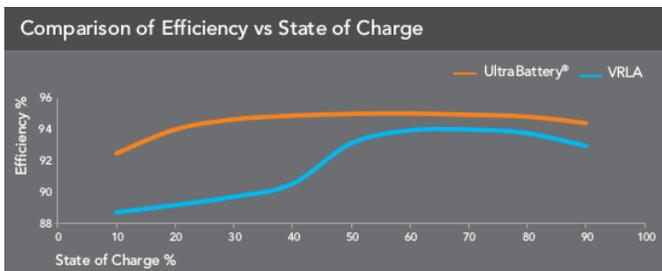




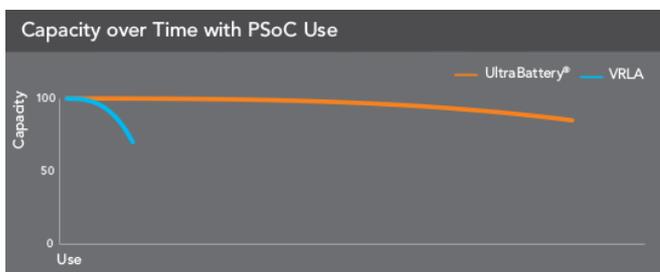
The **UltraBattery** is overall significantly more tolerant to general neglect. The features of the UltraBattery flies in the face of the traditional belief that lead acid batteries are fragile and must be treated with kid gloves to extend their lifespan. The UltraBattery is clearly much more robust than flooded and VRLA batteries in demanding environments.

The **UltraBattery** is more than capable of operating at partial states of charge (PSOC). Flooded lead acid and Valve Release Lead Acid (VRLA) batteries function best under a clean charge/discharge regime: Withdraw energy steadily, then charge back up steadily. Partially discharging then recharging traditional lead acid batteries repeatedly greatly reduces the longevity and overall efficiency; this is not an issue with most of their lithium-ion counterparts.

The **UltraBattery** has been designed in Australia in conjunction with the CSIRO and is manufactured in the USA.



The UltraBattery stores and discharges energy significantly more efficiently than a conventional Valve-Regulated Lead Acid (VRLA) battery – especially at partial states of charge.



With traditional Lead Acid batteries, the detrimental impact of PSOC use over time is huge. This is not a problem with the UltraBattery.

