

# Ask Mike

About all things emergency lighting



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## What are the best lithium batteries for emergency lighting?

Not all Lithium Ion batteries are the same or perform in the same way as different applications prioritise different performance characteristics. For emergency lighting, the three main priorities are Safety, Performance and Environmental Impact.

Here's four widely used but different Lithium Ion technologies:

- Lithium Cobalt Oxide (LCO): Very high energy density makes it small and light for mobile phones, laptops and digital cameras. The downside is poor thermal stability and can vent with flame under abuse, short-circuit or thermal runaway. Less harmful to the environment than Nickel Cadmium but contains toxic heavy metals.

- Lithium Nickel Manganese Cobalt Oxide (NMC): A newer technology variant of LCO with high energy density but improved thermal stability. Will vent with flame but at a higher temperature trigger point. Rapidly gaining uptake in electric vehicles and other larger format applications. Also cheap but contains toxic heavy metals.

-Lithium Iron Phosphate (LFP): Slightly lower energy density but significantly higher thermal stability and will not vent with flame. Lower capacity loss over time has made it popular for large format energy storage applications, electric vehicles and portable power tools. No toxic heavy metals.



- Lithium Nanophosphate (LNP): A variant on LFP with even better thermal stability and lower capacity loss over time at full state of charge at elevated temperatures. Used in large format energy storage, electric vehicles and high-end power tools. No toxic heavy metals or carcinogens.

There is significant variance in the manufacturing quality of lithium batteries, so choose products from a reputable supplier with a track record for quality and the data to back it up. In the real world, L10 products have delivered in the field since their introduction in 2012. The inherent safety and performance over time at full state of charge make LFP and LNP the superior choice for our products,

and with the lowest environmental impact.

At Clevertronics we select the highest quality LFP batteries for our LP range, and our L10 Optimum range leads the market using Lithium Nanophosphate technology (LNP).