



WHAT DO CE AND UL STANDARDS MEAN FOR HAWKER® LITHIUM-ION BATTERIES?

At HAWKER®, we have made the investment in the area of research and development for our products to reassure our customers that not only are they receiving a product that measures up to its full power potential, but also is high-quality and safe. We understand the importance of independent review from industry leaders such as Underwriters Laboratories (UL) and develop our products under these standards.

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In all industries, there are certain regulatory, scientific leaders who establish standards and benchmarks for products to promote safety, sustainability, quality, mitigate risks, and achieve regulatory compliance. These standards offer consumers trust that the product they are purchasing is not only safe, but reaffirms it has undergone rigorous research, development, and testing.

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While most people would recognize a regulatory organizations logo such as UL or CE, not all people realize that there are different standards given to products based on the intended use, industry, and more. Let's look at the HAWKER FLEX® Li3 Lithium-Ion battery for example.

STANDARDS & TESTING

The HAWKER FLEX® Li3 Lithium-Ion battery was, and is routinely, rigorously tested for maximum performance, longevity, quality, and safety. But simply saying that it is UL 2580 listed can't convey the full picture.

UL 2580 LISTING

You can find HAWKER® clients just about everywhere. It's important to us that our batteries perform wherever they're being used. But they also need to be safe and reliable to protect both workers and equipment.

To provide customers with total peace-of-mind, we developed the HAWKER FLEX® Li3 Lithium-Ion battery to meet the standards of Underwriter Laboratories' UL 2580 listing, ensuring not only maximum performance, but safety and quality as well.

Receiving this listing is no small feat. A UL 2580 listing covers electrical energy storage assemblies such as battery packs and combination battery pack-electrochemical capacitor assemblies and the subassembly/modules that make up these assemblies for use in electric-powered vehicles as defined in this standard. This standard evaluates the electrical energy storage assembly's ability to safely withstand simulated abuse conditions and prevents any exposure of persons to hazards as a result of the abuse. This standard evaluates the electric energy storage assembly and modules based upon the manufacturer's specified charge and discharge parameters at specified temperatures.



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The HAWKER FLEX® Li3 forklift battery is:

- Resistant to weather elements
- Resistant to physical strain
- Capable of performance in abnormal temperatures
- Capable of performance under abnormal electrical conditions

EN 1175:2020 - SAFETY OF INDUSTRIAL TRUCKS

In addition to our product, HAWKER® wanted to provide confidence to our customers that their material handling equipment was also safe when using the HAWKER FLEX® Li3 battery. We applied for and received EN1175:2020 which deals with safety

requirements for all electrical and electronic components of industrial trucks, including electrically actuated hydraulic and pneumatic valves and specifies performance levels required for safety functions realized by safety-related parts of control systems.

ISO 26262 Certification – Battery Management System (BMS)

To ensure the safety of the HAWKER FLEX® Li3 battery, we developed a Battery Management System (BMS) that received the Automotive Functional Safety Standard ISO 26262:2011 certification and Automotive Safety Integrity Level C (ASIL C), awarded by the industry-leading International Organization for Standardization. Specific to electrical components, this certification probes for possible hazards in the event of a malfunction.

After being battered, broken, and knocked about, the HAWKER FLEX® Li3 lithium-ion battery made the grade, demonstrating the utmost safety — no matter the conditions.

CE Conformity (Communauté Européenne/European Commission)

Thought leaders throughout the supply chain know that there's a big difference between testing and compliance. Testing and compliance feed into and enhance each other, but the burden of responsibility differs between forms of due diligence.

At HAWKER®, we can confidently say we've designed our batteries, smart chargers, and data management solutions for use on a global scale. That means meeting all regulatory requirements for our partners in the European zone and beyond.

We've taken every possible step to align our batteries with industry standards for safe use and sale throughout Europe. As such, our HAWKER FLEX® Li3 lithium-ion forklift battery proudly bears the CE mark.

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To earn this mark, a manufacturer must perform abundant in-house testing and produce detailed technical documentation outlining precisely how a lithium-ion battery adheres to regulations. Everything from circuit diagrams to risk analyses is included alongside test reports and a top-to-bottom explanation of the manufacturing process.

At the end of the day, the CE mark establishes a product as “safe for sale and use” throughout Europe.

Tested & Compliant Across Nations: The HAWKER FLEX® Li3 Lithium-Ion Battery

As a global provider of motive power solutions, HAWKER® welcomes the most brutal and comprehensive testing that national and international bodies can provide. The more our batteries stand up to abuse, the more our customers can count on them to work safely in every environment; under the harshest of circumstances.

Ultimately, these standards, tests, and regulations empower us to deliver a better product, powering industrial trucks, forklifts, and the supply chain itself around the modern world.

Learn more about HAWKER® standards, tests, & regulations!

HAWKER® engineers pursue the highest standards across our industry. To learn more about what makes the HAWKER FLEX® Li3 lithium-ion battery a leading choice, contact us today. ●

**Contact your local HAWKER®
Representative**

Visit us online:
www.hawkerpowersource.com

or Dial:
1-877-7HAWKER
(U.S. & Canada Only)



About Hawker Powersource, Inc.

HAWKER® is the largest brand of industrial lead-acid batteries in the world, offering manufacturing, assembly, and sales capabilities. At HAWKER®, we craft custom hybrid motive power solutions for Class I, II, and III trucks to power customer's unique daily operations. We offer the broadest product range in the industry – from traditional flooded lead acid, to thin plate pure lead (TPPL) and lithium batteries, high-frequency modular chargers, and data management tools and accessories – and provide experienced teams to turn those solutions into real cost savings for each unique operation. Our recommendations are data-based, our products are best in class, and our employees are dedicated to helping our customers improve their bottom line.

As a single-source supplier, HAWKER® can assess and design a completely custom motive power solution to empower and enhance each customer's operation and optimize productivity, improve efficiency, and minimize costs. HAWKER® is proactively adapting to our customer's ever-changing needs by innovating and finding solutions to that address their challenges via our Research and Development (R&D) engineers. Our robust portfolio of advanced technology solutions coupled with engineering, design, installation, and maintenance services makes HAWKER® the clear choice for all your motive power needs. More information regarding HAWKER® can be found at www.hawkerpowersource.com.

Caution Concerning Forward-Looking Statements

HAWKER® is making this statement in order to satisfy the "Safe Harbor" provision contained in the Private Securities Litigation Reform Act of 1995. Any of the statements contained in this publication that are not statements of historical fact may include forward-looking statements that involve a number of risks and uncertainties. A forward-looking statement predicts, projects, or uses future events as expectations or possibilities. Forward-looking statements may be based on expectations concerning future events and are subject to risks and uncertainties relating to operations and the economic environment, all of which are difficult to predict and many of which are beyond our control. For a discussion of such risks and uncertainties that could cause actual results to differ materially from those matters expressed in or implied by forward-looking statements, please see our risk factors as disclosed in the "Risk Factors" section of our annual report on Form 10-K for the most recently ended fiscal year. The statements in this publication are made as of the date of publication, even if subsequently made available by HAWKER® on its website or otherwise. HAWKER® does not undertake any obligation to update or revise these statements to reflect events or circumstances occurring after the date of this publication.

PO BOX 808 | OOLTEWAH, TN | 37363 USA
www.hawkerpowersource.com | 1-877-7HAWKER (U.S. & Canada Only)

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