



Technology

Markets

Products

The Company

Leclanché was founded in 1909 in Yverdon-les-Bains. Through the integration of a spin-off from the Fraunhofer-Gesellschaft in 2006 the company developed from being a traditional battery manufacturer to becoming a leading developer and manufacturer of lithium ion batteries in Europe.

The company's headquarters are in Yverdon-les-Bains (Switzerland) and has factories located in Willstätt and Itzehohe (Germany). Leclanché is ISO9001 certified and is listed on the SIX Swiss Exchange (LECN).

Leclanché is a leading manufacturer in Europe of large-size lithium ion batteries. Through a unique, licensed separator technology, the core element of lithium ion batteries, Leclanché is capable of manufacturing cells with above-average safety features in an automated production process.

Increased power storage capacities for a changing world

The company's core markets are industries that make the highest demands on energy storage systems, e.g. the aerospace industry, the defence sector and medical technology. Leclanché is consistently developing its business towards future markets for lithium ion batteries. They include electric vehicles, large hybrid diesel engines and energy storage systems that enable better utilisation of the power supply system.

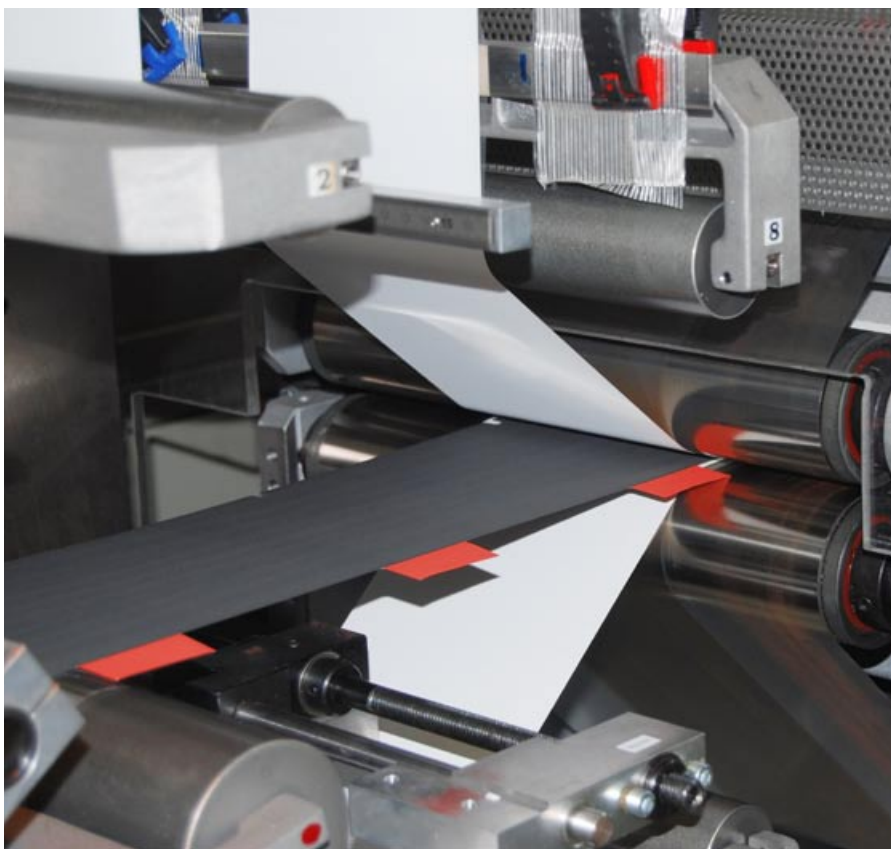
The increasing request for green power from renewable energy resources demands more storage capacities: the output of alternative energy sources like wind or solar generators is not continuous and power storage is required for grid stabilization.

Technology

Large capacity lithium ion

Leclanché's large capacity lithium-ion batteries incorporate the latest battery technologies for added safety and durability. This means that our batteries do not only offer the extremely high energy density associated with this type of battery, but will also perform reliably and over many years in demanding high power automotive, transport, solar and grid applications with thousands of charge cycles. The ingredients for this success are carefully selected active materials and the patented Leclanché Separator technology.

An added benefit is the Leclanché one stop production approach, which puts the entire production process ranging from raw materials, electrode and separator manufacturing through to cell assembly in the hands of the Leclanché energy experts. This enables us to develop and design custom engineered solutions that best fit your individual application requirements.



▲ Lamination process in the production of Leclanché lithium ion cell

Other battery technologies

Besides the large capacity lithium ion batteries that we produce ourselves, Leclanché offers a wide range of battery cells and solutions based on other technologies, such as:

Primary cells

- ▶ Alkaline
- ▶ Button cells
- ▶ Lithium

Secondary or rechargeable cells

- ▶ Ni-Cd
- ▶ Ni-MH
- ▶ Lithium

These cells are either embedded in a customized power solution tailored to your needs or can be purchased as cell only via our distribution.

Markets

► Automotive:



“Green traffic” with large capacity lithium ion batteries for automotive applications

Widespread use of electrified vehicles depends heavily upon the availability of large power batteries. Providing extremely power hungry applications like electric cars with safe, reliable green battery power from large capacity lithium-ion batteries is one of the core competencies of Leclanché.

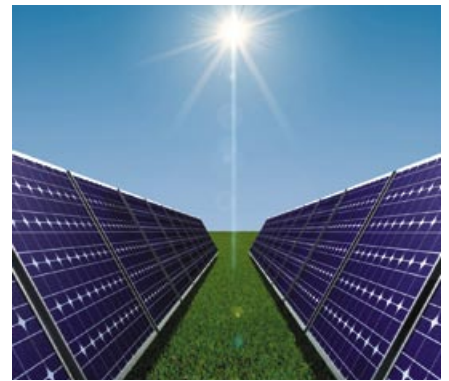
► Diesel Hybrid:



“Green traffic” with large capacity lithium ion batteries for diesel engines

In the face of dwindling fossil fuel resources fuel efficiency is becoming more and more important. Especially when it comes to Diesel engines, fuel efficiency can be considerably increased by using batteries to „recycle“ kinetic energies. Leclanché large capacity lithium-ion batteries for trains, trucks and other heavy duty transportation vehicles add green battery power to these applications.

► Smart Grid:



Grid stabilization with Leclanché large capacity lithium ion batteries

To manage rapid or unexpected fluctuations in electricity generation or demand utility and energy services providers today have to continually ramp up and ramp down their production. Leclanché large capacity lithium-ion batteries are high power storage solutions that make grid stabilization more resilient, efficient and economic.

► **Industrial:**



Leclanché batteries for industrial off-grid applications

Ensuring the ready availability of large amounts of electric power is a major challenge in many off-grid industrial applications. Heavy electric machinery to be operated at remote sites, mobile power tools, or large electric vehicles to be run over great distances – they all require large battery power storage capacities for reliable performance. Leclanché batteries provide power hungry off-grid industrial applications with reliable, user friendly battery power.

► **Defence:**



Leclanché batteries for mobile and portable defence applications

Leclanché has a long tradition in providing lightweight, heavy-duty and reliable off-grid power solutions for defence and government applications. Thanks to their extremely high energy density, their light weight and their flexibility Leclanché batteries can power a large range of mobile and portable defence and government equipment.

Products

High capacity lithium-ion battery products

Format A5			
160mm x 160mm	Thickness*		
Technology	12mm	9,5mm	0,8mm
Metal Oxide/ Graphite	Type 904823 3,7 V / 22 Ah		Type 904301 3,7 V / 1,1 Ah
Metal Oxide/ Titanate	Type 904920 2,3 V / 18 Ah	Type 904414 2,3 V / 14 Ah	Type 904401 2,3 V / 850 mAh
LiFePO4/ Graphite	Type 904615 3,3 V / 11 Ah		Type 904601 3,3 V / 450mAh
LiFePO4/ Titanate	Type 914713 1,8 V / 13 Ah		

Format RFID	
43mm x 56mm	Thickness*
Technology	0,8mm
Metal Oxide/ Graphite	Type 903301 3,7 V / 50 mAh
Metal Oxide/ Titanate	Type 903401 2,3V / 55 mAh
LiFePO4/ Graphite	Type 903601 3,3 V / 35 mAh

Format PDA			
57mm x 90mm	Thickness*		
Technology	4,5mm	3,5mm	0,8mm
Metal Oxide/ Graphite	Type 900324 3,7 V / 1,5 Ah		
Metal Oxide/ Titanate	Type 900325 2,3 V / 1,0 Ah		
LiFePO4/ Graphite		Type 900368 3,3 V / 670 mAh	Type 900361 3,3 V / 84 mAh
LiFePO4/ Titanate	Typ 900378 1,8 V / 800 mAh		

Leclanché large capacity lithium-ion batteries integrate the unique patented Leclanché Separator technology for maximum performance and safety.

Please refer to www.leclanche.com for further details and data sheets



▲ Block of an electric vehicle battery

*Dimension may have slight variation. Please verify details with Leclanché when ordering.

Customized power solutions

Building on 100 years in the development, production and application of batteries Leclanché is a leading provider of custom battery solutions.

At Leclanché we know that it is not enough to build excellent batteries. They also have to perform perfectly in the individual application environments. This is why battery management at Leclanché is a dedicated business unit. Our battery management electronics, electrochemistry and mechanical experts will ensure that the battery solution they custom design for you will meet your application's individual requirements.

Leclanché battery management includes electronics, mechanics, electrochemistry, assembly, testing and project management.

Leclanché offers customized power solutions tailored to your needs or OEM products based on the following technologies

- ▶ Ni-Cd
- ▶ Ni-MH
- ▶ Lithium rechargeable
- ▶ Leclanché large capacity lithium-ion batteries
- ▶ Lithium primary

Distribution products

Leclanché offers a wide range of established battery products:

Alkaline Batteries

- ▶ Alkaline „Professional“
Standard alkaline primary batteries for general use
- ▶ Alkaline „Industrial“
Standard alkaline primary batteries for industrial use
- ▶ Alkaline „High Tech“
High end alkaline primary batteries for high drain applications

Accessories

Leclanché minilights, LED lamps, flashlights, high-beam lamps, PELI lamps, MAG-LITE and head lamps.

Button Cells

Battery series with silver-zinc cells for clock applications.

Primary Lithium Batteries

Lithium / Manganese dioxide (Li-MnO₂), Lithium / Sulfur dioxide (Li-SO₂) and Lithium / Thionylchloride (Li-SOCl₂).

Torch Batteries

Batteries for lightning purposes.

Please refer to www.leclanche.com for further details and data sheets



▲ Series Alkaline "Industrial"



▲ Torch Batteries

Contact details

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