

Soft – Critical power for medical applications

A wide range of specialized battery solutions for medical devices



saft

Soft – Reliability and performance when it is needed most



Doctors, nurses and rescue squad technicians should not need to worry whether critical medical equipment will start up and run properly. That is why Soft's battery solutions for medical applications are all made to meet the toughest standards of reliability, durability and efficiency.

With Soft battery systems, portable equipment, mobile workstations, patient-worn devices, respirators, ventilators, defibrillators and other medical devices will perform reliably and operate autonomously, even in the most demanding of environmental and usage conditions.

Highly specialized batteries for highly specialized devices

Each medical device or piece of equipment has a different purpose and therefore a different power or energy need. Soft can offer customized battery solutions complete with electronics and monitoring. If a standard solution is required, Soft's wide range of battery solutions is capable of meeting the demands of critical medical applications where a consumer battery simply cannot perform. Whether built upon primary lithium or rechargeable lithium technologies, Soft batteries for the medical sector are lightweight, cost effective, and extremely durable.

Applications Served by Soft Batteries

Emergency and critical care



- automated external defibrillators
- respiratory assistance devices
- infusion pumps

Patient Care



- medical stimulation,
- drug delivery services
- operating theater applications

Patient Monitoring



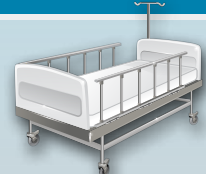
- medical carts
- remote monitoring equipment

Patient Diagnosis



- imaging applications
- point of care testing devices

Patient Mobility



- gurneys
- lifts
- hoists
- beds
- wheel chairs

Wide ranging products for diverse needs

Saft's product offering for the medical market is as diverse as the equipment it powers. From simple to complex, large to small, primary to rechargeable, Saft is able to offer a power or energy solution for practically any medical device.

Primary lithium range

- Three different chemistries: Li-SO₂, Li-SOCl₂, Li-MnO₂
- Benefits:
 - High and stable operating voltage
 - Wide operating range of temperatures : From -60°C to +85°C, depending on cells, current drain and environment conditions
 - High operating temperature (up to 150°C for Li-SOCl₂)
 - Long shelf life : capacity loss in storage at + 20°C below 1% to 3% per year
 - Extended operating life : Typically above 5 years
 - High energy densities: 3-10 times greater than the non-lithium systems



Lithium-ion range

- Small format and large format cells available, both cylindrical and prismatic
- Li-ion cells are integrated into modules or custom battery solutions complete with electronics and monitoring capability
- Benefits:
 - High operating voltage(4.2-2.5 V range)
 - High energy density (up to 385 Wh/l and 180 Wh/kg)
 - Weight saving solutions
 - Wide operating temperature range (-20°C tp +60°C for charge, -50°C to +60°C for discharge)
 - Unrivalled low temperature performance
 - Extended lifetime
 - Maintenance-free reliability
 - Compliance with battery safety standards; voluntary compliance with ROHS
 - Low life cycle cost



Lithium-iron phosphate range

Saft's Super-Phosphate® products combine all the benefits of our standard NCA Li-ion chemistry with additional safety features and slightly lower voltage.

- Excellent energy density and specific energy combined with proven long life
- Electrochemistry stable under most abuse conditions
- Non-toxic, extremely stable cathode material
- Hermetically sealed
- Maintenance free reliability
- Operates in any orientation
- No memory effect
- Wide operating temperature range
- Easy integration into compact and light solutions
- Very long run time
- Excellent low temperature performance
- Very long cycle life (over 5,000 cycles)



Testimonials

"Since the mid-1990s, Cardiac Science and Saft have partnered on developing battery packs comprised of LO 26 SHX primary lithium sulfur-dioxide cells for the Powerheart® AEDs. We chose Saft because of its reputation for manufacturing high quality, specialized battery systems for professional applications. Initially, Saft supplied the battery components, which we integrated into complete systems. As we grew more confident in Saft's expertise, we began relying on them to provide turnkey battery packs that combine the cells with our patented AED battery management technologies, reducing costs and increasing quality and performance."



"Our AEDs are stored in vehicle or used at fire scenes where temperature conditions are not ideal. Since the battery provides critical power to the device, we need to have every assurance that it will work. Known for its long shelf life, low temperature performance and high pulse capability, the Saft Li-SO₂ is still the ideal solution."

Mike Fry
Business Unit Manager – Resuscitation
Cardiac Science Corporation

"LifeWatch uses Saft's primary lithium thionyl chloride LS 14500 cells in our LifeStar Ambulatory Cardiac Telemetry (ACT) ECG Monitoring device. This small, lightweight LifeStar™ ACT Sensor and electrodes are worn on a patient's chest to record the heart's rhythm. Each heartbeat is transmitted wirelessly to the ACT Cellular Phone Monitor where it is analyzed. If an arrhythmia is detected, the Cellular Phone Monitor automatically sends information to one of three LifeWatch Monitoring Centers for review and MD notification, if required. With such a critical heart monitoring device, we simply can not leave it to chance that the battery will work. Quality and reliability are crucial, which is why we selected Saft batteries. With its wide operating temperature range, low self-discharge rate, and easy integration into compact systems, we are confident in our choice of this technology. We trust our products will perform their monitoring functions while running on Saft batteries."



Erik Leverenz
Executive Director of Logistics,
Distribution and Purchasing
LifeWatch Services, Inc. - A LifeWatch AG Company

Saft is committed to the highest standards of environmental stewardship

As part of its environmental commitment, Saft gives priority to recycled raw materials over virgin raw materials, reduces its plants' air and water releases year after year, minimizes water usage, reduces fossil energy consumption and associated CO2 emissions, and ensures that its customers have recycling solutions for their spent batteries.

Regarding industrial batteries, Saft has had partnerships for many years with collection companies in most EU countries, in North America and in other countries. This collection network receives and dispatches our customers' batteries at the end of their lives to fully approved recycling facilities, in compliance with the laws governing trans-boundary waste shipments.

Saft has selected a recycling process for industrial lithium-ion cells with very high recycling efficiency. A list of our current collection points is available on our web site. In other countries, Saft assists users of its batteries in finding environmentally sound recycling solutions. Please contact your sales representative for further information.



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