

Ni-Cd Industrial Batteries

Reliability around the world



July 2004



Saft Ni-Cd

Ready and reliable stand-by power

Efficient industry needs reliable power. Demands in competitive worldwide industry mean that reliable stand-by power is a vital component. It can be difficult to find, unless you turn to Saft nickel-cadmium batteries.



Offshore

Renewable energy

Electricity

Road and rail infrastructure

Hospitals

Water, oil and gas

Utilities

Process industries

General industry

IT infrastructure

Aviation infrastructure

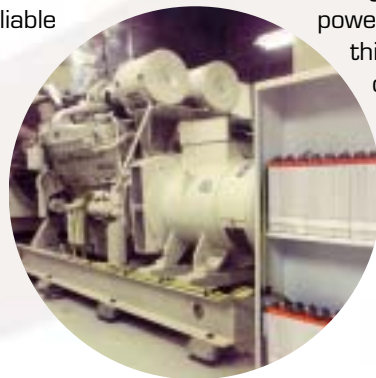
Marine

Telecommunication networks

Defence

Turn to Saft for peace of mind

Mains power is safe, but not failsafe. From familiar situations, critical emergencies develop with unexpected and serious consequences for people, finance and the environment. These challenges are met by Saft nickel-cadmium batteries, guaranteeing reliable power in the world's most extreme conditions.



Stay with Saft for service

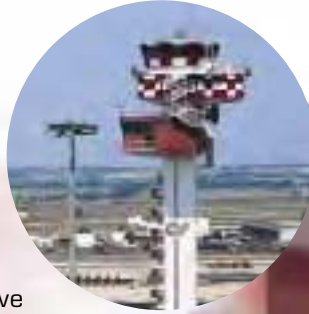
Saft's expertise extends far beyond supply of equipment, from analysing your requirements through comprehensive after sales support. Our established market position results from many years' success in resolving customers' industrial power back-up needs, and this means you can depend upon us in the future to provide the best service for you and your application.



A global capability meeting international standards

For nearly a century Saft has been at the forefront of battery technology development and today leads the world in design, specification, manufacture and service of stand-by nickel-cadmium battery systems. Manufacturing plants throughout the world serve industry and commerce across five continents.

In addition, Saft's international network assures professional advice, support and service throughout the world.

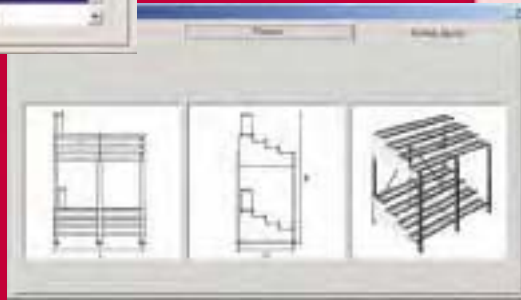


Battery solutions

As requirements vary enormously, our sales engineers work closely with you and your design team from the start, defining the optimum battery solution.

We are part of your product from its conception, considering all aspects of engineering design, sizing, testing, life cycle costing, and implementation of quality standards.

Saft manufacture batteries with strict attention to prevailing ISO 9001, ISO 14001 and other international criteria.



Battery comparison results



Analysis of customer needs

ABB · Agip · Brazil Hydro Power Station · Carnival Cruiser · China Light and Power · EDF Nuclear Power · Elf Angola · Esso · Exxon · Finnish Coastguard · Hong Kong Metro · Jordan Electricity Authority · Korea General Chemical Company · Kuwait Electricity Board · Mobil · Qatar Liquefied Gas · Shell · Shikoku Electric · Taiwan National Power · Telefonica · Total · Sydney Opera House

Guaranteed performance in harsh conditions



Why choose nickel cadmium?

World industry uses nickel-cadmium batteries to assure smooth, safe and efficient running of critical applications, from small local emergency lighting duties to the most powerful battery in the world, situated in Alaska.

Nickel-cadmium batteries combine qualities of exceptional electrical performance with very strong physical construction.

- Long lifetime
- Low life cycle cost
- Minimum maintenance
- Physical and electrical abuse resistant
- No sudden death
- Wide operating temperature range

Ni-Cd is different

Lead components react with acid electrolyte causing lead acid batteries to deteriorate rapidly. This degradation is quicker in high temperatures, with increased charge/discharge cycles, and in difficult operating conditions.

Ni-Cd's robust steel structure and simple electrochemistry bring alkaline electrolyte into free circulation around nickel-cadmium plates. **No structural degradation can occur**, so a trouble-free, long life and low maintenance solution is provided.



A low life cycle cost battery solution

Nickel-cadmium technology gives a predictable life cycle cost because it combines physical strength and excellent electrical performance giving total reliability and long life

Cost-efficient low maintenance

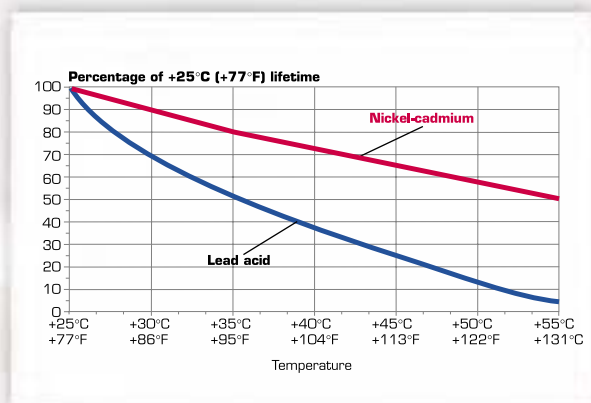
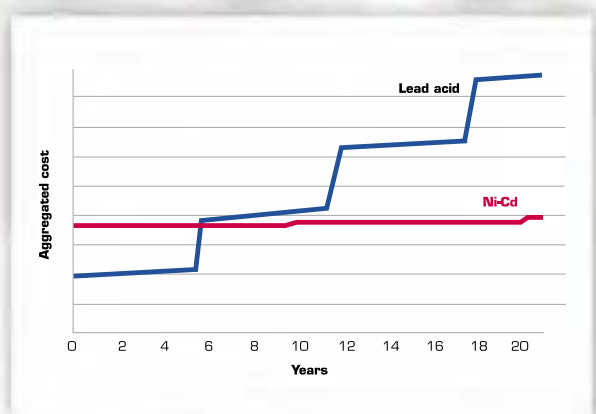
Ownership costs of a battery include not only the initial investment in acquisition and installation, but also a provision to cover day-to-day operation and maintenance.

In the case of lead acid batteries, this can also include frequent replacement and all the costs associated with an unexpected battery failure.

With its high reliability and long life, the Ni-Cd battery can repay its initial investment within just 5 years, whilst operating faithfully for up to 20+ years.



By providing a choice of low, medium and high rate characteristics, plate technologies and cell configuration, Saft's broad range permits the optimisation of the battery for any application.



Comprehensive range the optimum battery

Battery sizing made easy

Ni-Cd ranges offer many permutations to create the optimum battery for your application. Saft's battery sizing and configuration software has been developed in line with IEEE recommendations.

Load-voltage window, charge mode, load profile, and ambient temperature data is input to enable easy battery selection.

A package containing sizing software and product documentation is available on request from

www.saftbatteries.com

or by contacting your nearest Saft Sales office.



Pocket plate technology

The original nickel-cadmium technology has proven itself in its field over nearly 100 years.

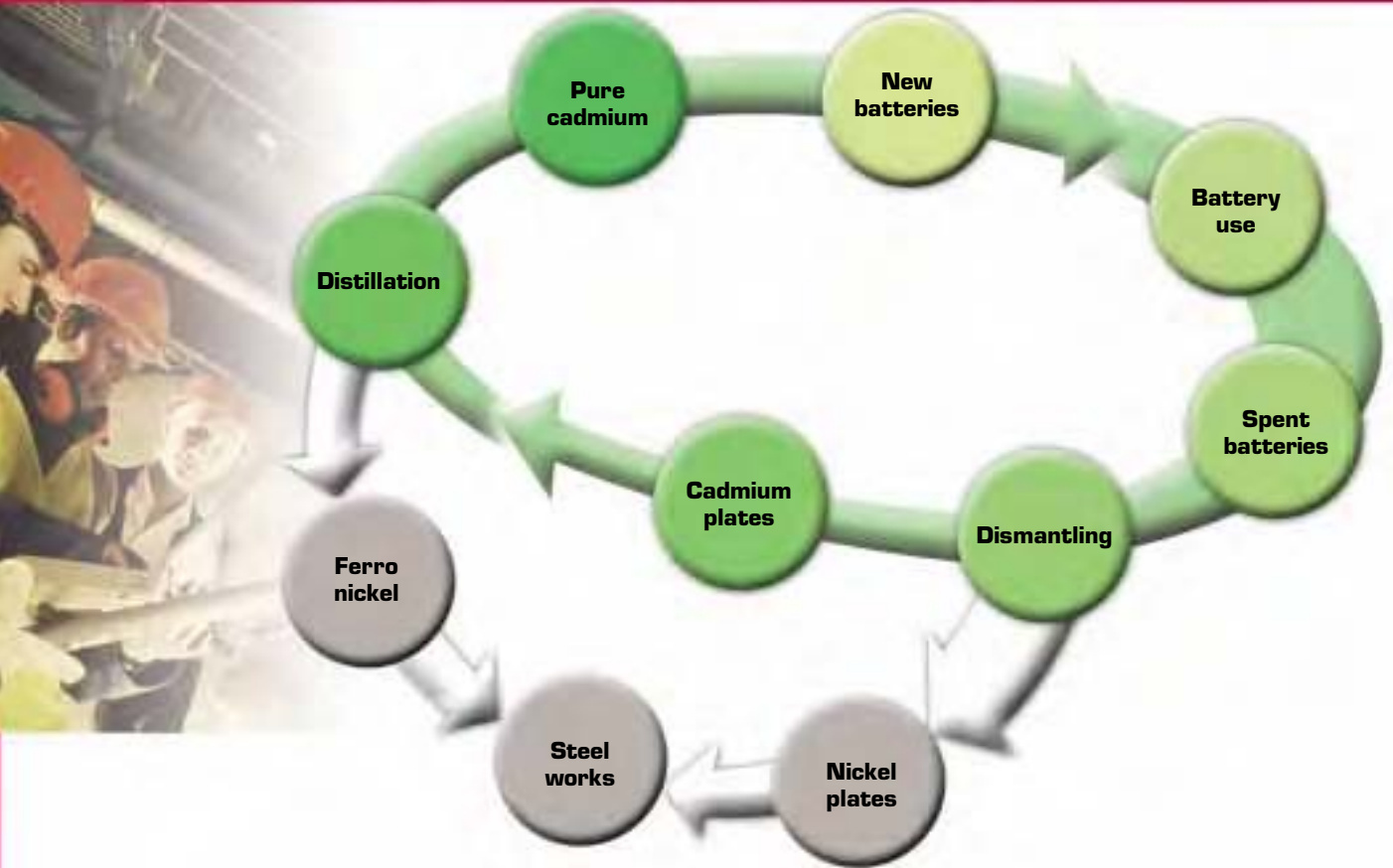
SBH, SBM, SBL provide up to 20+ years' reliable service. Unique electrochemistry makes these batteries ideal for demanding heavy industrial duties.

Ultima SLM and Ultima.plus give up to 20 years without water replenishment, providing complete peace of mind for critical industrial and telecommunications applications.

SPL is designed for outdoor cabinets in signalling applications.

Sunica.plus resists tough conditions in remote locations and is designed for un-manned renewable energy applications.

Ni-Cd technology for the future



Sintered/pbe plate technology

Sintered/plastic bonded electrodes are lighter and thinner than other Ni-Cd technologies, providing a high energy density and very low maintenance.

SPH is a high performance product with up to 10 years without water replenishment offering consistent electrical behaviour over an exceptionally long life. It is typically specified for engine starting and emergency back-up for UPS systems.

NCX compact blocks are ideally suited for outside telecom cabinets offering low maintenance despite high ambient temperatures.

Protecting the environment – manufacturing to recycling

Saft takes seriously its responsibility to safeguard the environment, from manufacturing to collection and recycling. We operate a network of designated collection points around the world and have in-house recycling facilities.

Ni-Cd batteries are pro-actively collected at end-of-life. Over many years, Saft has become expert in recycling, a service which is offered free of charge to clients. The simple and unique nature of components ensures maximum utilisation of materials.

Cutting edge technologies

Saft are strategically planning developments in new technologies such as Li-ion. These batteries will continue to drive down installation and running costs, provide new solutions, increase customer choice, and further expand Saft's broad product portfolio.



Committed to a clean environment

Saft takes seriously its responsibility to safeguard the environment.

At several sites worldwide, more than 99% of metals contained in the battery are recycled. This process safeguards valuable natural resources and is a service to customers that Saft will continue to offer for future generations. To locate the nearest collection site, visit www.saftbatteries.com



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