Rechargeable lithium-ion battery
MP 176065 Integrat*ion*™



High performance
Medium Prismatic cell

Saft always supplies MP cells in assemblies or as customized battery system constructions

Benefits

- A broad operating temperature range
- Extended autonomy and life for mobile systems
- Recommended for ruggedized designs
- Easy integration into compact and light systems
- Used in potentially explosible atmospheres
- Reliability and peace of mind
- Aluminium casing
- Very high energy density *(375 Wh/l and 178 Wh/kg)*
- Unrivalled low temperature performance

Key features

- Excellent charge recovery after long storage, even at high temperature
- Maintenance-free
- Long cycle life *(over 70 % initial capacity after 600 cycles, C charge rate, C/2 rate 100 % DoD at 20°C)*
- Restricted for transport *(Class 9)*
- Compliant with IEC 61960 standard
- Underwriters Laboratories *(UL)* Component Recognition *(File Number MH 12609)*

Main applications

- Mobile asset tracking
- Rack-mount telecom batteries
- Small UPS
- Future soldier equipment
- Portable radios
- Portable defibrillators
- Professional portable lighting
- Electric bikes and personal mobility

Electrical characteristics

Nominal voltage (1.4 A rate at 20°C)	3.75 V
Typical capacity 20°C (at 1.4 A 20°C 2.5 V cut-off)	6.8 Ah
Nominal energy	26 Wh

Mechanical characteristics (sleeved 100 % charged cell)

Thickness *(Thickness tends to increase with cycling, typically obtained after 600 cycles. Consult Saft) (At beginning of life 18.6 mm)*	20.3 mm
Width max	60.5 mm
Height max (including protection circuit)	70 mm
Typical weight (including protection circuit)	143 g
Lithium equivalent content	2.04 g
Volume	68 cm^3

Operating conditions

Charge method	Constant Current/Constant Voltage
End charge voltage	4.20 +/– 0.05 V
Maximum recommended charge current**	7.0 A (~C rate)
Charge temperature range*	–20°C to +60°C
Charge time at 20°C	To be set as a function of the charge current: C rate → 2 to 3 h C/2 rate → 3 to 4 h C/5 rate → 6 to 7 h
Maximum continuous discharge current**	14 A (~2C rate)
Pulse discharge current at 20°C	up to 30 A (~4C rate)
Discharge cut-off voltage	2.5 V
Discharge temperature range*	–50°C to +60°C

* *For optimized charging below 0°C, 60°C and discharging at –50°C, consult Saft.*
** *Electronic protection circuits within battery packs may limit the maximum charge/discharge current allowable. Consult Saft.*

saft

September 2009

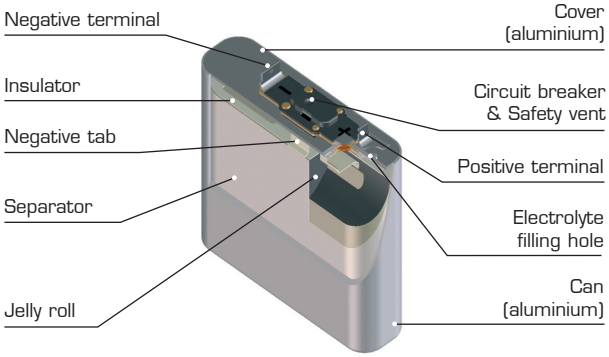
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Battery assembly

In order to operate properly, individual Li-ion cells are mechanically and electrically integrated in battery assemblies specific to each application. The battery assembly incorporates electronics for performance, thermal and safety management.

Technology

- Graphite-based anode
- Lithium Cobalt oxide-based cathode
- Electrolyte: organic solvents
- Built-in redundant safety protections *(shutdown separator, circuit breaker, safety vent)*
- Batteries assembled from MP cells feature an electronic protection circuit



Built-in protection devices ensure safety in case of:

- Exposure to heat
- Exposure to direct sunlight for extended periods of time
- Short circuit
- Overcharge
- Overdischarge

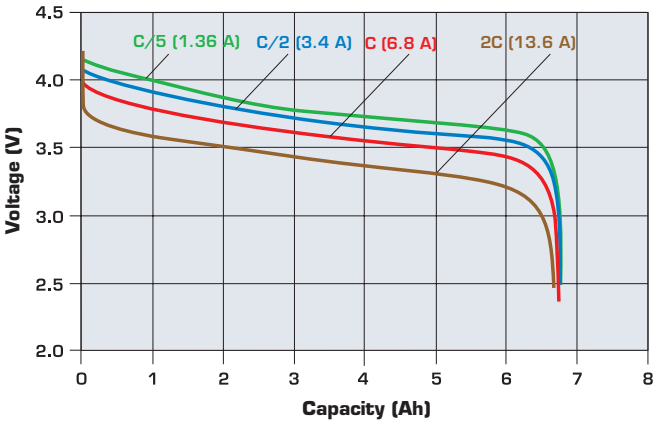
When handling Saft MP batteries:

- Do not disassemble
- Do not remove the protection circuit
- Do not incinerate

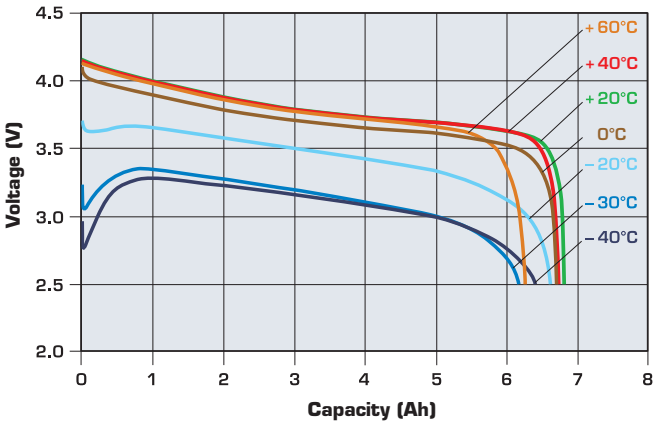
Transportation and storage:

- Store in a dry place at a temperature preferably not exceeding 30°C
- For long-term storage, keep the battery within a 30 ± 15 % state of charge

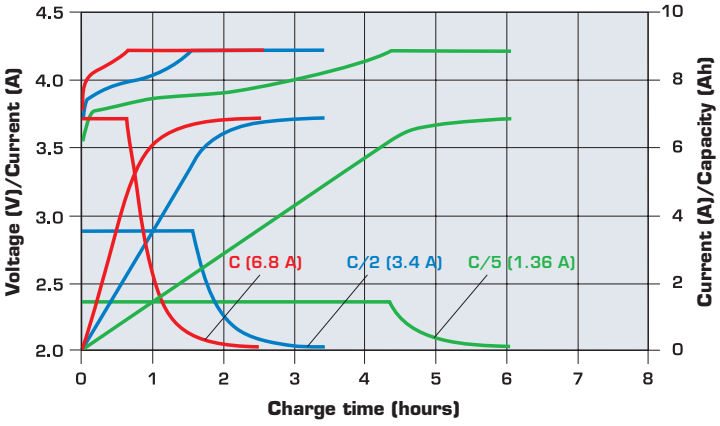
Capacity versus current at +20°C



Typical discharge profiles (1.36 A - C/5 rate)



Charge characteristics to 4.2 V at +20°C



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