

Rechargeable lithium-ion battery

MP 176065

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
- Very high energy density (375 Wh/l and 165 Wh/kg)
- Unrivalled low temperature performance

Key features

- Excellent charge recovery after long storage, even at high temperature
- Maintenance-free
- Restricted for transport/Assigned to Class 9 according to the UN Recommendations on the transport of dangerous goods – Model Regulations
- Long cycle life
(over 70 % initial capacity after 500 cycles, C/2 rate 100 % DoD)

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 (at 1.4 A 20°C 2.5 V cut-off)	6.8 Ah (when charged at 4.2 V) 6.1 Ah (when charged at 4.1 V)
Nominal energy	26 Wh

Mechanical characteristics (Sleeved 100 % charged cell)

Thickness (Thickness tends to increase with cycling, typically obtained after 500 cycles. Consult Saft) (At beginning of life 19 mm)	20.1 mm
Width (max)	60 mm
Height (max)	65 mm
Typical weight	153 g
Lithium equivalent content	2.0 g
Volume	68 cm ³

Operating conditions

Charge method	Constant Current/Constant Voltage
Charge voltage	4.20 +/- 0.05 V
Maximum recommended charge current**	6.8 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	up to 27 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.

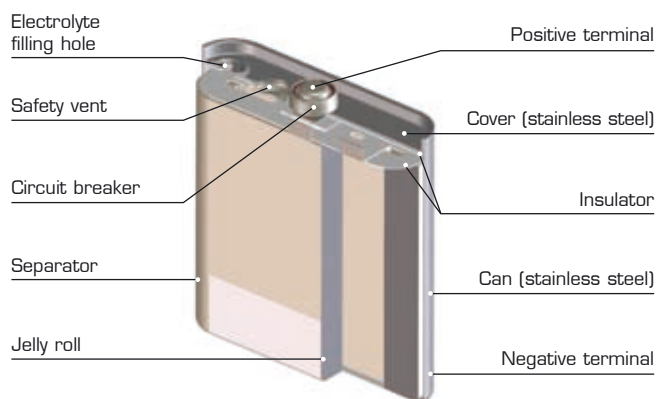
MP 176065

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

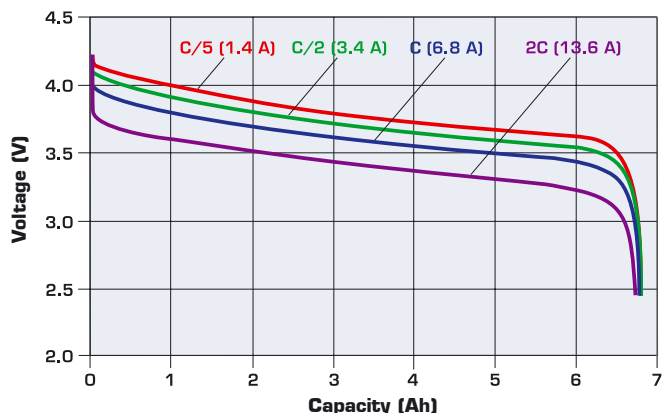
When handling Saft MP batteries:

- Do not solder directly to cell terminal
- Do not disassemble
- Do not remove the protection circuit
- Do not incinerate

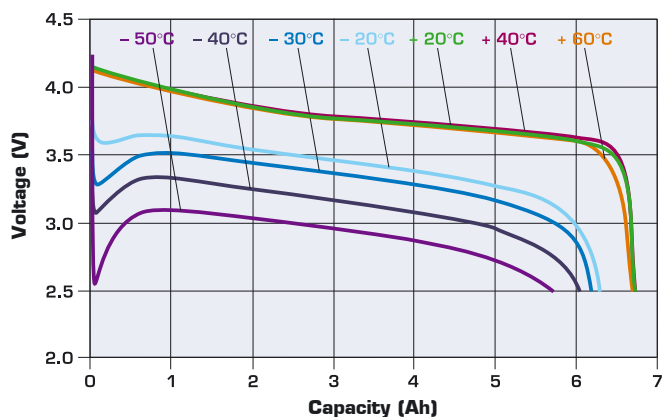
Transportation and storage:

- 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

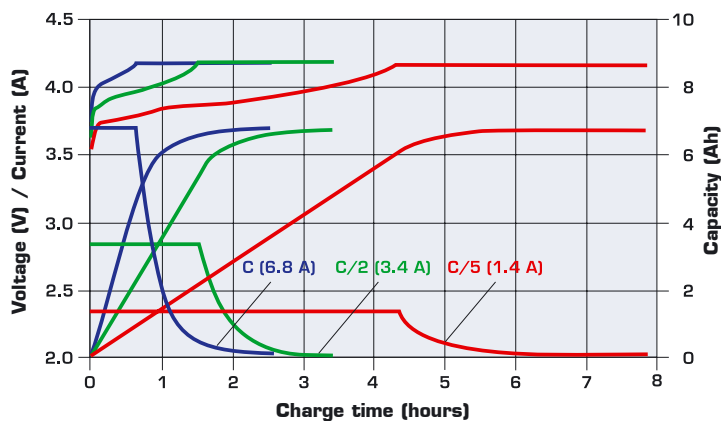
Capacity versus current at + 20°C



Typical discharge profiles (1.4 A - C/5 rate)



Charge characteristics to 4.2 V at + 20°C



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