

Rechargeable lithium-ion battery

MP 174865

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 (380 Wh/l, 163 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 500 cycles 100 % DoD)
- Non-restricted for transport/
Non-assigned to Class 9 according to the UN Recommendations on the transport of dangerous goods – Model Regulations
- Underwriters Laboratories (UL) Component Recognition
(File Number MH 12609)

Main applications

- Mobile asset tracking
- Rack-mount telecom batteries
- Small UPS
- Soldier of the future equipment
- Portable radios
- Professional portable lighting
- Electric bikes and personal mobility
- Portable gaz analysers
- Professional video

Electrical characteristics

Nominal voltage (1.1 A rate at 20°C)	3.75 V
Typical capacity (at 1.1 A 20°C 2.5 V cut-off)	5.3 Ah (when charged up to 4.2 V) 4.8 Ah (when charged up to 4.1 V)
Nominal energy	20 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 18.6 mm)	19.3 mm
Width (max)	48 mm
Height (max)	65 mm
Typical weight	124 g
Lithium equivalent content	1.6 g
Volume	52 cm ³

Operating conditions

Charge method	Constant Current/Constant Voltage
Charge voltage	4.20 +/- 0.05 V
Maximum recommended charge current**	5.0 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**	11 A (~2C rate)
Pulse discharge current	up to 21 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.

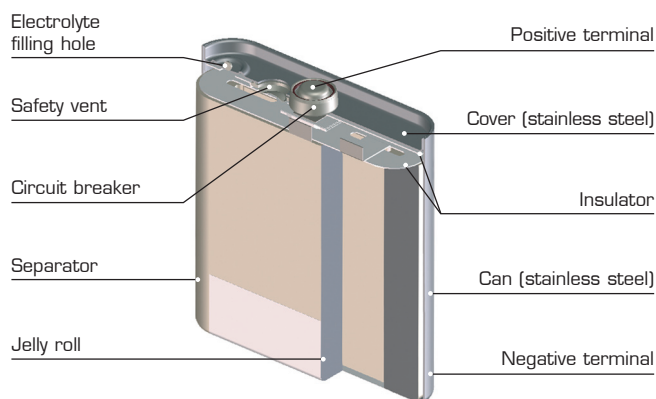
MP 174865

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

Saft

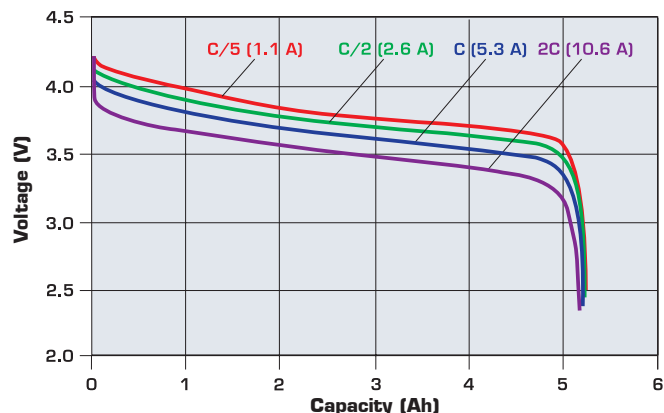
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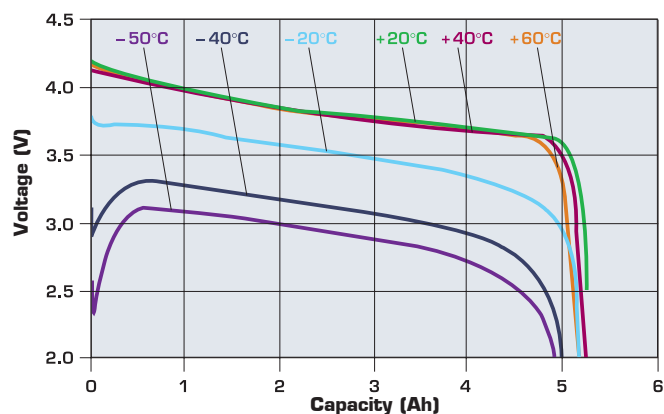
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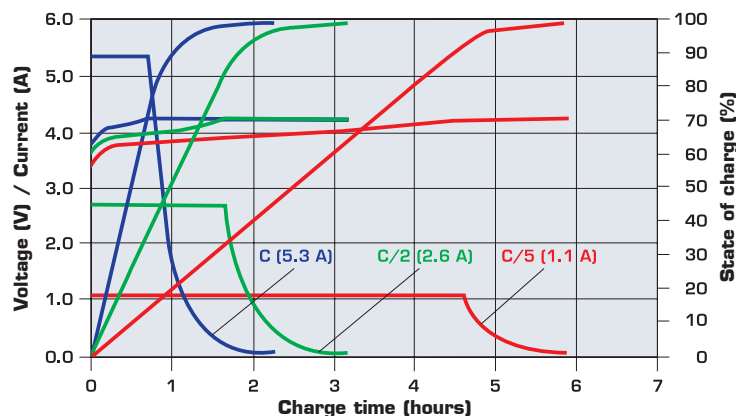
Capacity versus current at + 20°C



Typical discharge profiles (1.1 A - C/5 rate)



Charge characteristics to 4.2 V at + 20°C



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