

Rechargeable lithium-ion battery

MP 144350

High performance
Medium Prismatic cell

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



Benefits

- Extended autonomy and life for mobile systems
- A broad operating temperature range
- Recommended for ruggedized designs
- Easy integration into compact and light systems
- Very high energy density (344 Wh/l and 143 Wh/kg)
- Unrivalled low temperature performance

Key features

- Excellent charge recovery after long storage, even at high temperature
- Maintenance-free
- Long cycle life (over 80 % initial capacity after 500 cycles at 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
- Small UPS
- Soldier of the future equipment
- Portable radios
- Professional portable lighting
- Bar code readers
- Portable payment terminal

Electrical characteristics

Nominal voltage (0.5 A rate at 20°C)	3.75 V
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Typical capacity (at 0.5 A 20°C 2.5 V cut-off)	2.6 Ah
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Mechanical characteristics (Sleeved 100 % charged cell)

Thickness <i>(Thickness tends to increase with cycling, typically obtained after 500 cycles. Consult Saft) (At beginning of life 15.0 mm)</i>	15.3 mm
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Width (max)	43.9 mm
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Height (max)	54.5 mm
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Typical weight	68 g
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Lithium equivalent content	0.78 g
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Volume	28 cm ³
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Nominal energy	9.75 Wh
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Operating conditions

Charge method	Constant Current/Constant Voltage
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Charge voltage	4.20 +/- 0.05 V
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Maximum recommended charge current**	2.6 A (C rate)
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Charge temperature range*	-20°C to +60°C
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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**	5.0 A (~2C rate)
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Pulse discharge current	up to 10 A (~4C rate)
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Discharge cut-off voltage	2.5 V
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Discharge temperature range*	-50°C to +60°C
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* 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.



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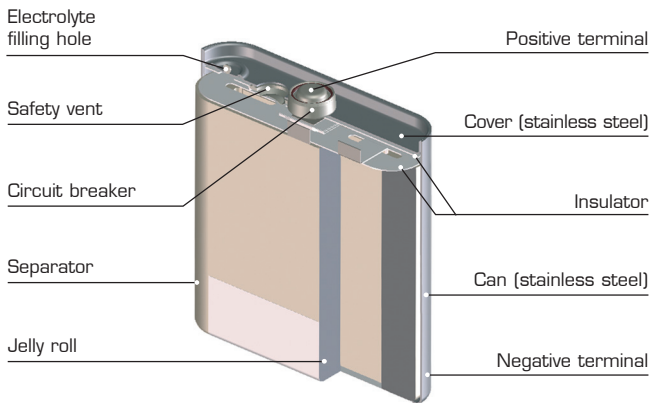
MP 144350

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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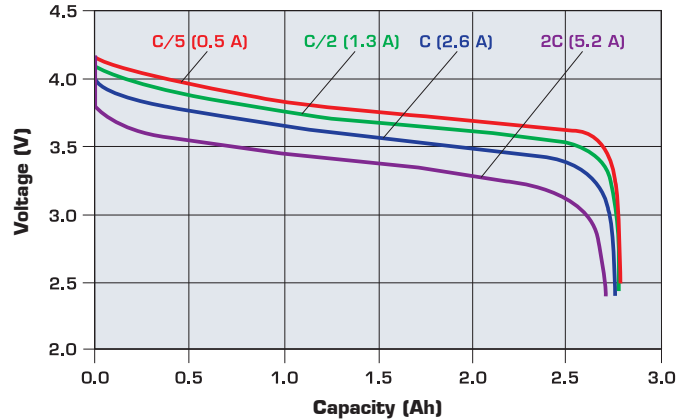
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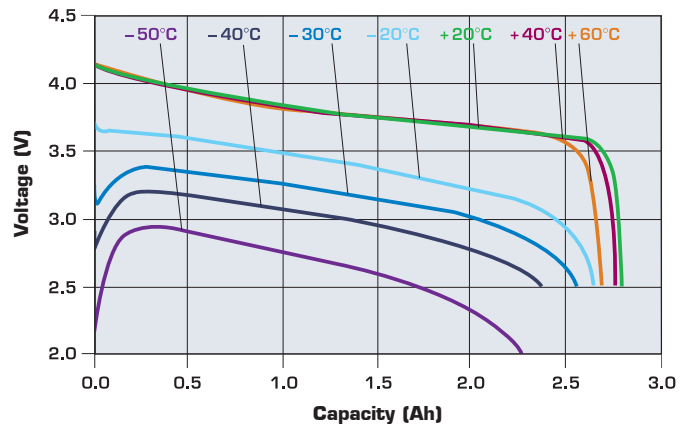
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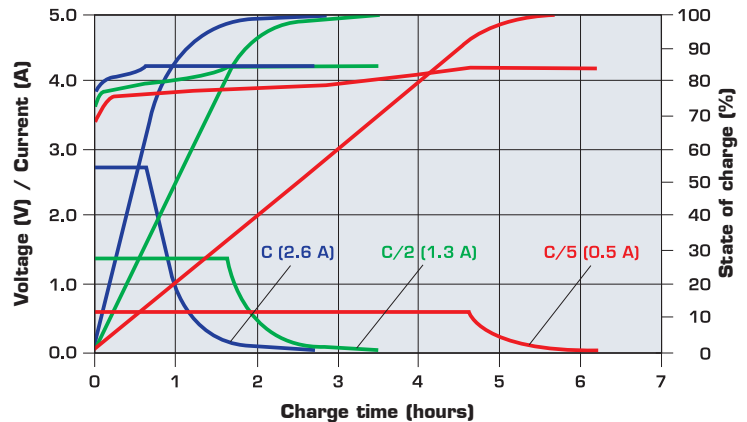
Capacity versus current at + 20°C



Typical discharge profiles (0.5 A - C/5 rate)



Charge characteristics to 4.2 V at + 20°C



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