

Rechargeable lithium-ion battery

MP 174565 Integration™

High performance
Medium Prismatic cell

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



Benefits

- Enhanced capacity
- 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
- High reliability
- Aluminium casing
- Very high energy density (423 Wh/l and 175 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/2 rate 100 % DoD at 20°C)
- Non-restricted for transport/ Non-assigned to Class 9 according to the UN Recommendations on the transport of dangerous goods – Model Regulations
- Compliant with IEC 61960 standard and IEC 60079-11 intrinsic safety standard (class T4 assignment between -20°C to +40°C)
- Underwriters Laboratories (UL) Component Recognition

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 A rate at 20°C)	3.75 V
Typical capacity 20°C (at 1 A 20°C 2.5 V cut-off)	4.8 Ah
Nominal energy	18 Wh

Mechanical characteristics (sleeved 100 % charged cell)

Thickness after 600 cycles (Thickness tends to increase with cycling. Consult Saft) (At beginning of life 17.2 mm)	19.4 mm
Width max	45 mm
Height max (including protection circuit)	68.35 mm
Typical weight (including protection circuit)	103 g
Lithium equivalent content	1.44 g
Volume	42.50 cm ³

Operating conditions

Charge method	Constant Current/Constant Voltage	
End 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**	10 A	
Pulse discharge current at 20°C	up to 20 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.



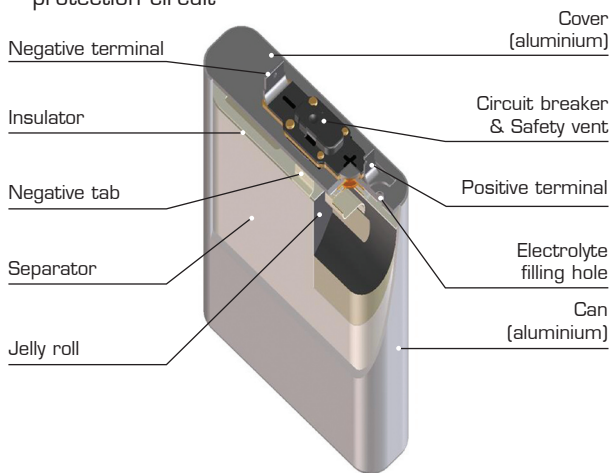
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Battery assembly

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

Saft

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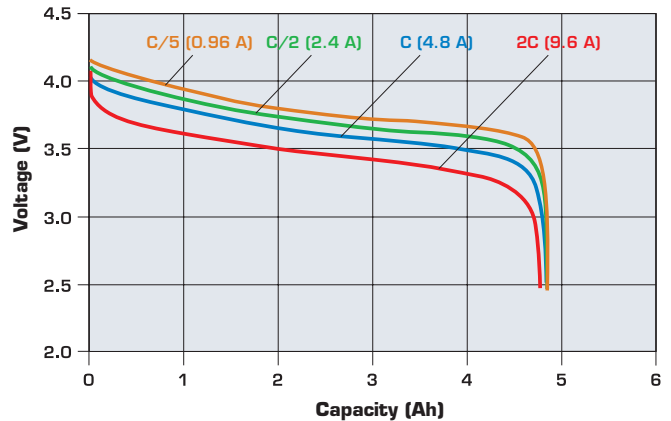
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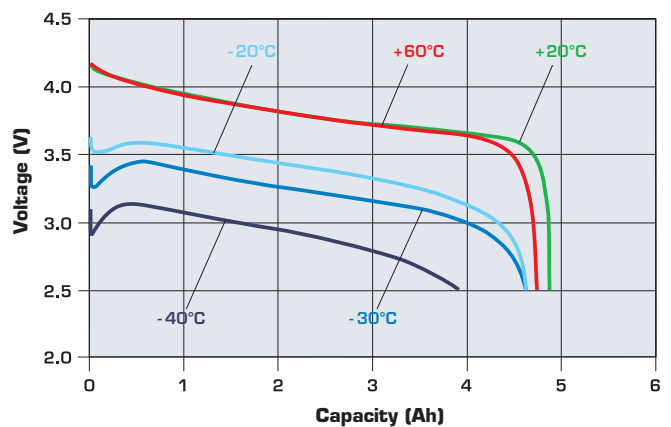
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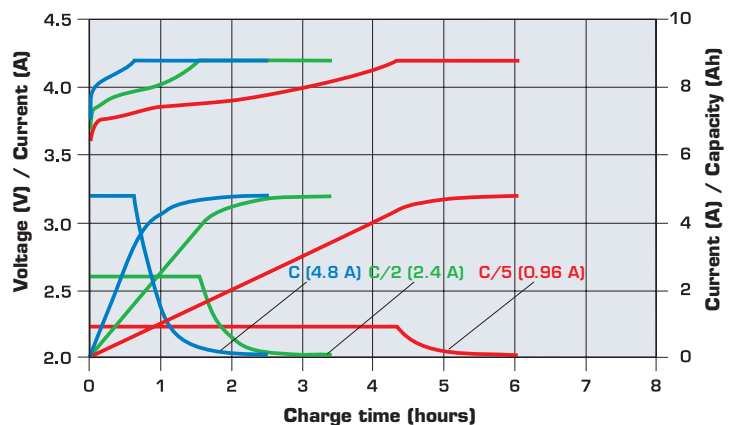
Capacity versus current at 20°C



Typical discharge profiles (0.96 A - C/5 rate)



Charge characteristics to 4.2 V at +20°C



SAFT