

# Rechargeable lithium-ion battery

## MP 176065 Integration™

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 <i>(Thickness tends to increase with cycling, typically obtained after 600 cycles. Consult Saft) (At beginning of life 18.6 mm)</i>	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 <sup>3</sup>

### 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.



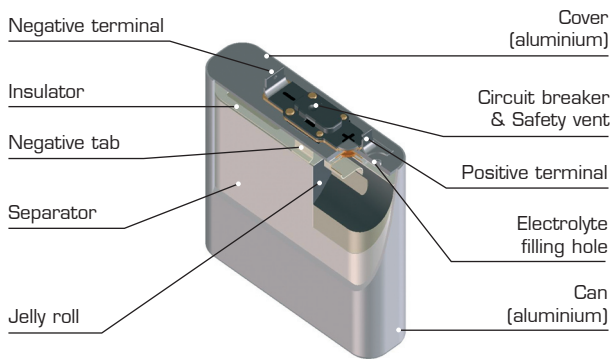
# MP 176065 Integration™

## 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

### Specialty Battery Group

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Doc. N° 54049-2-0909

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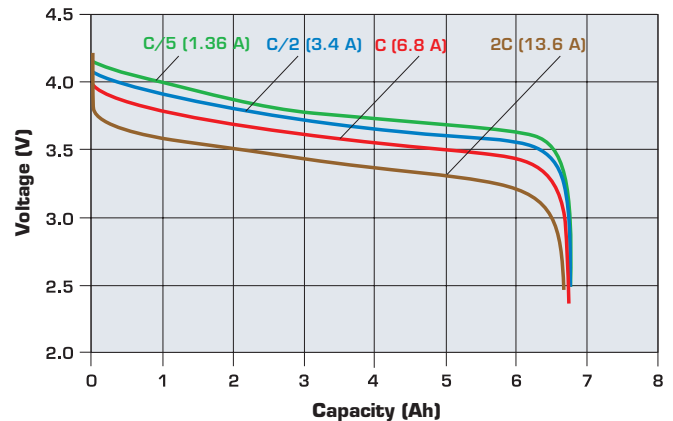
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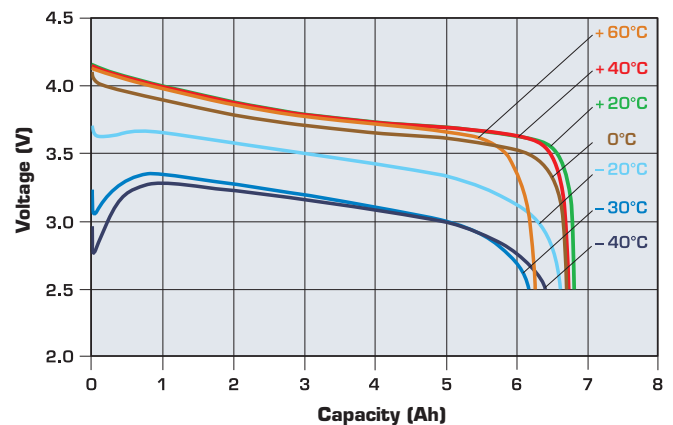
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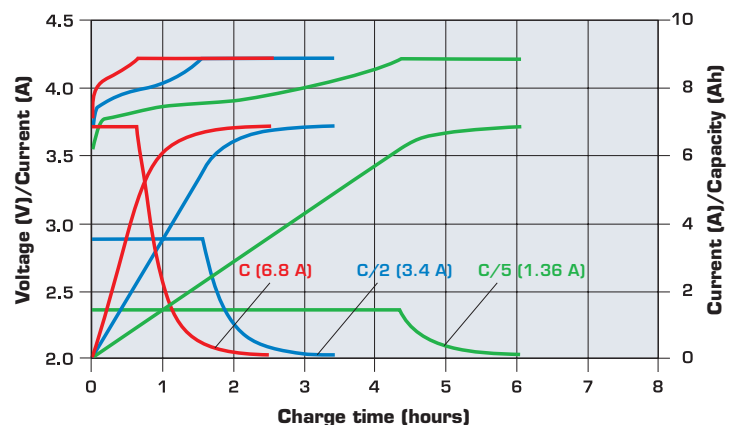
Capacity versus current at +20°C



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



Charge characteristics to 4.2 V at +20°C



**SAFT**