

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 charge rate, 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 18.1 mm) | 19.7 mm |
| Width max | 45.5 mm |
| Height max (including protection circuit) | 70 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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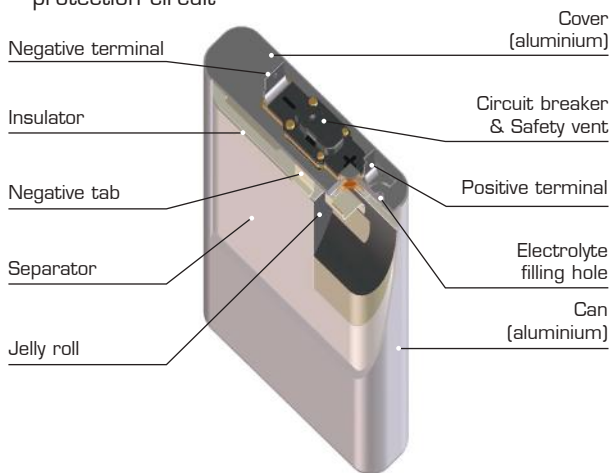
MP 174565 Integration™

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

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Doc. N° 54065-2-0909

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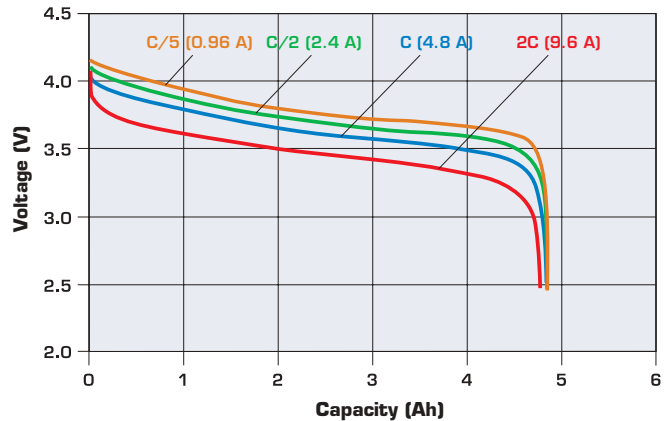
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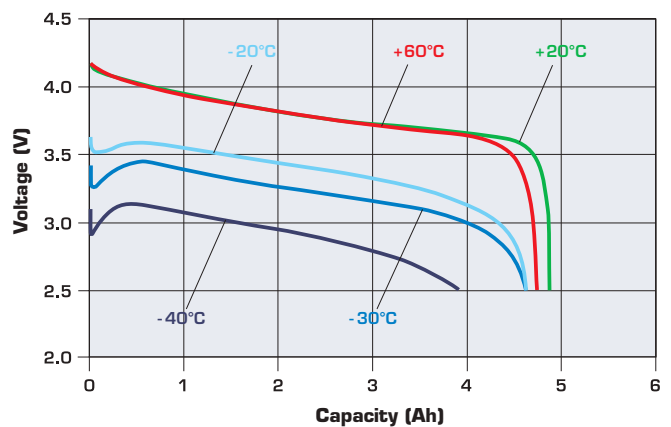
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Produced by Arthur Associates Limited.

Capacity versus current at 20°C



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



Charge characteristics to 4.2 V at +20°C

