

MP 176065 xc

Rechargeable Li-ion cell

3.65 V high energy Li-ion cell for extremely cold environments

Saft's MP 176065 xc cell is ideally suited for applications requiring high level of performances even when exposed to extremely cold environments.

Benefits

- High energy and high operating voltage under negative temperatures
- Long cycle life
- Unrivalled operating temperature range from -50°C to $+60^{\circ}\text{C}$
- Charge capability down to -30°C
- Long shelf life with extremely low capacity loss under storage
- Easy integration
- Smaller environmental footprint than other technologies

Key features

- High energy density (303 Wh/l, and 172 Wh/kg)
- Aluminium casing
- Hermetically sealed
- Operates in any orientation
- Maintenance free
- No memory effect
- Manufactured in the EU

Designed to meet all major quality, safety and environmental standards

- Safety: UL 1642 (File MH 12609)
- Transport: UN 3480
- Quality: ISO 9001, Saft World Class continuous program
- Environment: ISO 14001, RoHS and REACH compliant

Typical applications

- Portable radios
- Future soldier equipment
- Defence systems
- Professional portable tools
- Oil & Gas applications



Electrical characteristics

Typical capacity (at C/5 rate, $+25^{\circ}\text{C}$, 2.5V cut-off) ⁽ⁱ⁾	6.4 Ah	
Nominal voltage	3.65 V	
Nominal energy	23.4 Wh	
Recommended maximum discharge current ⁽ⁱⁱ⁾	From $+60^{\circ}\text{C}$ to 0°C	13 A (~2C rate)
	From 0°C to -40°C	6.4 A (1C rate)
	From -40°C to -50°C	1.3 A (C/5 rate)

Physical characteristics (sleeved cell)

Thickness ⁽ⁱⁱⁱ⁾	18.65 mm
Width	60.5 mm
Height (including terminals)	68.7 mm
Typical weight	136 g
Volume (including terminals)	0.077 l
IEC cell designation	INP19/61/69
Saft internal cell designation	INT 176065 xc

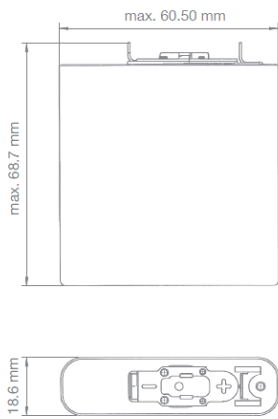
Operating conditions

Typical cut-off voltage	2.5 V	
Charging method	Constant current/Constant voltage	
Charging voltage	4.2 V	
Maximum continuous charge current ⁽ⁱⁱⁱ⁾	0°C to $+60^{\circ}\text{C}$	6.5 A (~1C rate)
	-30°C to 0°C	1.3 A (C/5 rate)
Operating temperatures	Charge	-30°C to $+60^{\circ}\text{C}$
	Discharge	-50°C to $+60^{\circ}\text{C}$
Storage & transportation temperatures	Recommended	$+10^{\circ}\text{C}$ to $+30^{\circ}\text{C}$
	Allowable	-50°C to $+60^{\circ}\text{C}$

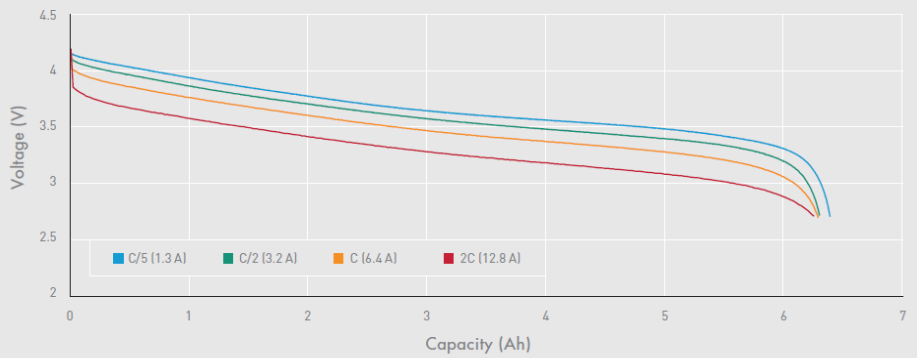
[i] Can vary depending on temperature and discharge rate

[ii] At beginning of life. Can increase with temperature, cycling and during battery lifetime.

[iii] For optimized charging below 0°C , consult Saft



Capacity versus current at + 20°C



Battery assembly

Individual lithium-ion cells need to be mechanically and electrically integrated into battery systems to operate properly. The battery system includes electronic devices for performance, thermal and safety management specific to each application. Please contact Saft for your specific applications requirements.

Battery-level features

- Saft provides complete battery system designs
- Incorporating several levels of redundant safety features to prevent abuse conditions such as over-charge, over-discharge, and short circuits
- Incorporating electronics for performance and efficiency:
 - charge/floating/discharge management
 - cell balancing
 - temperature monitoring
- Battery protection controller at system level
- Communication for State-of-Charge and State-of-Health

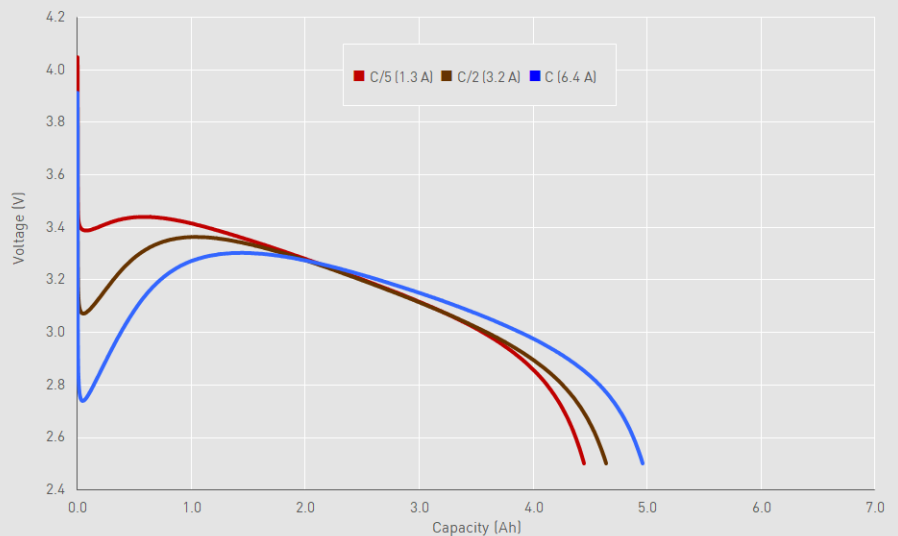
Storage

- The storage area should be clean, cool (preferably not exceeding +30°C), dry and ventilated

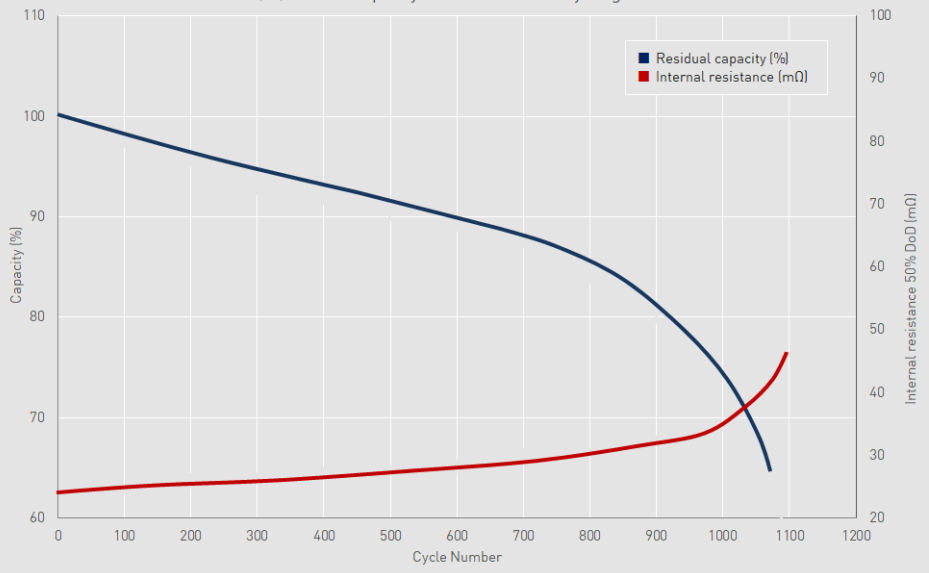
Warning

- Do not crush, short-circuit, incinerate, dismantle, immerse in any liquid, heat above + 60°C
- Observe charging conditions

MP 176065 xc (Ah) capacity versus current at -40°C



MP 176065 xc [%] of rated capacity versus 100% DoD cycling C-C/2 rate at +20°C



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