

# TECHNICAL DATASHEET & SAFETY INFORMATION



## Rechargeable Li-ion batteries for CA Chemical 2F

Standard and Heavy Duty variants



Standard Li-ion battery  
for CA Chemical 2F



Heavy Duty Li-ion battery  
for CA Chemical 2F

### Description

Rechargeable Li-ion batteries for CleanAIR® Chemical 2F powered air-purifying respirators (PAPR).

Four variants are available:

- Standard battery
- Heavy Duty battery
- Standard battery with RDD connector
- Heavy Duty battery with RDD connector



### Application

Compatible exclusively with the following CleanAIR® Chemical 2F PAPR units:

- Chemical 2F Plus
- Chemical 2F Ex (RDD not approved for ATEX use)
- Chemical 2F Tactical

Variants with a connector for a Remote Display Device (RDD) allow monitoring of the unit when it is worn under protective suits or otherwise not visible to the user; apart from the added RDD connector, all technical parameters remain identical.

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Technical specification	Standard battery	Standard battery for RDD	Heavy Duty battery	Heavy Duty battery for RDD
Product code	510010	510012	510020	510022
Weight	0.36 kg	0.37 kg	0.45 kg	0.46 kg
Voltage / Capacity	14.52 V / 3.2 Ah [46.46 Wh]		14.40 V / 4.9 Ah [70.56 Wh]	
Charging time	approx. 3.5 hours		approx. 5.5 hours	
Battery lifespan	up to 500 charging cycles		up to 500 charging cycles	
Dimensions	112 mm × 50 mm × 85 mm		134 mm × 51 mm × 101 mm	
Cells	4 × INR18650MH1		4 × INR21700-50E	
Chemistry	Lithium-ion (Li-ion)		Lithium-ion (Li-ion)	
Materials	Battery case: Polyamide (PA) Cells: Nickel compounds Cobalt compounds Manganese compounds Lithium compounds Electrolyte (proprietary)		Battery case: Polyamide (PA) Cells: Nickel compounds Cobalt compounds Lithium compounds Graphite Lithium hexafluorophosphate (LiPF6) Organic carbonate electrolyte solvents (ethylene carbonate, ethyl methyl carbonate, dimethyl carbonate)	
Usable extinguishing agent	Water or water-based extinguishing agents (in large amounts for cooling)		Water or water-based extinguishing agents (in large amounts for cooling)	
Shelf life	5 years*		5 years*	
Storage conditions	-10 °C to +55 °C, 20–95% RH		-10 °C to +55 °C, 20–95 % RH	
Operating conditions	0 °C to +60 °C, 20–95 % RH		0 °C to +60 °C, 20–95 % RH	
Charging conditions	0 °C to +40 °C, dry indoor environment		0 °C to +40 °C, dry indoor environment	

\* Batteries may self-discharge during storage. To maintain battery condition, it is recommended to charge the battery for at least 1 hour every 3 months. For long-term storage, the optimal battery charge level is between 50% and 70% of its full capacity. After extended storage, perform three full charging cycles to restore the battery to its maximum capacity.

Product combination / settings					Operation time*
PAPR	Battery	Filter type	Headtop type	Air flow	
Chemical 2F	Standard	P	Light hood CA-10	160 lpm	9 h 30 min
Chemical 2F	Heavy Duty	P	Light hood CA-10	160 lpm	14 h
Chemical 2F	Standard	A2B2E2K2P	Light hood CA-10	160 lpm	5 h
Chemical 2F	Heavy Duty	A2B2E2K2P	Light hood CA-10	160 lpm	8 h
Chemical 2F	Standard	A2B2E2K2P	GX-02 Shigematsu	120 lpm	6 h 30 min
Chemical 2F	Heavy Duty	A2B2E2K2P	GX-02 Shigematsu	120 lpm	10 h

\* with new filters and fully charged battery

### Safety Certification

The Standard and Heavy Duty batteries comply with the safety requirements of the following standards:

**UN 38.3 – transport safety test for lithium-ion cells and batteries**

**IEC 62133-2 – safety standard for rechargeable lithium batteries used in portable devices**

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### Transport information

Lithium batteries are subject to international transport regulations. Their classification determines the required packaging, labelling, and whether a Dangerous Goods Declaration is required.

Please refer to the following reference information for the specific transport mode:

Proper shipping name	Lithium ion batteries packed with equipment	Lithium ion batteries
UN code	UN 3481	UN 3480
Road	Class 9, code M4, special provision 188 ADR	
Sea	Class 9, code M4, special provision 188 IMDG	
Air	Class 9, Packing instruction 966 Section II, IATA DGR	Class 9, Packing instruction 965 Section IB, IATA DGR

### Handling

- Do not open, dismantle or modify the battery.
- Do not attempt to access internal components.
- Do not mechanically damage the housing (crushing, puncturing, drilling or cutting).
- Do not expose the battery to fire or temperatures exceeding the specified limits.
- Do not use the battery if the housing is cracked, deformed or otherwise damaged.
- Protect electrical contacts from contamination and conductive materials.
- Do not short-circuit the terminals.
- Use only chargers and equipment approved by the manufacturer.
- Do not use the battery in equipment other than the specified PAPR unit.
- Remove the battery from service if overheating, unusual odor, discoloration or abnormal performance occurs.

### End-of-Life and Recycling

- **Waste batteries must not be disposed of as unsorted municipal waste.**
- **Waste batteries shall be delivered to designated separate collection points established by producers or producer responsibility organizations, or to collection systems operating in accordance with applicable national legislation.**
- Proper use and correct charging in accordance with relevant PAPR unit manual help extend battery service life and reduce waste generation.
- Avoid deep discharge, improper charging, mechanical damage and exposure to extreme conditions.
- By ensuring proper separate collection, end-users contribute to the safe treatment and recycling of waste batteries.
- Used or damaged batteries shall be handled with care.
- To prevent short-circuit, battery terminals should be insulated before disposal.
- Do not crush, incinerate or expose waste batteries to water or fire.
- Batteries containing lithium may present a fire risk if improperly handled.
- Batteries contain substances which may have adverse effects on the environment or human health if released due to improper disposal.
- Proper collection and recycling allow recovery of valuable materials and reduce environmental impact.

The EU Declaration of Conformity is available at: [www.clean-air.cz/doc](http://www.clean-air.cz/doc)

### Disclaimer Notice

All the information contained herein is believed to be accurate and is subject to change without notice. Users should independently evaluate the suitability of each product for their own applications. CleanAIR® products are not designed for, and may not be used in, all applications.