Ecosafe
www.ecosafesa.com

lithium-ion selection

Safety cabinets for lithium-ion batteries

N°23.5



11/24

90 APPROVED EN14470-1 EN1363-1

105 TESTED EN14470-1

EI180 FIREWALL EN13501-2

MADE IN EUROPE

105 MINUTES SAFETY CABINETS FOR LITHIUM-ION BATTERY STORAGE AND CHARGING

To ensure the safety of people and goods, we created a safety storage solution for lithium-ion batteries. Indeed, Li-ion batteries have the particularity to present many risks of which the most known and the most frequent is the thermal runaway which may be caused by a rise of temperature of the environment, a shock or a problem of assembly of the cabinet.
The consequence is that the battery can ignite dangerously and cause fire.

Based on our experience and our know-how on the EN14470-1 105 minutes European standard fire-proof cabinets, we offer several models of different sizes that can meet the widest variety of storage needs. These cabinets can be equipped as needed, with perforated shelves (with high load capacity - 100kg per level) and Containment sumps in the lower part of the cabinet to prevent possible electrolyte leakage damages from the battery. There is also the possibility to recharge batteries via the rack power strips.
The exceptional fire resistance of our cabinets (105 minutes under the European test) guarantees maximum safety. However, it is possible to further secure the storage by adding optional solutions such as:

- The internal safety extinguisher in the special Li-ion battery cabinet (ref. EX100LI or EX200LI)
- Or the safety set including the extinguisher, an audible and visual alarm, the smoke detector, the control box and a cable pass-through in the upper part of the cabinet PINTOLI ref. (VIG190 ou VIG290).

There are four types of usage, depending on your needs:

- Simple battery storage: Cabinet equipped with perforated shelves and a Containment sump.
- Storage and charging of batteries: Cabinet equipped with perforated shelves, a Containment sump and electrical outlet racks + PEXTBALI (max. 4 cables from 4 to 15 mm).
- Simple battery storage + advanced protection system: Cabinet equipped with perforated shelves with a Containment sump + optional advanced protection system (either a fire extinguisher or a security set including visual and sound alarm, control box, automatic smoke detector, fire extinguisher and cable pass-through).
- Storage and charging of batteries + advanced protection system: Cabinet equipped with perforated shelves, a Containment sump and electrical outlet racks + optional advanced protection system (either a fire extinguisher or a security set including visual and sound alarm, control box, automatic smoke detector, fire extinguisher and cable pass-through).

The containment sump must be of controlled tightness and must resist the physiochemical properties of the material it contains.

In the event of a fire, the cabinets must not be moved except by the fire brigade.



The cabinets can be connected to a **three-phase** electrical supply system. We can design and equip our cabinets according to your requirements or electrical constraints. Quick disconnection systems and other electrical specifications are available according to your needs.

OUR CABINETS ARE SUITABLE FOR STORING AND RECHARGING LITHIUM-ION BATTERIES INCLUDED IN THE FOLLOWING EQUIPMENT (NON-EXHAUSTIVE LIST):



Electric bicycles | Chainsaws, hedge trimmers, lawn mowers... | Drones | Electric bikes | Electro-portable battery powered tools | Electric scooters | Elevator trolleys

COMPLIANCE

- REGULATION - EU -2023/1542 - Article 42 - 4. Storage or transport conditions ensure the conformity of batteries.
- Complies with level 2 of standard EN 16121+A1 (opening/closing 80000 cycles and placement of the load defined by the manufacturer on the shelves).
- Proven fire resistance of 105 minutes, according to the ISO 834 curve as per the EN 14470-1 standard
- Standardized warning labels in accordance to ISO 3864 and ISO 7010, as well as the European directive 92/58/EEC.

CONSTRUCTION

- Steel construction and double thermal insulation triple wall.
- Outer walls in 12/10th steel and white RAL 9010 epoxy painting.
- Thermal insulation panels limiting thermal bridges.
- Melamine interior panels.

EQUIPMENTS

- Thermodilating door seals.
- Doors with automatic closing.
- Key closing.
- Ventilation holes with ventilation outlet Ø 100 mm for possible connection.
- Ventilation ducts with hot-melt system to isolate the contents of the cabinet in case of fire.
- Fixing point for earthing link.

OPTIONAL ACCESSORIES

- Perforated shelves with load capacity of 50kg (ref E48LI) / 100kg (ref E35LI)
- Removable Containment sump at the bottom (ref. B148 and B235)
- Fire extinguisher automatically triggered at 79°C by special lithium thermal bulb (Ref. EX100LI, EX200LI or EX500LI) (by smoke detection if included in the VIG190 / VIG290 / VIG590).
- Rack of electrical outlets for recharging batteries (ref. PRISELI / see the chart by country).
- Fire-resistant cables and casing.
- 3ML IEC cable for quick disconnection.
- Drilling in the lower part for cable passage with fire-resistant cable (Ref. PEXTBALI)
- Security and alarm unit comprising: visual and audible alarm, control box, fire extinguisher with automatic smoke detector activation, and cable duct (Ref. VIG190 or VIG290).

VENTILATION

All cabinet models have ventilation holes, allowing them to be connected to a ventilation system. Forced ventilation is strongly recommended to prevent internal heat build-up or stagnation of vapors in the event of electrolyte liquid leakage. This can be connected either to an external outlet or to a ventilation or filter box.

© ECOSAFE reserves the right to discontinue or change specifications or designs at any time without notice and without incurring obligations.10/2023

90 APPROVED EN14470-1 EN1363-1

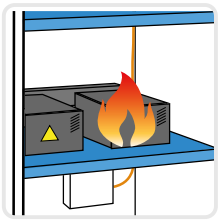
105 TESTED EN14470-1

EI180 FIREWALL EN13501-2

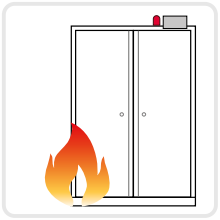
MADE IN EUROPE



▲
795+LIX4 + 4 PRISELI + B235



180 min
Fire-resistant construction
(from inside to outside)
certified EI 180 min type A1,
in accordance with standard **NF EN 13501-2.**



105 min
Fire resistance (from the outside
inside) tested **105** min
and approved for 90 min,
in accordance **EN 14470-1 & EN 1363-1.**



Audible and visual alarm
(VIG290)



Smoke detector
(VIG290)



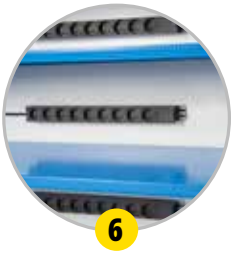
Visual and audible
alarm box (VIG290)



Automatic fire extinguisher
(EX200LI) included in VIG290



Pallet truck movement
(empty)



PRISELI racks and
shelves (E35LI)



Drilling for
cable passage
PEXTBALI

© ECOSAFE reserves the right to discontinue or change specifications or designs at any time without notice and without incurring obligations. 01/2024

90 APPROVED EN14470-1 EN1363-1

105 TESTED EN14470-1

EI180 FIREWALL EN13501-2

MADE IN EUROPE



▲ 798+LIX2 + 2 PRISELI + B148



▲ 793+LIX2 + 2 PRISELI + B235

NON-EQUIPPED CABINETS

P/N		Description	External dimensions H x W x D (mm)	Internal dimensions H x W x D (mm)	Empty weight without options (kg)
White	Black				
793+LI	793+NLI	2 doors counter cabinet to be equipped	1100 x 1137 x 670 (1)	820 x 1000 x 410	297
798+LI	798+NLI	1 door counter cabinet to be equipped	1100 x 635 x 670 (1)	820 x 490 x 410	182
794+LI	794+NLI	1 door tall cabinet to be equipped	1950 x 635 x 620 (2)	1620 x 490 x 410	287
795+LI	795+NLI	2 doors tall cabinet to be equipped	1950 x 1137 x 620 (2)	1620 x 1000 x 410	453

PRE-EQUIPPED CABINETS

P/N		Description	External dimensions H x L x P (mm)	Weight (kg)
White	Black			
793+LIA2	793+NLIA2	2 doors counter-top 90 minutes fire cabinet for Li-ion batteries pre-equipped with 2 x E35LI shelves + 1 x EX100LI (extinguisher)	1100 x 1137 x 670 (1)	299
793+LIX2	793+NLIX2	2 doors counter-top 90-minutes fire cabinet for Li-ion batteries, pre-equipped with 2 E35LI shelves + 1 x VIG190 (visual and audible alarm, control box, automatic smoke detector, EX100LI fire extinguisher and cable duct on top [ref. PINTOLI])	1100 x 1137 x 670 (1)	302
798+LIA2	798+NLIA2	1 door counter-top 90 minutes fire cabinet for Li-ion batteries pre-equipped with 2 shelves E48LI + 1 x EX100LI (extinguisher)	1100 x 635 x 670 (1)	184
798+LIX2	798+NLIX2	90-minutes fire cabinet, counter-top, 1 door for Li-ion batteries, pre-equipped with 2 shelves E48LI + 1 x VIG190 (visual and audible alarm, control box, automatic smoke detector, EX100LI fire extinguisher and cable duct on top [ref. PINTOLI])	1100 x 635 x 670 (1)	187
794+LIA4	794+NLIA4	1 door high 90 minutes fire cabinet for Li-ion batteries pre-equipped with 4 shelves E48LI + 1 x EX100LI (extinguisher)	1950 x 635 x 620 (2)	289
794+LIX4	794+NLIX4	1 door high 90 minutes fire cabinet for Li-ion batteries pre-equipped with 4 shelves E48LI + 1 x VIG190 (visual and audible alarm, control box, automatic smoke detector, EX100LI fire extinguisher and cable duct on top [ref. PINTOLI])	1950 x 635 x 620 (2)	292
795+LIA4	795+NLIA4	2 doors high 90 minutes fire cabinet for Li-ion batteries pre-equipped with 4 shelves E35LI + 1 x EX200LI (extinguisher)	1950 x 1137 x 620 (2)	455
795+LIX4	795+NLIX4	2 doors high 90-minutes fire cabinet for Li-ion batteries, pre-equipped with 4 E35LI shelves + 1 x VIG290 (visual and audible alarm, control box, automatic smoke detector, EX200LI fire extinguisher and cable duct on top [ref. PINTOLI])	1950 x 1137 x 620 (2)	457

(1) Depth including connecting sleeve at the back. Depth without sleeve: 620 mm
(2) Height including connecting sleeve on top. Height without sleeve: 1900 mm

© ECOSAFE reserves the right to discontinue or change specifications or designs at any time without notice and without incurring obligations.01/2024

90 APPROVED EN14470-1 EN1363-1

105 TESTED EN14470-1

EI180 FIREWALL EN13501-2

MADE IN EUROPE



▲ 794+LIX4 + 4 PRISELI



▲ 795+NLIX4 + 4 PRISELI

ACCESSORIES

P/N	Description	Weight (kg)	Corresponding cabinet(s)
E48LI	Perforated shelf for 1 door cabinet	5	798+LI and 794+LI
E35LI	Perforated shelf for 2 doors cabinet	7	793+LI and 795+LI
B148	Containment sump for 1 door cabinet	5	798+LI and 794+LI
B235	Containment sump for 2 doors cabinet	10	793+LI and 795+LI
EX100LI	Fire extinguisher with automatic triggering at 79°C per thermal bulb for lithium	2	All models except 795+LI
EX200LI	Fire extinguisher with automatic triggering at 79°C per thermal bulb for lithium for 795+LI	3	795+LI
VIG190	Security and alarm package including visual and audible alarm, control box, self-activating smoke detector, EX100LI fire extinguisher and cable duct	5	All models except 795+LI
VIG290	Security and alarm package including visual and audible alarm, control box, self-activating smoke detector, EX200LI fire extinguisher and cable duct for 795+LI	6	795+LI
PEXTBALI	Cable entry hole with fire-resistant cable entry at the bottom (max. 4 cables)	-	Any model
PINTOLI	Internal cable duct in the upper part	-	Any model
PRISELI	Rack of 8 electrical outlets (220 volts - 4000 watts - 16 amps -50hz)	2	Any model
PRISELIF	Rack of 8 electrical outlets type F (Germany)	2	Any model
PRISELICH	Rack of 8 electrical outlets type J (Switzerland)	2	Any model
PRISELIUK	Rack of 7 electrical outlets type G (United Kingdom)	1,7	Any model
PRISELICC	Rack of 6 electrical outlets equipped with a thermal-magnetic circuit breaker	-	Any model
ONDULI	4-socket safety inverter for VIG190 or VIG290 only (H 90 x W 163 x D 245 mm - 230 volts - 300 watts - 500 volts)	3,5	Any model
SERCODE	Digital code lock, one per door, equipped with its security key	1	Any model
SED	WiFi alarm and data logger system	1	Any model

© ECOSAFE reserves the right to discontinue or change specifications or designs at any time without notice and without incurring obligations. 01/2024

90 APPROVED EN14470-1 EN1363-1

105 ACCORDING TO EN14470-1

EI180 FIREWALL EN13501-2

MADE IN EUROPE

105 MINUTE SAFETY CABINETS FOR LITHIUM-ION BATTERY STORAGE AND CHARGING



▲ 790+1FLIX4+B1FLI



▲ 790+2FLIXA+B2FLI

COMPLIANCE

- REGULATION - EU -2023/1542 - Article 42 - 4. Storage or transport conditions ensure the conformity of batteries.
- Construction for fire resistance (from outside to inside) of 105 min or 90 min, according to EN 14470-1 & EN 1363-1.
- Fireproof construction (from the inside to the outside) certified EI 180 min type A1, according to NF EN 13501-2.
- Standardised pictograms in accordance with ISO 3864, ISO 7010, European Directive 92/58/EEC and EN 14470-1.

ADVANTAGES

- Full height handle for better ergonomics and ease of opening.
- Legs for easy movement by pallet truck: avoids heavy handling and allows the cabinet to be moved easily in the event of a new layout
- Aesthetic and easy to use skirting board cover without the need for fixing tools.
- Ventilation ducts with hot-melt system to isolate the contents of the cabinet in the event of fire.

PASSIVE SAFETY

- Double wall construction:
  - External walls in 12/10th steel + white epoxy paint RAL 9010.
  - Internal walls in white RAL 9010 melamine.
- Thermal insulation panels between the walls to limit thermal bridges.
- Fixing point for earthing.

ACTIVE SAFETY

- Thermo-expanding door seals.
- Ventilation holes with 100 mm diameter ventilation outlet for possible connection.
- Doors with automatic closing and key lock.

OPTIONS

- Perforated shelf for 790+1FLI with 100 KG load capacity (Ref. E1FLI)
- Shelving consisting of 4 perforated levels for 790+2FLI with 150 KG load capacity (Ref. R2FLI). Total shelf weight: 30kg. Colour: grey RAL 7035. Perforated posts at 25mm pitch
- Containment sump at the bottom (Ref. B1FLI or B2FLI)
- Fire extinguisher automatically triggered at 79°C by special lithium thermal bulb (Ref. EX500LI) (by smoke detection if included in the VIG590).
- Rack of electrical outlets for recharging batteries (ref. PRISELI / see the chart by country).
- Fire-resistant cables and casing.
- 3ML IEC cable for quick disconnection.
- Drilling in the lower part for cable passage with fireproof cable gland (Ref. PEXTBALI)
- Security and alarm unit comprising: visual and audible alarm, control box, fire extinguisher automatically triggered by a smoke detector, and cable duct (Ref. VIG590).

© ECOSAFE reserves the right to discontinue or change specifications or designs at any time without notice and without incurring obligations.01/2024

RANGE 790FLI

90 APPROVED EN14470-1 EN1363-1 | 105 TESTED EN14470-1 | EI180 FIREWALL EN13501-2 | MADE IN EUROPE





NON-EQUIPPED CABINETS

P/N	Description	External dimensions H x W x D (mm)	Internal dimensions H x W x D (mm)	Weight (kg)
790+1FLI	Safety cabinet for the storage of of lithium-ion batteries	2050(1) x 905 x 903	1685x760x 695	392
790+2FLI	Safety cabinet for the storage of of lithium-ion batteries	2050(1) x 1502 x 903	1685x1350x695	652

PRE-EQUIPPED CABINETS

P/N	Description	External dimensions H x W x D (mm)	Weight (kg)
790+1FLIA4	2 doors 90 minute fire cabinet for Li-ion batteries pre-equipped with 4 shelves E1LI + 1 x EX500LI (extinguisher)	2050(1) x 905 x 903	432
790+1FLIX4	2 doors 90-minute fire cabinet for Li-ion batteries, pre-equipped with 4 E1FLI shelves + 1 x VIG590 (visual and audible alarm, control box, automatic smoke detector, 1 EX500LI fire extinguishers and cable duct on top [ref. PINTOLI])	2050(1) x 905 x 903	442
790+2FLIA4	2 doors 90 minute fire cabinet for Li-ion batteries pre-equipped with 4 E2LI shelves + 1 x EX500LI (fire extinguisher)	2050(1) x 1502 x 903	692
790+2FLIX4	2 doors 90-minute fire cabinet for Li-ion batteries, pre-equipped with 4 E2FLI shelves + 1 x VIG590 (visual and audible alarm, control box, automatic smoke detector, 1 x EX500LI fire extinguishers and cable duct at the top [ref. PINTOLI])	2050(1) x 1502 x 903	702

ACCESSORIES

P/N	Description	External dimensions H x W x D (mm)	Weight (kg)	Corresponding cabinet(s)
E1FLI	Perforated shelf for cabinet 790+1FLI	50 x 750 x 680	7.5	790+1FLI
B1FLI	Containment sump for 790+1FLI cabinet	90 x 750 x 680	5	790+1FLI
R2FLI	Shelf with 4 perforated levels for 790+2FLI	1500 x 1250 x 600	30	790+2FLI
E2FLI	Additional level for 790+2FLI cabinet	50 x 1250 x 600	7	790+2FLI
B2FLI	Containment sump for 790+2FLI cabinet	90 x 1250 x 600	10	790+1FLI
EX500LI	Self-activating fire extinguisher at 79°C with special lithium bulb for 790+1FLI and 790+2FLI		2	Any model
VIG590	Security and alarm package including visual and audible alarm, control box, automatic smoke detector, EX500LI fire extinguisher and cable entry for 790+1FLI and 790+2FLI		10	Any model
PEXTBALI	Cable entry hole with fire-resistant cable entry at the bottom (max. 4 cables)		-	Any model
PINTOLI	Internal cable duct in upper part		-	Any model
PRISELI	Rack of 8 electric outlets (220 volts - 4000 watts - 16 amps - 50hz)		2	Any model
PRISELIF	Rack of 8 electric outlets type F (Germany)		2	-
PRISELICH	Rack of 8 electrical outlets type J (Switzerland)		2	-
PRISELIUK	Rack of 7 electrical outlets type G (United Kingdom)		1,7	-
PRISELICC	Rack of 6 electrical outlets equipped with a thermal-magnetic circuit breaker		-	Any model
ONDULI	4-socket safety inverter for VIG590 only (H 90 x W 163 x D 245 mm - 230 volts - 300 watts - 500 volts)		3,5	Any model
SERCODE	Digital code lock (one per door)		1	Any model
SED	WiFi alarm and data logger system		1	Any model

© ECOSAFE reserves the right to discontinue or change specifications or designs at any time without notice and without incurring obligations. 01/2024

EQUIPMENT & OPTIONS

WIFI ALARM AND DATA LOGGER SYSTEM

- Data transmission via WiFi.
- All measurement data available anywhere, anytime, on any device.
- **Alarm when thresholds are exceeded.**
- Free online data hosting on Cloud.

The WiFi data logger system is the modern solution for monitoring temperature values in storage and work cabinets. The system is easy to install via a browser. WiFi data loggers reliably record temperature values at adjustable intervals
and transmit the measured values directly via a WiFi network to the Cloud. Recorded measurement values can be accessed anytime and anywhere via an Internet-connected tablet or PC. **Limit violations are immediately notified by e-mail, or optionally (by SMS as a push message)**. In this way, critical processes are always under control, even when you're not on site. Thanks to its long battery life, the system is virtually maintenance-free.



▲ SED

ADVANCED SECURITY SOLUTIONS

VIG190 - Security and alarm package comprising (or VIG590) :



1 Visual and audible alarm



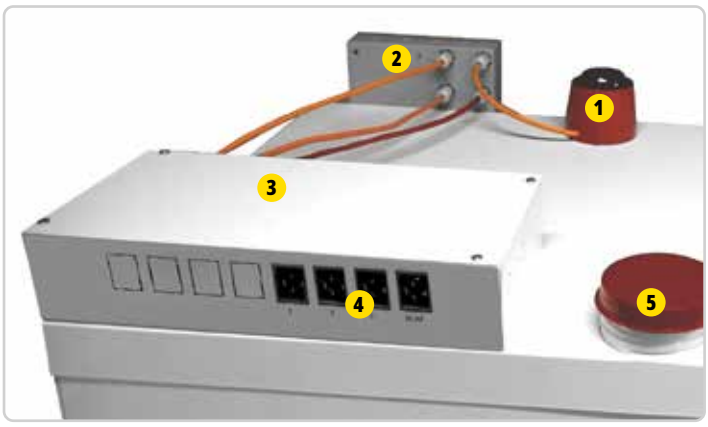
2 Control box



Automatic smoke detector



Special lithium extinguisher



3 PINTOLI cable duct
4 Power supply + 4 Priseli + IEC cables supplied
5 Ventilation outlet for connection to a plenum (see relevant section)

ADDITIONAL FEATURES



ONDULI



PEXTBALI



Détecteur de fumée connecté ALARMWI



PRISELI



SERCODE



EX100LI/EX200LI/EX500LI

© ECOSAFE reserves the right to discontinue or change specifications or designs at any time without notice and without incurring obligations.10/2023

TABLE OF COMPOUND REFERENCES FOR LITHIUM CABINETS

RANGE 790+LI & 790+FLI

Réf. Black colour :	Fire extinguisher	Fire extinguisher, smoke detector smoke detector, flashing beacon alarm box	Shelves perforated	Rack of 8 sockets	cable passage lower part	Containment sump in lower section
798+LI2P2PEB	-	-	2	2	1	1
798+NLI2P2PEB	-	-	2	2	1	1
798+LIA2P2PEB	1	-	2	2	1	1
798+NLIA2P2PEB	1	-	2	2	1	1
798+LIX2P2B	-	1	2	2	-	1
798+NLIX2P2B	-	1	2	2	-	1
793+LI2P2PEB	-	-	2	2	1	1
793+NLI2P2PEB	-	-	2	2	1	1
793+LIA2P2PEB	1	-	2	2	1	1
793+NLIA2P2PEB	1	-	2	2	1	1
793+LIX2P2B	-	1	2	2	-	1
793+NLIX2P2B	-	1	2	2	-	1
794+LI4P4PEB	-	-	4	4	1	1
794+NLI4P4PEB	-	-	4	4	1	1
794+LIA4P4PEB	1	-	4	4	1	1
794+NLIA4P4PEB	1	-	4	4	1	1
794+LIX4P4B	-	1	4	4	-	1
794+NLIX4P4B	-	1	4	4	-	1
795+LI4P4PEB	-	-	4	4	1	1
795+NLI4P4PEB	-	-	4	4	1	1
795+LIA4P4PEB	1	-	4	4	1	1
795+NLIA4P4PEB	1	-	4	4	1	1
795+LIX4P4B	-	1	4	4	-	1
795+NLIX4P4B	-	1	4	4	-	1
790+1FLIX4P4B	-	1	4	4	-	1
790+2FLIX4P4B	-	1	4	4	-	1

▼Example of the composition of a lithium reference



Indicates the model, cabinet size

Indicates the presence an EX200LI fire extinguisher

Indicates the presence of a PEXTBALI

795+NLIA4P4PEB

Indicates the colour of the cabinet (black)

Indicates the presence of 4 shelves

Indicates the presence of 4 PRISELI

Indicates the presence of a drip tray

© ECOSAFE reserves the right to discontinue or change specifications or designs at any time without notice and without incurring obligations. 08/24

EN 16121 | FM 6050 | 90 APPROVED EN14470-1 EN1363-1 | 105 TESTED EN14470-1 | EI180 FIREWALL EN13501-2 | MADE IN EUROPE

CABINETS WITH COMPARTMENTS FOR LITHIUM BATTERIES



▲ 794+LIAC5S



▲ 795+LI2AC10S



Standardized pictograms



Locker equipped with a socket



Numbered locker



Key locking system

CONFORMITY

- Fire resistance (from outside to inside) tested to 105 min and approved to 90 min, in accordance with standards EN 14470-1 & EN 1363-1.
- Fire-stop construction (from inside to outside) certified EI 180 min type A1, in accordance with standard NF EN 13501-2.
- Tested and approved to FM6050 standard.
- Regulation-UE-2023/1542. Article 42-4. storage or transport conditions ensures battery compliance.
- Complies with level 2 of standard EN 16121+A1 (opening/closing of 80000 cycles and placing of the load defined by the manufacturer on the shelves).
- Standardized pictograms comply with ISO 3864 and ISO 7010 standards, as well as European Directive 92/58/EEC.

CONSTRUCTION

- Steel construction and triple-wall double thermal insulation.
- External walls in 12/10 steel and white epoxy paint RAL 9010. Black ral 9005 for references : 794+NLI, 795+NLI.
- Thermal insulation panels to reduce thermal bridges.
- Melamine interior panels.

EQUIPMENT

- 5 or 10 compartments (20cm high) secured with key or code lock.
- Perforated shelves with 50 KG load capacity.
- Removable retention bin at bottom (Ref. B148).
- Fire extinguisher automatically triggered at 79°C by special lithium thermal bulb (Ref. EX100LI).
- Thermo-expanding door seals.
- Self-closing doors.
- Key lock.
- Ventilation holes with 100 mm dia. ventilation outlet for possible connection.
- Ventilation ducts with thermofusible system to isolate the contents of the enclosure in the event of fire.
- Fixing point for earthing.
- Type E /220v electrical socket in each locker.

OPTIONS

- Code lock for cabinet (ref.SERCODE).
- Ventilation box (ref.CDVA).
- Connection kit (ref.KRC).
- Connected smoke detector (ref.ALARMWI).
- WiFi alarm and data logging system (ref.SED).
- 4-socket security UPS (ref.ONDULI).

VENTILATION

All cabinet models are fitted with ventilation holes, enabling them to be connected to a ventilation system. Forced ventilation is strongly recommended to prevent the build-up of internal heat or the stagnation of vapours in the event of an electrolytic fluid leak. These cabinets can be connected to a ventilation box (see additional options).

© ECOSAFE reserves the right to discontinue or change specifications or designs at any time without notice and without incurring obligations.08/24

EN 16121 | FM 6050 | 90 APPROVED EN14470-1 EN1363-1 | 105 TESTED EN14470-1 | EI180 FIREWALL EN13501-2 | MADE IN EUROPE

PRE-EQUIPPED CABINETS

P/N		Description	Ext. dimensions H x W x D (mm)	Int. dimensions H x W x D (mm) of compartments	Weight (kg)
White	Black				
794+LIAC5	794+NLIAC5	1 door tall cabinet with 5 shelves E48LI + 1 x EX100LI (extinguisher), 5 lockable compartments and a B48 retention bin	1950 x 635 x 620 (1)	[200 x 490 x 410] x5	309
794+LIAC5S	794+NLIAC5S	1 door tall cabinet with 5 shelves E48LI + 1 x EX100LI (extinguisher), 5 compartments with code lock (SERCODE) and a B48 retention bin	1950 x 635 x 620 (1)	[200 x 490 x 410] x5	309
795+LI2AC10	795+NLI2AC10	2 doors tall cabinet with 5 shelves E35LI + 2 x EX100LI (extinguisher), 10 lockable compartments and 2 B48 retention bins	1950 x 1137 x 620 (1)	[200 x 490 x 410] x10	484
795+LI2AC10S	795+NLI2AC10S	2 doors tall cabinet with 5 E35LI shelves + 2 x EX100LI (extinguisher), 10 compartments with code lock (SERCODE) and 2 B48 retention bins	1950 x 1137 x 620 (1)	[200 x 490 x 410] x10	484

(1) Height including connecting sleeve on top. Height without sleeve: 1900 mm

ADDITIONAL OPTIONS


SERCODE


ONDULI


SED


CDV-A


KRC

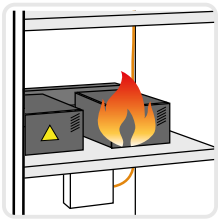

ALARMWI

P/N	Description	Weight (kg)
SERCODE	Digital code lock for each cabinet door, complete with security key	1
ONDULI	4 socket security UPS (H 90 x W 163 x D 245 mm - 230 volts - 300 watts - 500 volt amperes)	3,5
SED	WiFi alarm and data logging system	1
CDV-A	Steel ventilation box	-
KRC	Connection kit for box (between box and cabinet)	-
ALARMWI	Connected smoke detector with alarm on mobile application in the event of triggering with wifi connection	-

© ECOSAFE reserves the right to discontinue or change specifications or designs at any time without notice and without incurring obligations. 08/24

ISO 1182

EI15 FIREWALL EN13501-1



15 min
Fire-resistant construction (from inside to outside) certified EI 15 min type A1, in accordance with standard NF EN 13501-1.



▲ S806+LIA1 + PRISELI + GL06 + PEXTBALI50



▲ S2004+LIA5 + 5 PRISELI + GL04 + 2 PEXTBALI50

COMPLIANCE

- REGULATION - EU -2023/1542 - Article 42 - 4. Storage or transport conditions ensure the conformity of batteries.
- Non-flammable insulating panels, classified A1 according to NF EN ISO 1182, between the walls.
- Fireproof construction certified EI 15 min type A1, according to NF EN 13501-1.
- Standardized warning labels in accordance to ISO 3864, ISO 7010 standards and to European Directive 92/58/EEC.

CONSTRUCTION

- Double wall 12/10 steel construction.
- Mineral fibre insulation 20 mm thick in accordance to NF EN ISO 1182.
- White epoxy paint RAL 9010.
- Adjustable retention shelves on racks.

EQUIPMENTS

- Ventilation by means of a lateral inner duct with opening at the top and bottom (Ø 100 mm).
- Roof ventilation outlet with connection sleeve (Ø 100 mm).
- Hinged doors with reinforced hinges with manual closing.
- Two-point locking.
- Key lock.

OPTIONS

- Perforated shelves with 50 KG load capacity (Ref. E04LI or E06LI)
- Removable Containment sump at the bottom (Ref. GL04 or GL06)
- Fire extinguisher automatically triggered at 79°C by special lithium thermal bulb (Ref. EX100LI, EX200LI or EX500LI)
- Rack of electrical outlets for recharging batteries (Ref. PRISELI / see the chart by country)
- Drilling in the lower part for cable passage with fireproof cable (Ref. PEXTBALI50)

VENTILATION

All cabinet models are equipped with ventilation holes, allowing them to be connected to a ventilation system. Forced ventilation is strongly recommended to avoid internal heat build-up or stagnation of vapors in case of electrolyte leakage. This can be connected either to an external outlet or to a ventilation or filter box.

ALARMWI DESCRIPTION

This Wi-Fi smoke detector alerts you if there is smoke or excessive heat build-up. It alerts you with an audible alarm for people nearby and an alert sent to your phone wherever you are.

- Easy to connect to your Wi-Fi, for alerts on your phone.
- Audible alarm to warn as many people as possible.
- Threshold of detection: 37 °C.
- Powered by 2x AA/LR6 battery.

VENTILATION

All cabinet models are equipped with ventilation holes, allowing them to be connected to a ventilation system. Forced ventilation is strongly recommended to avoid internal heat build-up or stagnation of vapours in case of electrolyte leakage. This can be connected either to an external outlet or to a ventilation or filter box.

© ECOSAFE reserves the right to discontinue or change specifications or designs at any time without notice and without incurring obligations.01/2024

ISO 1182 | EI15 FIREWALL EN13501-1



NON-EQUIPPED CABINETS

P/N	Description	External dimensions H x W x D (mm)	Interior dimensions H x W x D (mm)	Empty weight without options
S804LI	2 doors counter cabinet to be equipped (depth 450)	895 x 1000 x 450 (1)	745 x 950 x 400	75
S806LI	2 doors counter cabinet to be equipped (depth 600)	895 x 1000 x 600 (1)	745 x 950 x 550	90
S2004LI	2 doors tall cabinet to be equipped (depth 450)	2095 x 1000 x 450 (2)	1945 x 950 x 400	152
S2006LI	2 doors tall cabinet to be equipped (depth 600)	2095 x 1000 x 600 (2)	1945 x 950 x 550	174

PRE-EQUIPPED CABINETS

P/N	Description	External dimensions H x W x D (mm)	Weight (kg)
S804+LIA1	2 doors counter-top fire resistant cabinet for lithium batteries pre-equipped with 1 x E04LI shelf + 1 x EX100LI (fire extinguisher)	895 x 1000 x 450 (1)	77
S806+LIA1	2 doors countertop fire resistant cabinet for lithium batteries pre-equipped with 1 x E06LI shelf + 1 x EX100LI (fire extinguisher)	895 x 1000 x 600 (1)	92
S2004+LIA5	2 doors high fire resistant cabinet for lithium batteries pre-equipped with 5 shelves E04LI + 1 x EX200LI (fire extinguisher)	2095 x 1000 x 450 (2)	154
S2006+LIA5	2 doors high fire resistant cabinet for lithium batteries pre-equipped with 5 shelves E06LI + 1 x EX200LI (fire extinguisher)	2095 x 1000 x 600 (2)	176

ACCESSORIES

P/N	Description	Weight (kg)	Corresponding Cabinet(s)
E04LI	Perforated shelf (depth 450)	3	S804LI et S2004LI
E06LI	Perforated shelf (depth 600)	3,5	S806LI et S2006LI
GL04	Containment sump (depth 450)	4	S804LI et S2004LI
GL06	Containment sump (depth 600)	5	S806LI et S2006LI
EX100LI	Self-activating fire extinguisher at 79°C with special lithium bulb	2	S804LI et S806LI
EX200LI	Self-activating fire extinguisher at 79°C with special lithium bulb	3	S2004LI I
EX500LI	Self-activating fire extinguisher at 79°C with special lithium bulb	3	S2006LI
PEXTBALI50	Hole for cable passage with fireproof cable passage at the bottom (max. 4 cables)	-	Any model
PRISELI	Rack of 8 electrical outlets E+F (220 volts - 4000 watts - 16 amps - 50hz)	2	Any model
PRISELIF	Rack of 8 electric outlets type F (Germany)	2	
PRISELICH	Rack of 8 electrical outlets type J (Switzerland)	2	
PRISELIUK	Rack of 7 electrical outlets type G (United Kingdom)	1,7	
PRISELICC	Rack of 6 sockets equipped with a thermal-magnetic circuit breaker (4000 watts)	-	Any model
ONDULI	4-socket safety inverter for VIG190 or VIG290 or VIG590 (H 90 x W 163 x D 245 mm - 230 volts - 300 watts - 500 volts)	3,5	Any model
ALARMWI	Connected smoke detector with alarm on mobile application in case of triggering with wifi connection	-	-
SED	WiFi alarm and data logger system	1	Any model

(1) Depth including connecting sleeve at the back. Depth without sleeve: 400mm (S804LI) 550mm (S806LI)
(2) Height including connecting sleeve at top. Height without sleeve: 2045 mm

© ECOSAFE reserves the right to discontinue or change specifications or designs at any time without notice and without incurring obligations. 10/2023

SAFETY CABINETS FOR STORAGE AND CHARGING OF LITHIUM-ION BATTERIES



▲ AZ301BLI + 4 PRISELI14 + EX200LI + PEXTBALI14



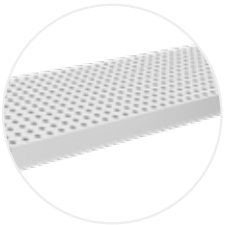
▲ AZ151BLI



▲ AZ111BLI



▲ AZ51NLI + 2 PRISELI + EX100LI + PEXTBALI14



Perforated shelf C150 / C300



Ventilation box CDV-A (option)



Option SERCODE14



ALARMWI connected smoke detector (option)



Fire extinguisher EX100LI/ EX200LI (option)



Cable management PEXTBALI14 (option included with PRISELI14)

© ECOSAFE reserves the right to discontinue or change specifications or designs at any time without notice and without incurring obligations.01/2024



COMPLIANCE

- REGULATION - EU -2023/1542 - Article 42 - 4. Storage or transport conditions ensure the conformity of batteries.
- Complies with recommendation for risk prevention and safety: allows batteries to be stored in a dedicated area.
- Standardised pictograms in accordance with ISO 3864-1 and ISO 7010 standards, and with the European directive 92/58/EEC.

ADVANTAGES

- Cost-effective solution for storing and charging your Li-ion batteries safely and in compliance with legislation.
- Standardised pictogram for the storage of Li-ion batteries.
- Work surface of the countertop cabinets (ref. AZ51BLI and AZ111BLI) covered by a rubber mat.

ACTIVE SAFETY

- Top and bottom ventilation holes on each door.
- Hinged door(s) with 110° opening angle.
- 3-point lock and key.
- Drilling for connection to a forced ventilation system. (ref. AZVENT), supplied with a Ø 100 mm sleeve (included).

PASSIVE SAFETY

- One-piece steel construction.
- Epoxy paint: Body grey RAL 7035; Door(s) blue RAL 5010.
- Perforated shelves, adjustable in height on racks, with a 15 mm pitch.

DESCRIPTION ALARMWI

This Wi-Fi smoke detector alerts you if there is smoke or excessive heat build-up. It alerts you with an audible alarm for people nearby and an alert sent to your phone wherever you are.

- Easy to connect to your Wi-Fi, for alerts on your phone.
- Audible alarm to warn as many people as possible.
- Threshold of detection: 37 °C.
- Powered by 2x AA/LR6 battery.

OPTIONS

- Fire extinguisher automatically triggered at 79°C by special lithium thermal bulb (Ref. EX100LI or EX200LI (by smoke detection if included in the VIG190 / VIG290).
- Additional perforated shelf (ref: C150 and C300).
- Self-activating fire extinguisher (ref. EX100LI and EX200LI).
- Hole for 1 cable (ref. PEXTBALI14).
- Rack of electrical outlets for recharging batteries (ref. PRISELI / see the chart by country).
- Ventilation box (ref. CDVA).
- Connection kit (ref.KRC).
- Connected smoke detector (ref ALARMWI).
- Digital code lock (ref Sercode14).

P/N Black	P/N Blue	Description	External dimensions H x W x D (mm)	Load capacity per shelf (kg)	perforated shelves	Weight (kg)
AZ51NLI	AZ51BLI	1 door counter cabinet (AZVENT included)	Ext. : 1000 x 500 x 500 Int. : 890 x 498 x 453	51	2	26
AZ111NLI	AZ111BLI	2 doors counter cabinet (AZVENT included)	Ext. : 1000 x 930 x 500 Int. : 890 x 925 x 453	102	2	43
AZ151NLI	AZ151BLI	Tall cabinet 1 door (AZVENT included)	Ext. : 1950 x 500 x 500 Int. : 1840 x 498 x 453	51	4	55
AZ301NLI	AZ301BLI	Tall cabinet 2 doors (AZVENT included)	Ext. : 1950 x 930 x 500 Int. : 1840 x 925 x 453	102	4	102
C150		Perforated shelf for model type AZ51BLI and AZ151BLI	50 x 483 x 438	51	-	5
C300		Perforated shelf for model type AZ111BLI and AZ301BLI	50 x 913 x 438	102	-	10
EX100LI		Self-activating fire extinguisher at 79°C with special lithium bulb for AZ51BLI, AZ111BLI, AZ151BLI			-	2
EX200LI		Self-activating fire extinguisher at 79°C with special lithium bulb for AZ301BLI			-	3
PRISELI14		Rack of 8 electrical outlets (250 volts - 4000 watts - 16 amps) Rack in E & F socket; Wall outlet in E socket (included PEXTBLALI14)			-	2
PRISELIF14		Rack of 8 electrical outlets type F (Germany) (included in PEXTBLALI14)			-	2
PRISELICH14		Rack of 8 electrical outlets type J (Switzerland) (included in PEXTBLALI14)			-	2
PRISELIUK14		Rack of 7 electrical outlets type G (UK) (included in PEXTBLALI14)			-	1,7
PRISELICC14		Rack of 6 electrical outlets equipped with a thermal magnetic circuit breaker (4000 watts) (included inPEXTBLALI14)			-	-
PEXTBALI14		Hole for cable passage with cable passage at the bottom for 1 cable.			-	2
SERCODE14		Digital code lock for 14ELI series			-	1
CDV-A		Steel ventilation box			-	8
KRC		Connection kit for box (between box and cabinet)			-	1
AZVENT		Drilling for ventilation connection			-	-
ALARMWI		Connected smoke detector with alarm on mobile application in case of triggering with wifi connection			-	-
SED		WiFi alarm and data logger system			-	1

© ECOSAFE reserves the right to discontinue or change specifications or designs at any time without notice and without incurring obligations. 01/2024

TABLE OF COMPOUND REFERENCES FOR LITHIUM CABINETS

RANGE 14ELI

P/N Black colour : Blue colour :	Fire extinguisher	shelves perforated	Rack of 8 sockets + cable management lower part	Connected wifi alarm
AZ51BLIP2WI	-	2	2	1
AZ51NLIP2WI	-	2	2	1
AZ51BLIAP2WI	1	2	2	1
AZ51NLIAP2WI	1	2	2	1
AZ111BLIP2WI	-	2	2	1
AZ111NLIP2WI	-	2	2	1
AZ111BLIAP2WI	1	2	2	1
AZ111NLIAP2WI	1	2	2	1
AZ151BLIP4WI	-	4	4	1
AZ151NLIP4WI	-	4	4	1
AZ151BLIAP4WI	1	4	4	1
AZ151NLIAP4WI	1	4	4	1
AZ301BLIP4WI	-	4	4	1
AZ301NLIP4WI	-	4	4	1
AZ301BLIAP4WI	1	4	4	1
AZ301NLIAP4WI	1	4	4	1

ADDITIONAL EQUIPMENT



PEXTBALI14



SERCODE 14



EX100LI / EX200LI / EX500LI



PRISELI14



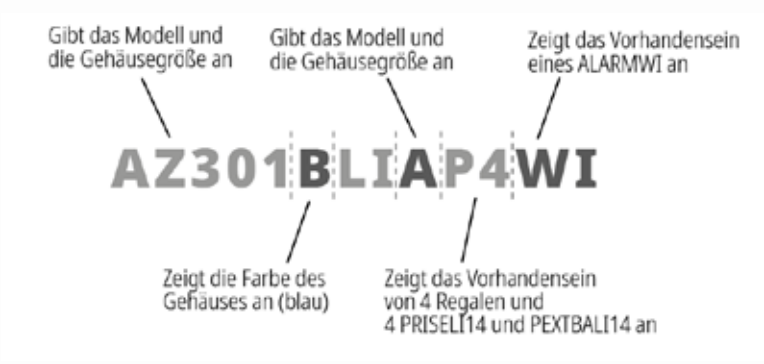
ALARMWI



SED

▼ **Example of a lithium reference composition**



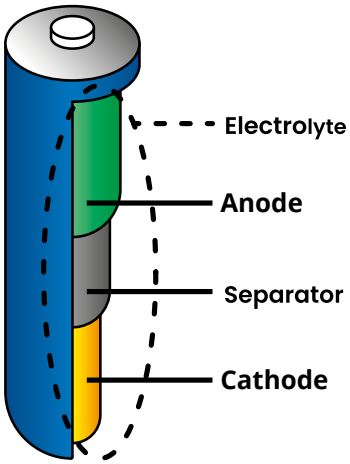


© ECOSAFE reserves the right to discontinue or change specifications or designs at any time without notice and without incurring obligations.10/2023

RISKS ASSOCIATED WITH LITHIUM-ION BATTERIES

WHAT IS A LITHIUM-ION BATTERY?

A Li-ion battery, or Li-ion accumulator, consists of two electrodes (cathode and anode) and an electrolyte that ensures the ion exchange of the system.
During the discharge (use) of the battery, ions move from the anode to the cathode. During charging, the reverse occurs. These two electrodes are insulated by a separator to prevent a short circuit.



WHAT ARE THE DANGERS ASSOCIATED WITH THESE BATTERIES?

Of the 50 potential accidental scenarios identified by INERIS (Institut National de l'Environnement Industriel et des Risques) during the various stages of the battery life cycle, 12 were considered critical. They concern in particular the storage, recharging and use stages. The most problematic outcome of these risks concerns battery fire (or metal fire). This is a significant risk because the fire caused by Li-ion batteries cannot be extinguished in a conventional way, as the battery itself generates the oxygen molecules and heat needed for combustion. It can only be extinguished with the help of special powders, all in a confined environment (with the risk of the powder losing its effectiveness).

HOW DO THESE BATTERY FIRES ORIGINATE?

By thermal runaway due to overcharging or exposure to excessive temperatures

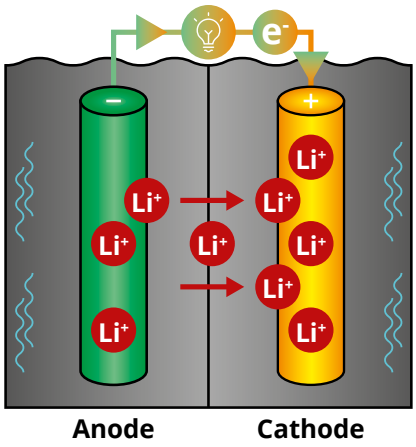
A battery usually delivers the chemically stored energy on discharge as electrical energy. However, not all of the energy may be delivered as electrical energy, but may cause overheating that can be as much as 7 to 11 times the electrically stored energy. Given the structure of the battery, the reaction itself becomes stronger and causes critical overheating. The materials of the battery also release bound oxygen, which further fuels the fire.

By full discharge

The full discharge associated with not using the battery for too long periods can damage the battery. If the battery is then exposed to temperatures that are too cold, this can cause a change in the physical and chemical properties of the electrolyte liquid and lead to the formation of flammable gas. The absence of the liquid breaks down the protection of the battery, leading to a short circuit or fire.

By mechanical damage

Shocks or misuse can damage the internal structure of the battery and lead to deterioration of the battery separator, leading to a short circuit or fire.



Top, components of a Li-ion battery.
Below, how a Li-ion battery works in use.

HOW TO STORE THEM SAFELY?

Storage recommendations depend on the size and power of the battery:

Low power lithium batteries (less than 100 Wh per battery)

Those are the small batteries contained in mobile phones or computers, for example.
No special safety requirements apply here, as long as all the manufacturer's instructions and safety locations are followed.
For larger quantities stored (volume over 7 m3) the guidelines for medium capacity lithium batteries applies.

Medium capacity lithium batteries (approx. 100 Wh per battery and 12 kg gross per battery)

Batteries in this category are used in electric bicycles, electric scooters or similar small vehicles. They should be stored in separate fire-resistant enclosures (e.g. a fireproof room or safety cabinet).
They should not be stored with other products and this area should be constantly monitored.
For larger quantities stored (area occupied at 60 m2) the guidelines for high power lithium batteries applies.

High capacity lithium batteries (more than 100 Wh per battery and 12 kg gross per battery)

Batteries in this category are mainly used in electric cars and large stand-alone appliances.
The recommendations for the storage of medium power batteries should form the basis for consideration. However, safeguards should be put in place on a case-by-case basis after consideration.

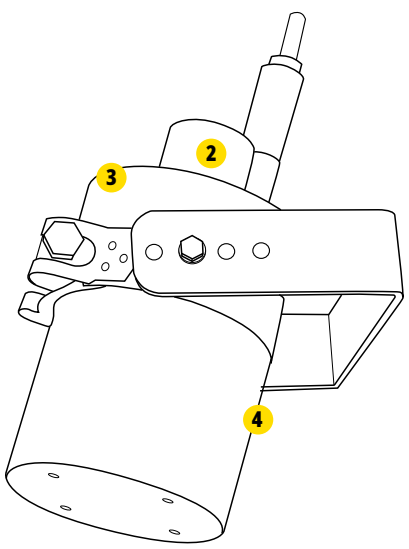
- If the storage space is large, fire protection must be adapted.
- If the use of sprinklers is allowed, it should be as localised as possible and it is recommended that the batteries are separated and stored in a confined environment to prevent a fire outbreak.

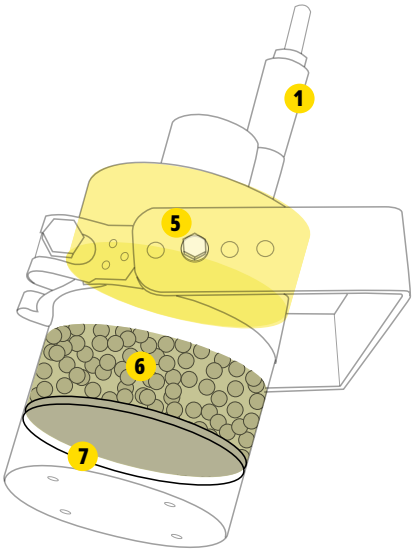
© ECOSAFE reserves the right to discontinue or change specifications or designs at any time without notice and without incurring obligations. 10/2023

ISO 15276 | ISO 15779 | UL 2775 | NFPA 2010

HOW OUR INTERNAL FIRE EXTINGUISHER FUNCTION AGAINST LITHIUM-ION FIRES







1. Automatic triggering by Thermal bulb
2. Thermal connection
3. Stainless steel lid
4. Stainless steel hull
5. Solid component
6. Mineral resin
7. Watertight closure + filter

THE FIRE TRIANGLE ▼



TECHNOLOGY

The aerosol fire-extinguishing agent comes in the form of a solid solution using the latest condensed generation, composed mainly of potassium salt, without any pyrotechnic materials such as nitro-guanidine or nitro-cellulose.

On activation, the component transforms into a highly effective volatile solution («cloud») which spreads evenly throughout the protected enclosure using the momentum generated during the transformation process.

The aerosol agent is suitable for fire classes A, B, C & F (according to EN2 Classification) and A, B and C (according to NFPA10 Classification).

CHEMICAL REACTIONS IN A FIRE

A fire is a chemical reaction in which three elements must be present for combustion to occur.

What is the fire triangle?

- Combustion is an exothermic redox reaction. It's a chemical reaction between a fuel and an oxidizer. This reaction produces energy (heat) and combustion products. A fire is combustion that develops uncontrolled in time and space.
- For a combustion reaction to start, three elements are required: fuel, oxidizer and activation energy. This combination is symbolically represented as a triangle.
- Fuel: This is the material likely to burn. It can be a solid (including dust and shavings) such as wood, paper or cardboard; a liquid (or liquefiable solid) such as gasoline, alcohol, etc.; a gas, such as butane, propane or hydrogen; or a metal or cooking oil. This is the reducing agent in the redox reaction. These fuels are categorized by fire classes.
- Oxidizer: The oxidizer is the second reactant in the chemical reaction. Except in very special cases, oxygen (O2), naturally present in ambient air (21%), is the main oxidizer.
- Activation energy: To initiate combustion, a supply of energy is required. Electric arc, thermal radiation, temperature rise and friction are the main sources of energy needed to trigger the combustion reaction.

© ECOSAFE reserves the right to discontinue or change specifications or designs at any time without notice and without incurring obligations.10/2023

ISO 15276 ISO 15779 UL 2775 NFPA 2010

EXTINGUISHING PRINCIPLE

Conventional extinguishing generally works by two methods:

- Suffocation or asphyxiation: depletion of oxygen in the air below 15% of normal levels puts pressure on the fire and extinguishes it.
- Cooling: liquid solution to ensure heat absorption.

For both these methods, the fire triangle is no longer respected, ensuring that the flames are extinguished.

The aerosol fire extinguishing agent extinguishes fire by inhibiting the chemical chain reactions present in combustion, at the molecular level.
It eliminates free radicals from the flames and extinguishes the fire without depleting oxygen. In a typical fire, a molecular reaction develops between atoms and unstable fragments in the presence of oxygen. This process continues until the fuel is exhausted.
When the unit is activated, the solid agent composed of the elements below is diffused onto the fire, following the natural convection currents of combustion.

- Potassium nitrate: 77%
- Potassium carbonate: 4% (potassium carbonate)
- Magnesium: <1%
- Polymer resin: 18%

The solid particles of potassium salt, just a few microns in size, are suspended in an inert gas with an extremely high surface area. This increases efficiency and has the advantage of dispensing less extinguishing agent.
When the solid agent reaches and reacts with the flame, potassium radicals (K) are formed mainly from the dissociation of K2C03. These K particles combine with other hydroxyl free radicals (OH) to form stable products such as KOH. This action extinguishes the fire without depleting or absorbing the ambient oxygen content. KOH also reacts in the presence of C02 to form K2C03. The solid particles of potassium carbonate (K2C03) are less than five micrometers in diameter and remain suspended in the protected chamber/enclosure for at least 30 minutes.
The aerosol fire-extinguishing agent is used as a total flooding agent in fire protection. However, unlike conventional gaseous agents, the total flooding effect is achieved without increasing the pressure in the protected enclosure. This makes it possible to protect any enclosure from a few cm3 to several hundred m3.

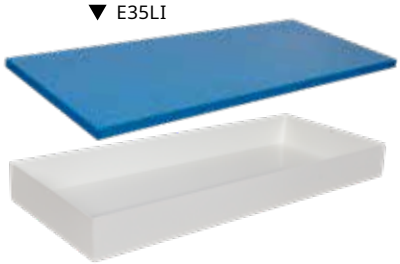
AVANTAGES

- Certified 15-year life cycle.
- Environmentally friendly.
- Non-corrosive.
- Non-toxic.
- Fully automatic activation system.
- Self-actuating agent at 300°C.
- Electric or manual activation.
- No piperack piping.
- No extinguishing agent storage cylinders.
- No pressurization: negligible maintenance.
- Low investment cost: electrical installation only.

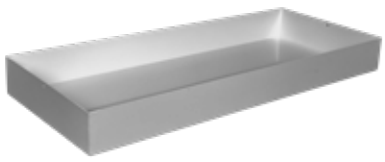
Ref.	Description	Dimensions H x Ø (mm)	Operational unloading time	Weight (kg)
EX100LI	Internal fire extinguisher for lithium battery	150 x 84	10 seconds	1,3
EX200LI	Internal fire extinguisher for lithium battery	185 x 84	10 seconds	1,8
EX500LI	Internal fire extinguisher for lithium battery	295 x 84	10 seconds	3,3

SHELVES & RETENTION BINS

▼ E35LI



▲ B235

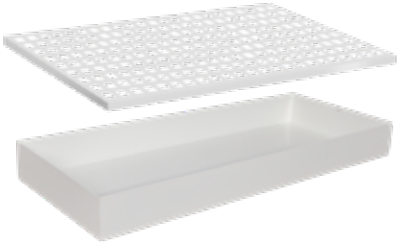


▲ ESE300

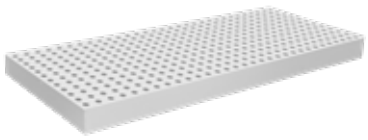


▲ R2FLI

▼ E06LI



▲ GL06



▲ C300

© ECOSAFE reserves the right to discontinue or change specifications or designs at any time without notice and without incurring obligations. 10/2023

NO-CHARGE STORAGE CABINETS FOR LITHIUM-ION BATTERIES



▲ AZ300BLI



▲ AZ150BLI



▲ AZ110BLI



▲ AZ50NLI



▲ COU300



▲ COU150



Ventilation box CDV-A (option)



Connected smoke detector ALARMWI (option)



Option SERCODE14

© ECOSAFE reserves the right to discontinue or change specifications or designs at any time without notice and without incurring obligations.10/2023





COMPLIANCE

- Complies with recommendation for risk prevention and safety.: allows batteries to be stored in a dedicated area.
- Standardised pictograms in accordance with ISO 3864-1 and ISO 7010 standards, and with the European directive 92/58/EEC.

ADVANTAGES

- Cost-effective solution for storing and charging your Li-ion batteries safely and in compliance with legislation.
- Standardised pictogram for the storage of Li-ion batteries.
- Work surface of the countertop cabinets (ref. AZ51BLI and AZ111BLI) covered by a rubber mat.

ACTIVE SAFETY

- Top and bottom ventilation holes on each door.
- Hinged door(s) with 110° opening angle.
- 3-point lock and key.
- Drilling for connection to a forced ventilation system. (ref. AZVENT), supplied with a Ø 100 mm sleeve (included).

PASSIVE SAFETY

- One-piece steel construction.
- Epoxy paint: Body grey RAL 7035; Door(s) blue RAL 5010.
- Perforated shelves, adjustable in height on racks, with a 15 mm pitch.

DESCRIPTION ALARMWI

This Wi-Fi smoke detector alerts you if there is smoke or excessive heat build-up. It alerts you with an audible alarm for people nearby and an alert sent to your phone wherever you are.

- Easy to connect to your Wi-Fi, for alerts on your phone.
- Audible alarm to warn as many people as possible.
- Threshold of detection: 37 °C.
- Powered by 2x AA/LR6 battery.

OPTIONS

- Ventilation box (ref. CDVA).
- Connection kit (ref. KRC).
- Connected smoke detector (ref ALARMWI).
- Digital code lock (ref Sercode14).

INSULATING CUSHION OPTION

- Cushions with non-flammable textured glass fibre filling (ref. COU150 et COU300). Absorbent, dust-free, flame-retardant according to DIN 4102-4 and non-conductive material.

P/N Black	P/N Blue	Description	External dimensions H x W x D (mm)	Load capacity per shelf (kg)	Perforated shelves	Weight (kg)
AZ50NLI	AZ50BLI	1 door counter cabinet (2 fireproof & AZVENT cushions included)	Ext. : 1000 x 500 x 500 Int. : 890 x 498 x 453	75	2	28
AZ110NLI	AZ110BLI	2 doors counter cabinet (2 fireproof & AZVENT cushions included)	Ext. : 1000 x 930 x 500 Int. : 890 x 925 x 453	125	2	49
AZ150NLI	AZ150BLI	1 door tall cupboard (4 fireproof cushions & AZVENT included)	Ext. : 1950 x 500 x 500 Int. : 1840 x 498 x 453	75	4	59
AZ300NLI	AZ300BLI	Tall cupboard 2 doors (4 fireproof cushions & AZVENT included)	Ext. : 1950 x 930 x 500 Int. : 1840 x 925 x 453	125	4	102
COU150		Fire-retardant and absorbent pad for AZ150BLI and AZ50BLI	600 x 400	-		1
COU300		Fire-retardant and absorbent pad for AZ300BLI and AZ110BLI	1000 x 600	-		2,7
ESE150		Containment sump/bin for AZ50BLI and AZ150BLI				6
ESE300		Containment sump/bin for A110BLI and AZ300BLI				10
SERCODE14		Digital code lock for 14FLI series				1
AZVENT		Hole for ventilation connection (included in AZ50BLI, AZ110BLI, AZ150BLI, AZ300BLI).				-
ALARMWI		Connected smoke detector with alarm on mobile application in case of triggering with wifi connection.				-
KRC		Connection kit for box (between box and cabinet)				1
CDV-A		Steel ventilation box				8

© ECOSAFE reserves the right to discontinue or change specifications or designs at any time without notice and without incurring obligations. 10/2023

SECURE TRANSPORT CASES FOR LITHIUM-ION BATTERIES



▲ VT1LI



▲ VT2LI

WHY CARRY YOUR LITHIUM BATTERIES IN SECURE CASES?

Lithium-ion batteries have become an essential part of everyday life and are used in many applications. However, they also present a high degree of potential danger and are subject to increasingly strict regulations, particularly during transport.

They are classified as dangerous goods and require generally approved packaging that must comply with strict safety regulations.. Our storage cases for Li-ion batteries are UN-approved for the transport of intact or defective lithium batteries.

CHARACTERISTICS AND COMPLIANCE

- REGULATION - EU -2023/1542 - Article 42 - 4. Storage or transport conditions ensure the conformity of batteries.
- Cushions with textured fiberglass padding, flame retardant according to DIN4102-4 and non-conductive.
- Certified to STANAG 4280, DEF STAN 81-41, ATA 300, UN3480.
- IP67 approved: completely dust and waterproof to a depth of 1 m for 30 min.
- The total weight (including case and padding) must not exceed 13 kg.
- If the case is shipped, you must affix the class 9 hazardous materials label to the packaging.

ADVANTAGES

- The laser engraving of the approval number is easily visible by the control body.
- Reusable transport case.
- You can use these cases for shipments if the packing instructions are followed (see instructions).
- No individual packaging of the batteries is necessary.
- Stackable and extremely robust case.
- Possibility to install a padlock (2 eyelets).
- Simplified packing and shipping.
- To protect against a dangerous rise in temperature, the cells/batteries must be fully encapsulated in a non-combustible thermal insulation material. This insulation and absorption material is designed for the transport of new or defective Li-ion batteries. If your batteries leak, the cushions do not react with electrolytes or other hazardous substances and have a very high shock and electrolyte absorption capacity. They have a high compression elasticity and help to minimise shocks and vibrations during transport.

Ref.	Description	External dimensions H x W x D (mm)	Internal dimensions H x W x D (mm)	Weight (kg)
VT1LI	Transport case for lithium battery, 1 compartment	150 x 510 x 420	130 x 475 x 350	4,5
VT2LI	Transport case for lithium batteries, 2 compartments	150 x 510 x 420	130 x 475 x 350	4,5

© ECOSAFE reserves the right to discontinue or change specifications or designs at any time without notice and without incurring obligations.10/2023

NF EN 3-7+A1 CE

Additif sans fluor

FIRE EXTINGUISHER FOR LITHIUM-ION BATTERIES



▲ EX9LI ▲ EX6LI

COMPLIANCE

Fire extinguisher compliant with NF EN 3-7+A1 and the Pressure Equipment Directive 2014/68/EU.

TECHNICAL CHARACTERISTICS

- The fire extinguishers in the water range are auxiliary pressure refillable devices, fitted with a propellant capsule.
- Extinguishing agent: Water + fluorine-free additive + additional charge.
- New generation additives free of fluorinated chemical compounds PFAS perfluorohexanoic acid (PFHxA), PFOA and PFOS recognized as Persistent, Bioaccumulative and Toxic (PBT), safe for the environment, for living beings and totally biodegradable.
- Painted steel body and anti-corrosion coating in oven-cured epoxy polyester resin.
- Light alloy cover head protected against corrosion by black cataphoresis.
- Brass striker with nickel plating for better perforation and corrosion protection.
- Green safety pin, with plastic seal (breakable, non-repositionable seal with space for marking the verification date).

ADVANTAGES

- Easy to maintain and environmentally friendly.
- Hose with trigger valve and sprayer on pipe with crimped connection for targeted and metered delivery to the fire.
- Wide top opening for easy control and loading.
- Visualisation of the impact by locking the handle in the lower position.
- The extinguishers are charged with water not mixed with the extinguishing agent. The extinguishing agent is contained in a patented floating bottle (the extinguishing agent mixes with the water when pressurised). In this way, during regulatory checks, the water to be recycled can be discharged as it is not altered by the additive.

A fire extinguisher must be checked annually and overhauled every ten years by a competent person or organisation. It must be marked with a clearly identifiable label by the person or organisation that carried out the check.

P/N	Description	External dimensions H x W x Ø (mm)	Volume (L)	Fire class	Maximum energy capacity of the battery (Wh)	Weight (kg)
EX6LI	Fire extinguisher for Lithium	440 x 240 x 175	6	AB	135	11
EX9LI	Fire extinguisher for Lithium	590 x 240 x 175	9	AB	315	15

© ECOSAFE reserves the right to discontinue or change specifications or designs at any time without notice and without incurring obligations. 10/2023

VENTILATION OF YOUR CABINET

ESSENTIAL ACCESSORIES TO IMPROVE THE SECURITY OF YOUR CABINET

We strongly recommend that you add a ventilation or filtration box to your safety cabinet.
The box extracts the stagnant vapors contained in your cabinet and renews the air, thus reducing internal overheating.



▲CDV-A



▲CDV-A + option KRC + option KL100 + option CDS100



▲KRC

THE CDV-A VENTILATION BOX

Connected to the cabinet using a connection kit (ref. KRC); the fan included in this box allows the extraction of toxic vapors generated in the cabinet and sucked outside the building via a wall outlet to be created.

P/N	Description	Dimensions H x W x D (mm)	Weight (kg)
CDV-A	Steel ventilation box	235 x 260 x 245	8
KRC	Connection kit for box	-	1
KL100	Hose diam. 100 mm, per metre	-	0,2
CHJ	Steel connection sleeve diam. 100 mm	-	0,1
CDS100	Clamp diam. 100 mm	-	-

THE RIGHT QUESTIONS TO ASK

- **What is the composition of the fire extinguisher ?**
  Metal fires, and particularly lithium, are extremely difficult to stop. Nevertheless, the technology developed by our experts use an assembly of potassium nitrate and polyepoxide to act on the lithium fire.
- **Is it dangerous for humans ?**
  No, but it is of course recommended to properly ventilate in order to remove stale air.
- **How long does the fire extinguisher last and when should it be changed ?**
  The fire extinguisher does not require any specific maintenance during its lifespan of approximately 15 years.
- **How does a smoke detector work ?**
  It is an optical smoke detector, an electric voltage is applied to the terminals of the electrodes, generating a current caused by ionization of the air in the chamber. When the smoke particles enter inside, the intensity of the current is disturbed, which then triggers the detector alarm.
- **What is the volume of the «VIG» alarm in decibel ?**
  3 sound levels are possible depending on the connection made. We chose the most intense, at 109 db (A).

© ECOSAFE reserves the right to discontinue or change specifications or designs at any time without notice and without incurring obligations.10/2023