



SECTION 07

LITHIUM CHARGING



Keep your site safe, compliant, and running smoothly with our trusted range of site safety solutions. From high-visibility signage and secure barriers to essential PPE and lighting, our products are designed to protect your team and keep hazards under control. Built for tough environments, everything we supply is reliable, durable, and easy to use – giving you confidence that safety is never compromised.



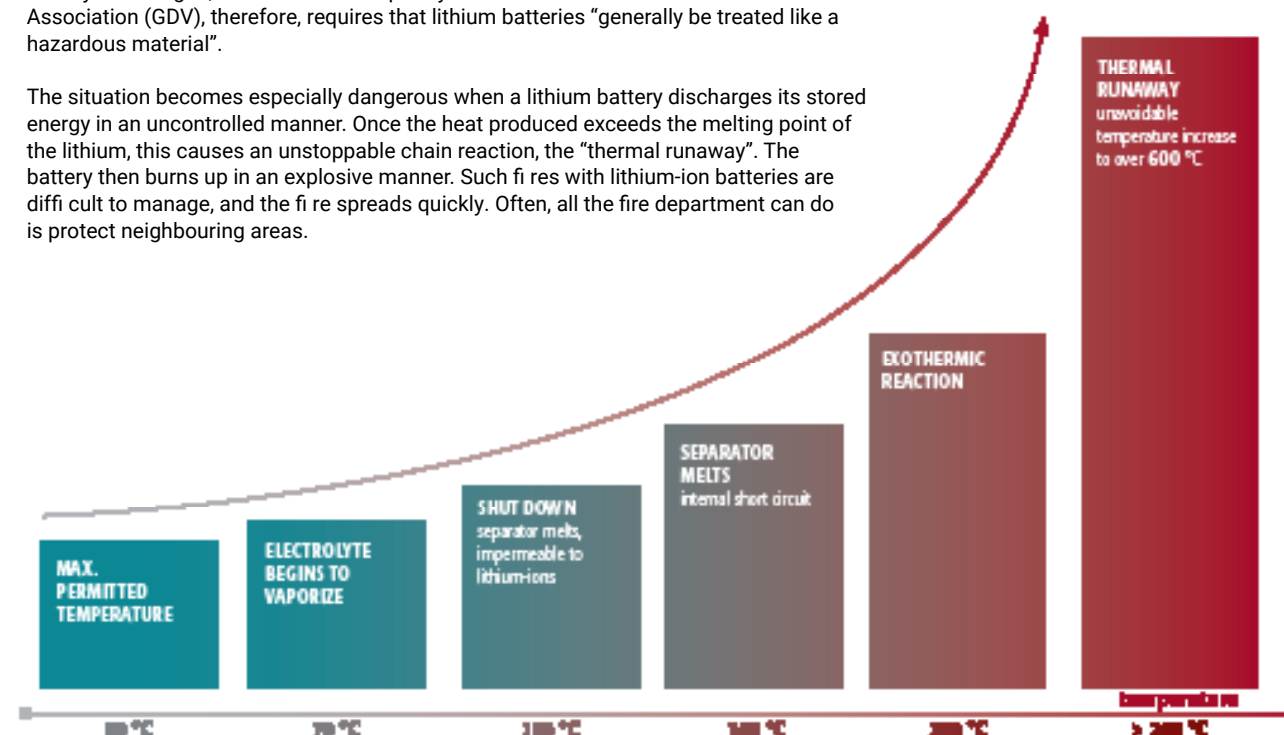
THE HAZARDS - THE THERMAL RUNAWAY

Lithium-ion batteries can cause a fire. Causes include:

MECHANICAL DAMAGE	DEEP DISCHARGE	THERMAL OVERLOAD	ELECTRICAL OVERLOAD
In combination with the high energy density of the battery	Unstable cell	Caused by external heat or energy sources	During charging and discharging

In normal operation, using lithium batteries is considered safe. However, according to the VDE this is true only if they are handled properly. If there is a technical defect or a battery is damaged, the situation can quickly become critical. The German Insurance Association (GDV), therefore, requires that lithium batteries “generally be treated like a hazardous material”.

The situation becomes especially dangerous when a lithium battery discharges its stored energy in an uncontrolled manner. Once the heat produced exceeds the melting point of the lithium, this causes an unstoppable chain reaction, the “thermal runaway”. The battery then burns up in an explosive manner. Such fires with lithium-ion batteries are difficult to manage, and the fire spreads quickly. Often, all the fire department can do is protect neighbouring areas.





L-ION POD

LITHIUM-ION CHARGE & STORE

The L-ION POD is the latest innovation in lithium-ion safety, ensuring a safe and practical fire-resistant environment where lithium-ion batteries can be both stored and charged efficiently outdoors. The pods are made to order and can be ordered with any size or configuration to suit the demands of your environment and equipment.

Lithium-ion batteries are becoming increasingly common in a growing number of industries, with environmental benefits as well as efficiency and lower running costs. With this rise in use, the spotlight has understandably been shone on the fire risk that is also unfortunately prevalent with these types of batteries.

Having worked closely with Eldapoint, developing synergy between our years of experience in HSE and their ample years of manufacturing portable steel cabins, we have developed a product that is guaranteed to contain any fire for an hour that could potentially save lives as well as protecting any nearby infrastructure and equipment. These pods are easy to use, easy to transport, and incredibly versatile to fit the needs of any situation.



Certification

The unit is certified under a Passive Fire Protection Certificate for 1 hour.

All products used in the unit, including lining panels, doors and air vents, have been approved.

Passive fire protection is a barrier or shield stopping the spread of fire from one area to another.



1 HOUR CERTIFIED
FIRE RATING



STRONG &
SECURE



32 X 13AMP
OUTLETS



OUTDOOR
USE



Strong & Secure

Our Lithium-ion Battery Pods are fully welded, constructed from tough anticorrosive mild steel corrugated walls and roof panels and are specially designed to be vandal-proof. The pods are fitted with a high-security multi-locking steel door that includes a 10 – point locking system, kite-marked 1+ equivalent customised anti-drill cylinder, 1mm galvanised steel door skins, 2mm galvanised steel frame, 2mm galvanised steel lock reinforcement and 2mm galvanised steel strengthening ribs.

The L-ION POD units are very secure and are ideal for storing valuable goods.



1 HOUR CERTIFIED
FIRE RATING



STRONG &
SECURE



32 X 13AMP
OUTLETS



OUTDOOR
USE

Features & Benefits



FIRE PROTECTION

Automatic Power Shut down in the event of a fire.



TEMPERATURE CONTROLLED

Thematically controlled extract fan. The temperature on the thermostat is set in the control below the fan.



AIR TRANSFER GRILLES

LVV40 High performance vision style damper.



FORK POCKETS

Allowing for ease of maneuverability.



RACKING

4x decks of galvanised steel panels and central steel supports can safely hold up to 400kg per shelf.



POWER INLET & BEACON

Recessed Power inlet & Fire Alarm Beacon.



DIALLER

If the Fire Alarm Activates, the dialler will automatically send a Voice & Text message to pre-set phone numbers. The dialler Has a small Back up battery. Battery backup either from the Panel to which Communicator is connected or optional 9V PP3 battery

NOTE: Refer to Dialler instructions for setting up phone numbers & testing.



FIRE ALARM

In the event of a Fire, the Fire Alarm will automatically shut down power to charging circuits and extract fan.

Power to the Fire Alarm will remain energised. Note: The Fire alarm has 2 x 12V 1.2A backup batteries.

NOTE: Refer to Fire Alarm Panel Instructions for Setting & Resetting the alarm panel, testing and maintenance.



SUPPLY

- 63A Single-phase Power supply Required.
- Power Inlet 63A Single phase
- 2 x 32A Charging circuits (16 x 13A Socket outlets per circuit)

PEN Fault disconnecter device installed (no need to install Earth Rod for the unit)



90-MINUTE FIRE-RATED STEEL SECURITY DOOR

Including 10 – point locking system, kite-marked 1+ equivalent customised anti-drill cylinder, 1mm galvanised steel door skins, 2mm galvanised steel frame, 2mm galvanised steel lock reinforcement, 2mm galvanised steel strengthening ribs.



POWERING UP

On Energising the L-ion pod, the Matt-e PEN Fault disconnecter Isolator will Automatically Switch on the power to the Consumer Unit & Fire Alarm.

- Turn on Charging Circuit 1 & 2 circuit breakers (up is on).
- Chargers can now be plugged into 13A Sockets. Note: A 32A RCBO circuit breaker protects each charging circuit.

Do not overload each charging circuit

Technical Data	
Power Inlet	63Amp 3 pin Appliance inlet
Voltage	230
Pen Fault Protection	Matt'e MTE/A 27-100
Consumer Unit	2 x 6A , 2 x 32A
Power charging Circuit 1 -32A RCBO	16 x 13A outlets
Power charging Circuit 2 -32A RCBO	16 x 13A outlets
Thermostatically controlled Air Extract	200mm 530m3/hr, 36W Motor
Lighting—6A RCBO	1 x 4ft 20W None Corrosive batten
NOTE: Do Not Exceed power rating of 230 Volt 63A supply & Charging circuits.	WARNING: Pen Fault Protection Device This device automatically switches on 3 minutes after the power supply is energised.
Fire Alarm Panel	C-Tec, Fire Panel 2 Zone
Batteries	2 x 3.2 Amp 12V
Detection	1 x Smoke / Sounder
Visual Alarm	External Beacon / Sounder
Signalling	GSM Sim Card Speech and Text Dialler
Power Control	Automatic 230V Power Supply disconnection
NOTE: Test Fire Panel Batteries on connection of power supply.	





Solar Charging Station

STANDALONE TOOL CHARGING SYSTEM

The Solar Charging Station is a standalone portable charging unit that houses 40 individual charging stations that can be locked with a unique key. The station itself runs from direct solar power with no requirements for a mains power supply.

In the event of an emergency, the unit comes with an automated emergency shutdown to avoid any unnecessary damage or injury from defective equipment.

Features & Benefits

- Charging Input - 32A 3pin IP67
- Zero Emissions
- Zero Carbon
- Full Remote Monitoring
- Temperature monitoring in every charging locker for thermal runaway detection
- Automatic Shutdown if tool battery fault detected
- Audible & Visual fire alarm
- Lithium Fire Suppression System



Reduced
CO2 Emissions



Reduced
Fuel Costs



Reduced
Noise Pollution



SPECIFICATIONS

DIMENSIONS

Solar Charging Station

LENGTH:	3.05m
WIDTH:	2.44m
WEIGHT:	2000kg

Specifications	Battery Storage	DOD	Solar PV	Charging Input
Solar Charging Station	Lithium LFP 10kWh	95%	1.05kW	32A 3pin IP67



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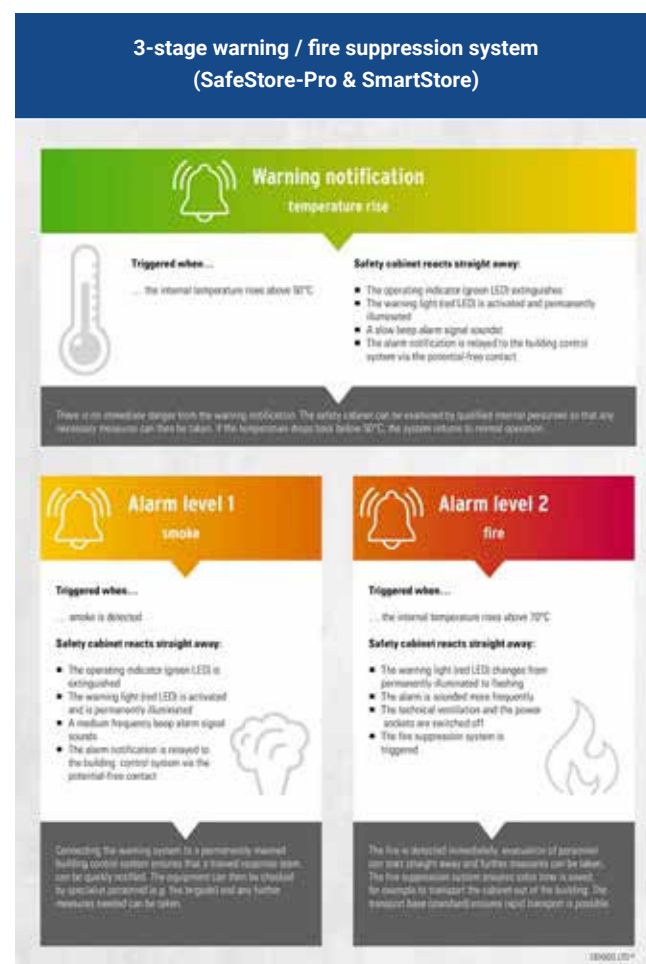
by asecos®

A fire-resistant hazardous materials cabinet is currently one of the safest ways to store and charge undamaged batteries. Our Lithium-ion battery storage and charging cabinets reliably protect the workplace and employees against mechanical defects within a battery and as a result can lead to "thermal runaway".

SmartStore: Safe Charging

The risk of fire increases if lithium batteries are charged. Our engineers were aware of the increased fire risk involved in charging processes, so the SmartStore model was developed especially for charging lithium batteries.

In addition to double-sided fire protection, fire suppression and sensor technology, the SmartStore has an additional technical ventilation to prevent heat build-up inside the cabinet. For convenient loading processes, we have integrated a charging station into each storage level. Smoke and temperature sensors provide continuous status monitoring of the safety cabinet. When the temperature rises or smoke develops in the interior, a 3-stage safety system activates the fire suppression and warning messages.



asecos Lithium-ion
battery charging cabinet
SmartStore-UK, 6 shelves,
W 1200 mm



Width, external	1193mm
Depth, external	615mm
Height, external	2224mm
Width, internal	1050mm
Depth, internal	522mm
Height, internal	1647mm
Weight	526kg

- Connection of the cabinet to a manned control centre (not a fire control centre) is mandatory for 24/7 all-round protection by the customer. A potential-free interface is available for connecting a signal
- Incl. warning/fire suppression system. The sophisticated, 3-stage alarm system inside the cabinet is triggered automatically in the event of a fire
- Ready to be connected to the mains power supply
- We recommend that SafeStore and SmartStore cabinets are delivered free to the place of use as part of the safety concept. We strongly recommend that the cabinets are sited at ground floor-level so that evacuation can take place quickly in the event of an incident. In addition we recommend that a maintenance agreement is signed for all SmartStore cabinets
- Incl. technical air extraction (to avoid a build up of heat in the inner room)
- Type-tested fire resistance of 90 minutes (type 90) from outside to inside according to DIN EN 14470-1, Fire resistance of 90 minutes from inside to outside according to DIN EN 1363-1
- With tested, liquid-tight spill pallet (powder coated sheet steel). For containment of any leaks from burning batteries
- With permanently self-closing doors and quality oil-damped door closers
- Doors can be locked with profile cylinder (closing system compatible) and lock indicator (red/green)
- With adjustable feet to be used on uneven floor surfaces
- Extremely robust construction with scratch-proof paint
- Integral base, accessible underneath, making it easy to change location
- Each storage level is equipped with a high quality socket board with a metal housing and 8 protected sockets. The socket boards are already fitted to the rear wall of the cabinet.
- Max. total output = 8,97 kW - optional, 400 V, 3-phase, fuse 3 x 13 A
- Each storage level is equipped with a high quality socket board with a metal housing and 8 protected sockets. The socket boards are already fitted to the rear wall of the cabinet.
- Option of 240v cable

asecos Lithium-ion
battery charging cabinet
SmartStore-UK, 4 shelves,
W 1200 mm



Width, external	1193mm
Depth, external	615mm
Height, external	2224mm
Width, internal	1050mm
Depth, internal	522mm
Height, internal	1647mm
Weight	502kg

- Connection of the cabinet to a manned control centre (not a fire control centre) is mandatory for 24/7 all-round protection by the customer. A potential-free interface is available for connecting a signal
- Incl. warning/fire suppression system. The sophisticated, 3-stage alarm system inside the cabinet is triggered automatically in the event of a fire
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- With permanently self-closing doors and quality oil-damped door closers
- Doors can be locked with profile cylinder (closing system compatible) and lock indicator (red/green)
- With adjustable feet to be used on uneven floor surfaces
- Extremely robust construction with scratch-proof paint
- Integral base, accessible underneath, making it easy to change location
- Each storage level is equipped with a high quality socket board with a metal housing and 8 protected sockets. The socket boards are already fitted to the rear wall of the cabinet.
- Max. total output = 8,97 kW - optional, 400 V, 3-phase, fuse 3 x 13 A
- Each storage level is equipped with a high quality socket board with a metal housing and 8 protected sockets. The socket boards are already fitted to the rear wall of the cabinet.
- Option of 240v cable

asecos Lithium-ion battery charging cabinet SmartStore-UK, 4 shelves, W 600 mm



Width, external	599mm
Depth, external	615mm
Height, external	1953mm
Width, internal	450mm
Depth, internal	522mm
Height, internal	1647mm
Weight	292kg

- Connection of the cabinet to a manned control centre (not a fire control centre) is mandatory for 24/7 all-round protection by the customer. A potential-free interface is available for connecting a signal
- Hazardous materials cabinets for the passive or active storage of lithium-ion batteries in accordance with DIN EN 14470-1 and DIN EN 1363-1 with a fire resistance of 90 minutes (Type 90) – fire protection from outside in. In addition, SmartStore models also have 90 minutes fire resistance from inside to out. The cabinets are a storage compartment in accordance with TRGS 510 – so the requirements of VdS 3103:2016-05 are met
- Incl. smoke detector with alarm contact for alarm transmission to the building control system, 2 socket boards, each with 10 sockets (alarm differentiation not required)
- Ready to be connected to the mains power supply
- With liquid-tight spill pallet (powder coated sheet steel). For the containment of any leaks from burning batteries
- With permanently self-closing door and quality oil-damped door closers
- Door can be locked with profile cylinder (closing system compatible) and lock indicator (red/green)
- With adjustable feet to be used on uneven floor surfaces
- Extremely robust construction with scratch-proof paint
- Integral base, accessible underneath, making it easy to change location (base can be closed off by optional panel). However, in order to ensure rapid evacuation in an emergency, we recommend using the cabinet without the base panel.
- We recommend that SafeStore and SmartStore cabinets are delivered free to the place of use as part of the safety concept. We strongly recommend that the cabinets are sited at ground floor-level so that evacuation can take place quickly in the event of an incident. In addition we recommend that a maintenance agreement is signed for all cabinets with a fire suppression system
- 1-phase, fuse 13 A max. total output = 5.98 kW - optional, 400 V, 3-phase, fuse 3 x13 A

asecos lithium-ion battery charging cabinet, SmartStore underbench cabinet 2.0-UK, W 600 mm



Width, external	593mm
Depth, external	637mm
Height, external	781mm
Width, internal	470mm
Depth, internal	450mm
Height, internal	580mm
Weight	137kg

- Includes safety pack, consisting of telecommunication module for alerting monitoring points via mobile phone network. Also included is a potential-free interface for connection to a manned control centre (not a fire alarm control centre). For 24/7 all-round protection of the cabinet, connection to a monitoring point is mandatory
- Type-tested fire resistance of 90 minutes (type 90) from outside to inside according to DIN EN 14470-1, Fire resistance of 90 minutes from inside to outside according to DIN EN 1363-1
- Makes perfect use of existing space under the workstation,
- With tested, liquid-tight spill pallet (powder coated sheet steel). For containment of any leaks from burning batteries
- Accessible underneath due to integrated transport base (castors can be ordered optionally in conjunction with the cabinet, cannot be retrofitted)
- Doors can be locked with profile cylinder (closing system compatible) and lock indicator (red/green)
- We strongly recommend that the cabinets are sited at ground floor-level so that evacuation of the whole cabinet can take place quickly in the event of an incident. In addition we recommend that a maintenance agreement is signed for all Safe- and SmartStore cabinets
- Extremely robust construction with scratch-proof paint
- Ready to be connected to the mains power supply
- With cylinder lock and locking indicator
- Including telecommunication module for alerting monitoring points via the mobile phone network

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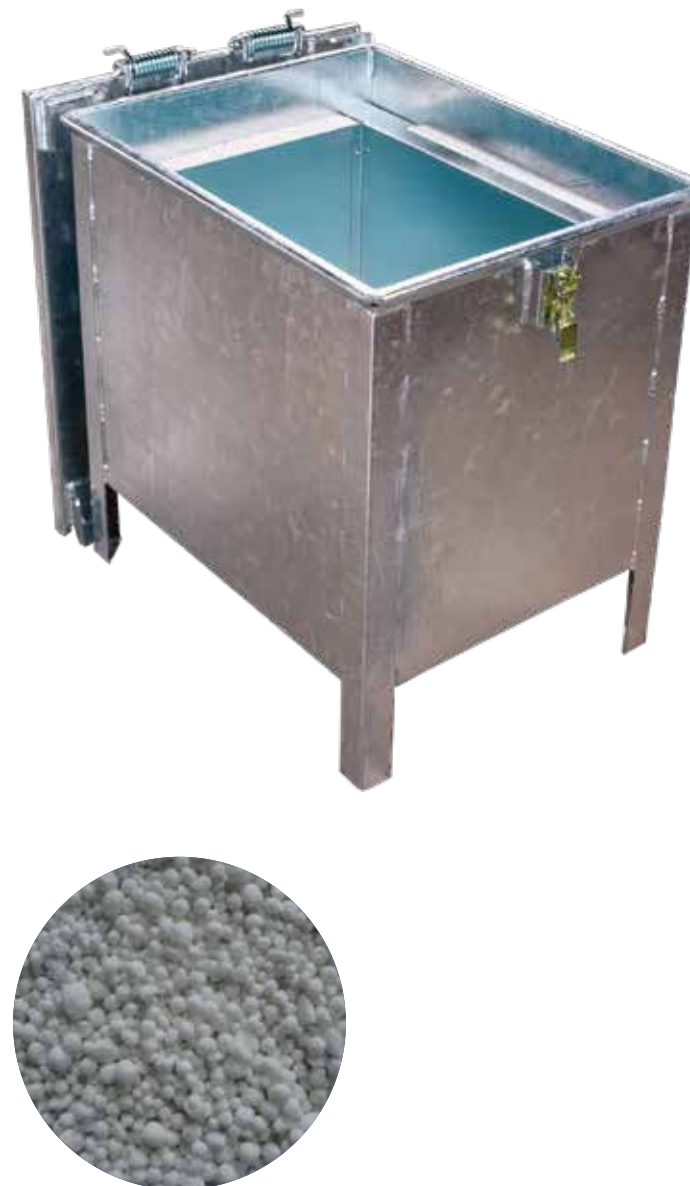
QUARANTINE

Lithium-Ion Battery Transport Box in Stainless Steel, 187 L, S-Box X1, Filling Pyrobubbles® included



- Safety system for storage and transport in accordance with Special Provision 376 ADR for damaged, faulty (Packaging Instructions P 908 and LP 904) and unsafe lithium-ion batteries (Packaging Instructions P 911 and LP 906)
- Certified, tested, with UN approval. Scientifically supported by real fire tests
- Reusable in the long term as a system, simple to use, with safety valves, secured with quick release fasteners
- 100% control of any possible thermal runaway Effective containment of environmental hazards. Even during and after battery thermal runaway, the temperature of the external walls remains well under 100°C
- Expensive packaging solutions can be replaced by safe, standardised solutions. The special containers are equipped with an overpressure valve. The Li-ion batteries stored inside are packed in PyroBubbles® so that there is no risk to the immediate environment
- Type approval: Packaging group I (ADR, RID, ICAO, IMDG)
- Stackable and lockable, no crane eyes, can be accessed from all sides by industrial trucks
- Pyrobubbles® is an extinguishing media positive tested by MPA Dresden according to DIN EN 3-7 for solid and liquid combustible substances (fire classes A, B, D and F)
- Packaging method recognised by the German Federal Institute for Materials Research and Testing, BAM
- No additional internal packing required
- Max. size of batteries to be put inside: 436 x 236 x 180 mm
- Includes PyroBubbles®Premium, packed in 4 paper bags, each 12.5 kg (approx. 50 l)
- UN approved with max. gross weight 160 kg and max. net weight 66 kg
- Transport of prototypes according to SP 310, PI P 910, LP 905

Lithium-Ion Battery Storage Container, 91.8 L, Galvanised Steel, Fill Material Pyrobubbles®



- The two-layer, galvanised metal walls are filled with PyroBubbles® and provide a safe storage space as a quarantine container. The required distance between the batteries and the outside is thus reliably maintained, and intense heating of the outer walls is avoided in the event of thermal runaway
- The lid is also protected by PyroBubbles®
- In the event of thermal runaway of the stored batteries, the immediate environment is protected
- The stored batteries are also protected against external influences for example fires.
- Simple and safe storage solution for lithium-ion batteries. Can also be used as a quarantine container for defective and damaged lithium-ion batteries
- Batteries or cells in cardboard boxes, loose or in other storage units are quickly stored. Suitable for storing intact or damaged batteries.
- Not suitable for the storage of critically defective batteries
- Maximum safety, minimum effort and practical handling
- The storage containers do not have to be placed in a separate fire compartment
- Lithium batteries are dangerous goods and are therefore subject to the dangerous goods regulations
- Container can be locked with optional padlocks

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Pyrobubbles® Premium, in paper bag, 12.5kg, for packaging group I, steel container use.



- Ideal filler for storing and transport of lithium ion batteries (UN 3480, UN 3090), mainly consisting of silicon dioxide with an average grain size of 0.5 to 5 mm.
- Absorbs electrolyte (BAM tested).
- Low thermal conductivity and electrically insulating
- Non-combustible building material (A1, DIN 4101, EN 13501)
- 100% environmentally-friendly
- Approx. 8-10 times lighter than sand, (approx. 230 kg/m³)
- Specific heat capacity of just 0.7 kJ/(kg.K), porosity of 85%
- Can be stored, low storage costs, maintenance-free and hydrophobic
- Mounting provides vibration protection
- Floats on the surface of liquids therefore especially suitable for fighting liquid fires regardless of polarity.
- Can be collected up after use and for the most part reused
- Porous hollow glass granules, building material class A-1 (DIN 4102, EN13501)
- Areas of application: For the safe transport of faulty and critical lithium-ion batteries in accordance with ADR 2019 (SV 376, SV 377, SV 310, P 911) Anywhere where combustible liquids, metal shavings and dusts are present When damage due to the extinguishing medium needs to be avoided When fire loads cannot/should not be extinguished with water To provide permanent insulation of flammable substances/equipment (parts)
- Extinguishing media positive tested by MPA Dresden according to DIN EN 3-7 for solid and liquid combustible substances (fire classes A, B, D and F).
- For use in packaging group I/steel containers
- Thermal resistance: < 1050°C They begin to melt at higher temperatures, forming an enclosed, thermally insulating layer around the seat of the fire.
- PyroBubbles®Premium, packed in paper bags, each 12.5 kg (approx. 50 l)

Lithium-ion battery transport box in PP, 23 l, XS-Box 2 Basic, filling PyroBubbles®



- For transport in accordance with Special Provision 376, Packing Instruction 908 ADR for damaged and defective lithium-ion batteries.
- Transport of prototypes according to Special Provision 310, Packing Instructions P 910
- Transport for recycling purposes as defined by Special Provision 377, Packing Instruction 909, for non-damaged and non-defective or EOL (End of Life) lithium-ion batteries
- Applications for e-bike batteries, power tools, laptops and mobile batteries, car batteries, e-vehicle batteries, etc.
- Safe protection from thermal runaway, exothermic reactions and therefore prevents damage to the environment
- Tested boxes, with UN approval
- Reusable in the long term, simple handling
- Operational temperature from -20 to 80°, Storage temperature 15 - 30°
- Pyrobubbles® is an extinguishing media positive tested by MPA Dresden according to DIN EN 3-7 for solid and liquid combustible substances (fire classes A, B, D and F)
- Incl. 30 small PE cushions, each 225 x 145 x 20 mm, filled with PyroBubbles®Pure, approx. 0.7 l, 0.22 kg
- Max. size of batteries to be put inside: 280 x 180 x 145 mm
- UN approved with max. gross weight 13 kg
- Type approval: Packaging group II (ADR, RID, ICAO, IMDG)
- Incl. 30 small PE cushions, each 225 x 145 x 20 mm, filled with PyroBubbles®Pure approx. 0.7 l, 0.22 kg

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Lithium-ion transport box K470 Akku Safe Compact



- Approved dangerous goods packaging for lithium-ion batteries UN 3480, UN 3481
- For storage and transport of defective or damaged lithium batteries according to ADR SV 376 and packing instruction P908. Approval also for the transport of critically defective lithium batteries according to ADR SV 376 and P 911
- Maximum outside temperature below 100°C, no escape of flames and splinters in the event of an accident
- High dielectric strength, i.e. also suitable for powerful batteries such as power tool batteries
- Padding and absorbent material non-combustible, non-electrically conductive and dust-free. Filler material in textured glass fibres
- Box also ideal for storing lithium-ion batteries
- Suitable for lithium-ion batteries (UN 3480) up to max. 1384 Wh
- Max. gross mass dangerous goods approval: 65 kg
- Practical container with 3 spring drop handles, stacking corners and comfort latches
- UN Packaging code 4B/X65/S/21/DBAM8311...
- Suitable for batteries of power tools, garden tools, prototypes or e-bike batteries

Technical Data

Volume [l]	42
Material	Aluminium
Width, external [mm]	600
Depth, external [mm]	400
Height, external [mm]	250
Width, internal [mm]	550
Depth, internal [mm]	350
Height, internal [mm]	220
ADR special regulation	SV 310, SV 376, SV 377
ADR packaging instructions	P 908, P 909, P 910, P 911
Weight [kg]	11,5
Application	Lithium batteries

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