

To the future and back again. Disposal of lithium-ion batteries



> RETRON

Secure system solutions for the storage and transport of lithium-ion batteries – for example in the field of electromobility. RETRON makes sure that even faulty or critical lithium-ion batteries will find their safe way home.

www.retron.world



About the whims of lithium

Brave new electronic world. Electric lawn mowers, vacuum cleaners, e-bikes or wireless tools are omnipresent and quite handy. The one thing they all have in common is lithium-ion batteries. But these are not only full of energy but also full of dangers. Especially faulty batteries can easily catch fire or – at worst – explode.

Our RETRON storage and transport system already considers all of the upcoming changes to the agreement regarding the International transport of hazardous goods by road (ADR) in 2019. Therefore RETRON is the future-proof system for transport and storage of lithium-ion batteries.

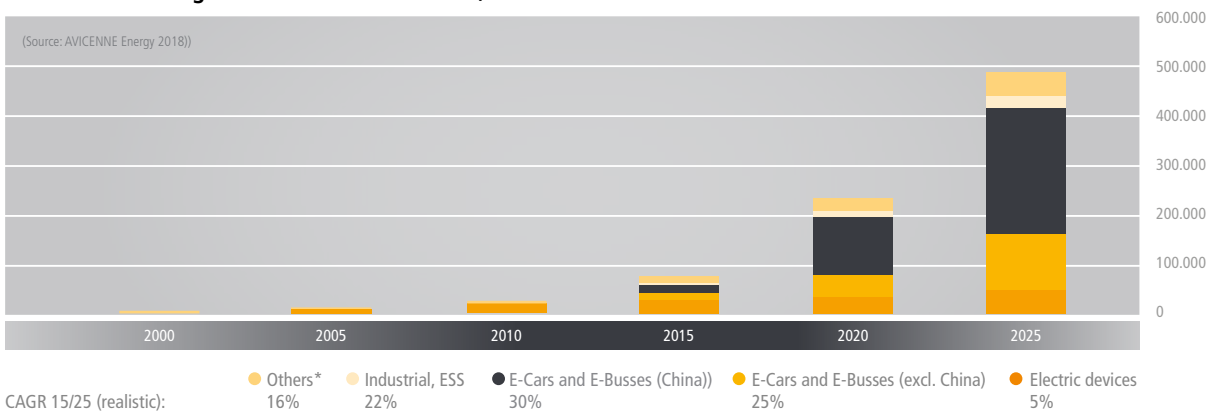
Dealing with the future

Wireless electric devices are used every day, not only since e-mobility has become a major issue. In the progressive electrification of our every day lives, lithium-ion batteries offer many practical benefits. High energy yield with a rather small volume makes them particularly popular for countless mobile devices. But these batteries won't live forever. Especially discarded, faulty or completely discharged batteries could become a threat to both people and the environment.

The professional disposal of lithium-ion batteries is a complex process that comes with a catalogue full of provisions and conditions that have to be observed. Due to this legal and administrative framework, trade, municipalities and industry are facing major challenges. Especially for small and medium-sized companies it is difficult to properly package and securely dispose faulty Li-Batteries. In addition they are facing high financial burdens due to the professional and lawful handling. A situation that calls for an urgent solution.



Worldwide sales figures of Li-batteries in MWh, from 2000 to 2025



* Others: medical devices, electric vehicles, garden tools, e-bikes...

To the future and back again

Any company dealing with lithium-ion batteries will sooner or later have to take back and dispose faulty or end-of-life batteries. Especially industrial companies use lithium-ion batteries every day. Due to the constantly

increasing electrification and the increasing sales of lithium-ion batteries as well as the rather long lifetime – 3 to 5 years for device batteries, 8 years or longer for industrial batteries – the process up to the return proves to be rather tedious.

Life cycle of lithium-ion batteries with the RETRON system



The safe solution

"Safety" and "easy handling" have the highest priority in all services and products REMONDIS offers. Based on these values we developed the new transport and storage system that makes the disposal of lithium-ion batteries not only easy but especially safe. Waiving all inert bulk materials is the clever and dust-free way to the solution. This solution is called RETRON.

The service of transport and processing is not only safe and easy to integrate into any business – it is a unique system – world wide.

As a two-in-one solution RETRON is both a storage and transport container, offers extreme thermal insulation, is dust-free and easy to use, adaptable and safe.





RETRON containers. Our warehouse heroes

The RETRON containers are our secret heroes. UN-approved for transport of End-of-Life, faulty or critical lithium-ion batteries as well as new goods, the high temperature resistant containers offer ideal protection in case of a thermal runaway. With a temperature of 1.000°C on the inside, the temperature on the outside is below 100°C due to its

impressive isolation – for three days. Further advantages are protection against pressure surges and projectiles as well as the emergency flue gas removal that can easily be connected to existing gas removal systems. RETRON containers offer ideal flame protection and are stackable and therefore space-saving.



Individually adjustable partition walls prevent contents from shifting during transport and loading.



RETRON is applicable as both changing and stationary system.



Safe storage of brand new batteries.

> All advantages at a glance

- Safe storage and transport of lithium-ion batteries
- UN-approved
- Dust free
- Gas management system
- High temperature resistant
- Heat, flame and projectile protection
- Stackable
- Applicable as both changing and stationary system



All containers are easily stackable.



The optional flue gas removal provides for additional safety in case of emergency.

RETRON Bags.

Simply putting danger in the bag



RETRON bags have been developed for storage and the following transport of faulty or critical lithium-ion batteries. These bags are perfect to securely store faulty batteries in workshops, warehouses and trade at short notice. They do not only offer fire and flame protection but are also insulating in case of a fire. The modernly designed bags are light-weight, re-useable and available in various sizes. Therefore they offer the safe inner packaging for the transport of lithium-ion batteries. The bag effectively replaces inert bulk materials. A propagation – a dangerous chain reaction in case of a fire – can therefore be prevented.



The innovative material replaces inert bulk materials. The bags are available in various sizes.



Upon request, we produce RETRON bags customised to your specifications.

RETRON. As system full of advantages

The RETRON storage and transport system consisting of the innovative RETRON bags and the practical RETRON containers offers a variety of advantages for household, trade, industry and municipalities.

Trades like DIY-stores, household supply stores or the currently highly frequented e-bike stores not only have to comply with their legal take-back obligation – they are also facing the challenge of securely storing and transporting potentially hazardous batteries. In order to minimise the dangers of storage, RETRON offers containers in three sizes in addition to the clever transport and storage bags. We have got the right size for any demand. The UN-approved and high temperature resistant containers are available with wheels or are stackable and also protect against pressure surges and projectiles. In case of emergency, an additional flue gas removal system starts running. Furthermore, RETRON is the innovative return system for industrial batteries – safe, simple and transparent. The system uses our multifunctional reusable bags for storage and transport of faulty and end-of-life batteries – all of this without using any inert bulk materials. The containers of the RETRON container range offer ideal heat and projectile protection and can be used as both change and stationary system. With RETRON, REMONDIS would like to support the recycling centres of

the municipalities that take charge of battery returns for the citizens. Due to the RETRON system and its professional storage the safety of the staff at the recycling centres is assured. The advantages are obvious.

Explosive? Poisonous? Highly dangerous? No problem.

REMONDIS Industrie Service, a fully owned subsidiary of REMONDIS AG & Co. KG, is a reliable partner for all businesses that need to have hazardous materials collected and recycled. We have been offering our industrial, commercial and retail customers clean and safe waste management solutions for all types of hazardous waste. Moreover, REMONDIS Industrie Service uses the materials collected by the company as a source of raw materials and energy – and is continuously working on developing new and innovative recycling processes.





Safe in the future. The RETRON service package

REMONDIS Group is not only your pan-European and reliable partner in the field of disposal of hazardous waste and the connected logistic requirements – our trained staff consults you to find the ideal and tailor-made system solution for your company.

The RETRON service package offers you a wide range of services that allows you to truly put all the dangers of lithium-ion batteries in the bag with good conscience. From consulting to staff trainings and information to maintenance and exchange of RETRON bags and containers up to the collection and safe disposal of your lithium-ion batteries, our staff is always right by your side.

Last but not least, in cooperation with our partners, RETRON effectively helps to save the environment due to a high recycling rate, modern plant engineering and environmentally friendly logistics. Because valuable precious metals like cobalt, nickel and manganese as well as other recyclable materials like plastic, alloy and electronic components will be led back into the raw-material cycle. An outright clean solution.

Technical properties of our containers



	RETRON 240	RETRON 460	RETRON 600
Inner dimensions (L x W x H) in mm	460 x 460 x 600	900 x 700 x 480	900 x 700 x 670
External dimensions (L x W x H) in mm	715 x 715 x 845	1200 x 1000 x 825	1200 x 1000 x 1025
Weight in kg	110	235	255

- Container made from galvanised steel
- approved as steel container (Code 4A) for VG I (X-coding)
- certified according to UN-definition 16034746
- circumferential with 6 massive (460 & 600), re-adjustable seals
- integrated forklift pockets, accessible with forklift truck (460 & 600)
- Height inner dimension forklift pockets 120mm (460 & 600)
- Weight relieving lid opening by use of hinge pressure-relief springs (460 & 600)
- Lid opening angle > 90°– overturning protection by use of a special drive rod
- Filter mount 2 1/2" made from stainless steel
- equipped with certified vent valve made from stainless steel – response pressure 20 mbar
- Container and lid lined with certified insulation insert (vacuum panels – due to metal basket protected from the inside against mechanical exposure)
- equipped with cargo protecting system consisting of 4 stainless steel profiles with grating and 2 alloy partition walls
- stackable



RETRON is part of REMONDIS Industrie Service which is part of the REMONDIS Group, one of the world's largest recycling, service and water companies. The company group has associated businesses in more than 30 countries in Europe, Africa, Asia and Australia. With over 30,000 employees, the group serves around 30 million people as well as many thousands of companies. The highest levels of quality. Working for the future.

REMONDIS Industrie Service GmbH & Co. KG
Brunnenstr. 138 // 44536 Lünen // Deutschland
T +49 2306 106-8938 // F +49 2306 106-686
industrie-service@remondis.de
remondis-industrie-service.de

A service of the REMONDIS group